

WIC What Matters to You

A Participant-Centered Approach to WIC Retention
Final Report January 2023



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TABLE OF CONTENTS

ABOUT PUBLIC HEALTH SOLUTIONS	0
Authors.....	0
Acknowledgements.....	0
Funding	0
TABLE OF CONTENTS.....	1
EXECUTIVE SUMMARY	4
Context.....	4
Program Description	4
Evaluation Design.....	4
Implementation Results.....	4
Caregiver Experience	5
WIC Staff Experience.....	5
Partner Experience.....	5
Long-term Impact on Recertification, Retention, and Benefit Usage.....	5
Lessons Learned and Recommendations for Local WIC Agencies and State Administrators.....	6
INTRODUCTION	7
PROGRAM DESCRIPTION.....	8
WMTY Workflow.....	8
Impact of COVID-19	9
WMTY Network.....	9
METHODS.....	10
Intervention and Comparison Site Selection	10
Project Implementation.....	10
Caregiver Engagement.....	10
Partner Engagement.....	10
Frequency of Specific Questions	11
Inventory of Social Needs	11
Short-term Impact on Caregiver, Staff, and Partner Experience and Perceived Value	11
Evaluation surveys.....	11
In-depth interviews	12
Staff focus groups.....	12
Partner focus groups	12
Transcription and analysis	13
Long-term Impact on Retention and Benefit Usage	13
RESULTS	16
Project Implementation.....	16
Caregiver engagement in the intervention workflow	16
Use of WMTY conversation guide questions.....	17

<i>Inventory of social needs</i>	18
Volume and outcomes of referrals made through Unite Us.....	19
Quality of referrals made through Unite Us.....	24
Referrals to WIC from partners.....	25
Caregiver Experience and Perceived Value	25
Presentation of IDI themes.....	25
Caregivers’ most valued parts of the WIC program.....	25
Caregivers’ least favorite parts of the WIC program	26
Barriers to participation	26
Discussing barriers to participation with WIC staff	27
Survey sample and disqualified responses	28
Recollection of conversation with WIC staff about referrals or community services	28
General discussion of needs outside WIC with staff	29
Perceived impact of discussing needs outside WIC with staff	30
Caregiver recollection of progress through referral workflow	32
Experience of caregivers with identified needs who did not receive referrals	33
Experience of caregivers with identified needs who received referrals	34
Perceived impact of option to be referred.....	35
Perceived impact of referrals.....	35
WIC Staff Experience and Perceived Value.....	37
Survey sample and response rate.....	37
Presentation of themes from focus groups with WIC staff	38
Using the WMTY conversation guide (Corona and Ocean Avenue ONLY)	38
Impact of WMTY conversation on needs identification (Corona and Ocean Avenue ONLY).....	39
Barriers to needs identification and referral.....	39
Feedback on referral process.....	40
Perceived impact of WMTY on participant experience and retention.....	41
Recommendations for next steps	43
Partner Experience and Perceived Value.....	44
Survey response rate	44
Quality of received referrals	44
Partner feedback on Unite Us for referral management.....	45
Responding to referrals	47
Barriers to responding to referrals (or service connections)	47
Helpful network management practices.....	47
Partner experience and perceived value of participation	48

Retention and Benefit Usage	49
Recertification	50
Timeliness of Recertification	50
Retention	51
Participation (i.e., benefit issuance)	52
Balancing the groups using PSW	53
Difference in Difference (DID) analyses	56
LIMITATIONS	59
Delay between WMTY conversation and participant evaluation	59
Qualitative data quality issues	59
Potential interviewer misunderstanding of IDI questions	59
Small survey sample sizes	59
DISCUSSION.....	59
Was the project implemented as intended?	59
How did eligible caregivers and partners engage in the WMTY workflow?	60
Did WMTY increase caregivers’ perceived value and reduce barriers to participation?.....	62
Did WIC staff perceive the WMTY project to be beneficial and worth continuing?	62
Experience using the WMTY conversation guide	62
Experience using Unite Us	63
Perceived impact of referrals	63
Perceived impact of WMTY project	63
Did partners perceive WMTY network participation to be beneficial and worthwhile?.....	63
Did WMTY contribute to improved participation and retention?	64
RECOMMENDATIONS	65
REFERENCES.....	67
APPENDIX A – Background Data Analysis	68
APPENDIX B – Site Selection	71
APPENDIX C – Interviewee Demographics.....	72
APPENDIX D – Referral Acceptance by Service Category and Site.....	74
APPENDIX E – Referrals Ending in Enrollment by Service Category and Site	74
APPENDIX F – Long Term Results.....	75

EXECUTIVE SUMMARY

Context

The United States Department of Agriculture (USDA) Food and Nutrition Service (FNS) reports that Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) participation has been declining nationally since 2011.¹ Public Health Solutions (PHS), the largest provider of community-based WIC services in New York State, sought to understand this phenomenon in the context of its Local Agency.

Internal retention data indicated children were most likely to exit WIC when they turned one and two, especially if their family was in the lowest income quartile. However, Supplemental Nutrition Assistance Program (SNAP) and Medicaid participation were associated with continued WIC participation. Results from a survey of PHS nutritionists indicated that participants' schedule/time constraints, concerns regarding the impact of Program participation, transportation issues, and lack of family support were factors influencing non-recertification.

These observations and analysis supported a strategy of increasing the perceived value of WIC as children transition from infancy to toddlerhood by better supporting families with competing and unmet household needs.

Program Description

In 2019, PHS received funding from the Hopkins/USDA Participant Research Innovation Laboratory for Enhancing WIC Services (HPRIL) to implement What Matters to You (WMTY), a participant-centered approach to WIC retention, targeting participants at the highest risk of dropping out of the program. WMTY adds to WIC's current processes regarding needs assessment and referral.

During the implementation period (February 2020 to January 2021), caregivers of children at two intervention sites coming up on their first or second birthdays discussed their highest priority needs with WIC staff. Caregivers with identified needs were then referred to services provided by a network of community partners. These partners then followed up with those caregivers and documented outcomes in a closed-loop electronic referral platform.

The COVID-19 pandemic impacted the implementation of the project. The WMTY conversation shifted from an in-person conversation with the nutritionist during nutrition education to a separate phone call with another PHS staff member different from the WIC appointment.

Evaluation Design

WMTY was evaluated using a mixed-methods quasi-experimental design with two intervention sites and three comparison sites within PHS's WIC program. The evaluation assessed implementation; caregiver, staff, and partner experiences; and long-term impact on participant retention and benefit usage. One comparison site was used to evaluate short-term impact and stakeholder experiences. An aggregate of all three comparison sites served as the comparison group for analysis of the long-term impact on recertification, retention, and benefits usage.

Implementation Results

From February 2020 to January 2021, 2,155 caregivers were eligible for the WMTY project. Of those, 78% received the WMTY conversation, 29% identified needs, 22% consented to referral, 21% were

referred to at least one service, 16% had a referral accepted, and 4% (95 families) were enrolled in a program or received services.

A total of 720 referrals were made for 461 caregivers, an average of 1.6 referrals per family; the most requested service was for food assistance, followed by housing support and childcare services.

Caregiver Experience

Caregivers currently perceive WIC as a limited community provider. While caregivers appreciated the option to receive referrals from WIC, they did not yet see WIC as the place to discuss needs beyond nutrition support. Even when probed about their needs, caregivers rarely voiced barriers to WIC participation. In interviews, many did not view their needs outside of WIC as “barriers” to participation and, as a result, did not identify any impediments.

Caregivers did not feel WIC could help them with their challenges or did not think WIC could provide a referral for their specific needs. Rarely did they mention referrals as a valued aspect of the program. Caregivers that did recall being offered referrals viewed them as a “perk” or something extra rather than a core component of WIC. Knowing that WIC can help connect to other services, however, positively influenced caregivers’ perception of the WIC program, once they were told about referral options,.

Caregivers generally had a positive perception of the impact of referrals. Nearly two-thirds of WMTY caregivers at the intervention sites felt the referral helped address issues that made it difficult to participate in WIC and connected them to needed services.

WIC Staff Experience

Overall, the staff viewed the impact of WMTY positively. Staff found the conversation guide helpful in facilitating discussion with a WIC caregiver, even if it did not always lead to needs identification or a referral. However, staff were less confident in their ability to make more referrals with the WMTY questions.

Staff also credited the program with improving WIC families' referral process and reducing barriers to participation. Staff also believed the project would help caregivers see WIC as a useful resource hub. However, staff were less confident about WMTY’s potential impact on recertification rates. They felt family-specific factors (e.g., income eligibility, child’s age, food/formula preferences) outside of the project’s control were more likely to impact a participant’s recertification.

Partner Experience

Despite initial setbacks with referral quality, partner organizations overwhelmingly found the project valuable and that it added to their current services. Half of the organizations were new collaborations with PHS. WMTY helped PHS establish new partnerships, grow its pool of partners, and diversify service offerings in its citywide network of community resources.

Long-term Impact on Recertification, Retention, and Benefit Usage

WMTY had a positive impact on recertification, retention, and continuous benefit issuance in the overall sample. In adjusted analyses, recertification was 7.7% higher (95% CI: 3.4%-12.0%), retention was 7.4% higher (95% CI: 3.0%-11.9%), and continuous benefit issuance was 5.5% higher (95% CI: 0.9%-10.1%).

Lessons Learned and Recommendations for Local WIC Agencies and State Administrators

Use a dedicated, participant-centered conversation guide. Such a guide encourages staff to probe participants about their highest priority needs and tie the outcomes of that conversation to referrals. This study found that the WMTY guide made it easier to identify participant needs.

Make the needs identification conversation and closed-loop referral available to all participants. Although WMTY focused on parents and caregivers of children at the highest risk of dropping out of the program, WIC staff repeatedly noted that all participants could benefit from the conversation and referral and wished eligibility had not been restricted to a specific group.

Integrate closed-loop referral platform with WIC Management Information System (MIS). The time spent on additional documentation beyond the required MIS substantially increased staff time spent with eligible participants. MIS integration with a closed-loop referral system would reduce the time required to assess and refer participants, make staff more likely to use the tool, and reduce the likelihood of errors associated with data entry in multiple systems.

Compensate network partners. Many organizations that were approached were unable to partner because they could not perform the labor involved in network participation (specifically referral management and timely outcome documentation) without compensation.

Expand staff capacity to manage referrals by establishing dedicated role at each site. WIC staff found it challenging and unsustainable to find and retain relevant information about referral options, while also performing all other required activities during nutrition education with WIC participants. A dedicated role within the WIC site to manage referral information and service offerings could improve the quality of referrals and help more families connect to community services.

Provide adequate training for qualitative interviewers during program evaluation. Program evaluators should ensure that the evaluation of the WMTY program delineates WMTY processes from general WIC processes. Adequate training on the program specifics and probing techniques will ensure interviewers probe specifically about WIC caregiver experiences related to WMTY rather than other WIC services and referrals.

INTRODUCTION

According to the United States Department of Agriculture (USDA), Food and Nutrition Service, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) participation has been declining nationally since 2011.¹ Public Health Solutions (PHS), the largest provider of community-based WIC services in New York State, sought to understand this phenomenon in the context of its Local Agency (LA). PHS' retention data from 2016 to 2018 indicates a large drop off in participation after children turn one and two ([Appendix A: Figure A1](#)). This drop-off occurs most dramatically among those in the lowest income quartile ([Appendix A: Figure A2](#)). Additional analysis of New York State (NYS) WIC Management Information System (MIS) data suggests that Supplemental Nutrition Assistance Program (SNAP) and Medicaid participation are positively associated with continued WIC participation ([Appendix A: Figures A3, A4](#)). Further, breastfeeding appears to be positively associated with multi-year retention in WIC; 55% of participants enrolled for two years, and 63% enrolled for three years were breastfed in infancy.

PHS nutritionists were surveyed (N = 19) to gain further insight into barriers to WIC retention. Over half (53%) of respondents believed that of the participants that drop out of WIC, most do so when their child reaches one year old. Nutritionists also cited several reasons for non-recertification: lack of perceived value of the child food package, schedule conflicts or time constraints, no longer qualifying financially after returning to work, inability to attain necessary documents, concerns regarding participation, and impact on immigration status, transportation costs, and lack of family support.

Given these obstacles, 79% of PHS nutritionists indicated that proactively identifying potential barriers to participation and addressing those needs might be effective at retaining participants. Other responses for potential interventions to improve WIC retention included: using education and outreach to explain the value of WIC to participants (53%), making recertification appointments home visits (42%), and allowing participants to have video call appointments in addition to in-person visits (42%). Nutritionists indicated that facilitating connections to health insurance (68%), childcare (68%), transportation (58%), SNAP (47%), housing (42%), and legal services (42%) could be particularly effective at retaining participants. These responses support a strategy of increasing the perceived value of WIC as children transition from infancy to toddlerhood by better supporting families with competing and unmet household needs.

In 2019, PHS collaborated with the Hopkins/USDA Participant Research Innovation Laboratory for Enhancing WIC Services (HPRIL) to address early exit from its WIC centers. PHS sought to adapt "What Matters to You?" (WMTY) as part of a participant-centered approach to improve WIC retention by targeting WIC families at the highest risk of an early exit from WIC. The concept of WMTY is based on the shared decision-making strategy introduced by Michael Barry and Susan Edgman-Levitan in 2012 and has been applied in a broad range of clinical settings to increase awareness of issues in patients' lives and facilitate conversations about the preferences, needs, and values of patients and families who receive healthcare and services.²

There were two main components of this innovation: the WMTY conversation and Unite Us. Caregivers of children coming up on their first and second birthdays were eligible to reach the WMTY conversation. Caregivers with identified needs were then referred to services within a coordinated network of community partners. These partners followed up with those caregivers and documented outcomes in

Unite Us, a closed-loop electronic referral platform. Unite Us is a New York City-based technology provider for networks of health and social service providers.

The goals of the WMTY project were two-fold: (1) document planning and implementation of an innovative and replicable tool for use by WIC clinics and agencies beyond New York City; and (2) utilize a mixed-methods quasi-experimental design – with intervention and comparison sites within the LA – to evaluate project implementation, experience of involved participants, staff, and partners, and impact on perceived value, participation, recertification, and benefit usage.

PROGRAM DESCRIPTION

WMTY Workflow

The program workflow was designed to begin with the Community Service Aide (CSA); CSAs received participants, check them in, and ask about basic referral needs, primarily for SNAP and Medicaid. CSAs would identify eligible caregivers, those who cared for children between the ages of 6-9 months and 18-21 months from the daily schedule at the intervention sites. Then the Qualified Nutritionist (QN) facilitated the WMTY conversation with the parents or caregivers of eligible enrolled children during nutrition education (Figure 1).

<p><u>What Matters To You Conversation Guide</u></p> <p>Purpose statement You have taken an important step for your child by attending the WIC appointment. Did you know, children who participate in the WIC program experience improved health and perform better academically? We appreciate your participation and like you to continue with WIC as long as you remain eligible for the service. In order to help you staying in the WIC program, we would like to learn more about your overall well-being and help you resolve any issues beyond WIC services.</p> <p>Question sets <i>[Any or all of the questions can be used depending on the flow of the conversation.]</i></p> <p>Questions Set 1:</p> <ul style="list-style-type: none">• Are you facing any issues right now that made it hard for you to take care of yourself or your family?• What problem would you most like help with right now? <p>Questions Set 2:</p> <ul style="list-style-type: none">• What are the difficulties you have been going through lately?• How could we help you? <p>Questions Set 3:</p> <ul style="list-style-type: none">• Which are some of the services that would help you with some of the difficulties you may be going through? <p>Probing notes for identifying participant’s referral needs <i>[We observed that talking about the available services helps participant think about their needs.]</i></p> <ul style="list-style-type: none">• Please mention 2-3 service at a time, hear participant’s response, before adding more. For example, food assistance / SNAP, health insurance, housing related services, public benefit assistance, job readiness program, early head start program, etc.

Figure 1. PHS-What Matters to You Conversation Guide

The outcomes of the WMTY conversation – whether the conversation happened and if needs were identified – were documented in the WMTY Daily Schedule and Tracker (WMTY DST), a tracker in Microsoft Excel. If the eligible caregiver identified any issues during the conversation and the respective services were available in the referral network, QNs obtained the caregiver’s consent for referral, created a profile in Unite Us, filled out the WMTY assessment form, and made the referral to partners

through Unite Us. Partners were then expected to accept appropriate referrals, contact referred families, provide services, close cases, and document referral outcomes.

Prior to implementation of WMTY, partners were recruited and onboarded, the WMTY conversation guide was developed and piloted, implementation and data collection workflows were documented, and the infrastructure for closed-loop referral to a network of partners was built in Unite Us. The WMTY project began implementation in February 2020.^a

Impact of COVID-19

On March 13, 2020, New York City Mayor Bill De Blasio issued a State of Emergency. PHS began emergency operations on March 16, transferring nearly all services (except WIC) and central operations to a virtual environment. Due to the day-to-day changes in policies and guidance for the WIC program, the WMTY project was paused from March 23-27 at both intervention sites. This gave the WIC staff some reprieve and allowed the WMTY project staff to plan modifications that would make implementation less burdensome during a time of unprecedented stress for staff. During the pause, no WMTY conversations were conducted, no referrals were made, and no referrals were received or acted on by partners.

The project resumed on March 30, 2020, with a modified workflow in which the WMTY Project Coordinator – or other WIC staff who could volunteer – placed a separate follow-up call to eligible caregivers who attended visits to conduct the WMTY conversation rather than having QNs conduct the conversation during the nutrition education portion of the appointment. WIC operations moved from in-person visits to remote/phone visits on March 31.

There was a second pause in WMTY at Corona WIC from July 9 to 31 due to a significant staff shortage. Activities resumed at Corona WIC in August when a staff member from another PHS program could help conduct the WMTY conversations.

In the fall of 2020, WIC staff were partially reintegrated into the workflow. Both intervention sites agreed to have their CSAs conduct the WMTY conversation and document identified needs in the WMTY DST. The WMTY Project Coordinator still created profiles in Unite Us, sought consent, and made the referrals in Unite Us. The workflow began in September 2020 at Corona WIC and October 2020 at Ocean Avenue WIC and lasted through the end of the implementation period (January 2021).

WMTY Network

PHS reached out to organizations serving the boroughs of Queens and Brooklyn and presented the program's goals and objective. 11 CBOs opted to participate in the closed loop referral network.

The Queens network had five CBOs and three PHS co-located programs. The available services in the Queens network included parenting education, Early Head Start, food assistance, health insurance, housing, public benefit advocacy, job search, substance misuse support, and domestic or intimate partner violence support. The Brooklyn network had five CBOs and two PHS co-located programs. The available services in the Brooklyn network included day care, universal pre-kindergarten enrollment,

^a Implementation began on February 18, 2020 at Corona WIC and February 20, 2020 at Ocean Avenue WIC.

after school and youth programs, food assistance, health insurance, housing, public benefit advocacy, job readiness and placement, language classes, and support for individuals with disabilities.

METHODS

Intervention and Comparison Site Selection

Intervention sites within PHS were selected based on three criteria: staff and Center Manager capacity to take on a new project, the extent of existing relationships with community-based organizations (CBOs), and the volume of children in the target age groups (those aged 6-9 months and 18-21 months).

Based on these criteria, the LA sites in Corona, Queens (Corona WIC) and Sheepshead Bay, Brooklyn (Ocean Avenue WIC) were selected as the intervention sites.

Prior to project implementation, HPRIL assisted Public Health Solutions in identifying a comparison group to allow for a contemporaneous comparison evaluation design. The comparison sites were selected based on being the least dissimilar to the intervention sites in terms of the proportion of participants in specific demographic categories. Categories most likely to influence retention in WIC, either as determined from internal analysis or the literature, were more weighted in the analysis ([Appendix B](#)). For the evaluation of short-term outcomes, the site in Ridgewood, Queens (Ridgewood WIC) was selected as the comparison site. For the evaluation of long-term outcomes, an aggregate of three non-innovation clinics in the Public Health Solutions clinic network served as the comparison group: Astoria, Queens (Astoria WIC); Jamaica, Queens (Jamaica WIC); and Ridgewood, Queens.

Project Implementation

To evaluate project implementation, the number of partners brought on board and the number of staff and partners trained on key aspects of the project were documented, in addition to the following metrics:

Caregiver Engagement

Caregiver engagement was assessed by quantifying the number and percentage of caregivers who: (1) were eligible for the intervention^b, (2) engaged in the WMTY conversation, (3) identified barriers to retention and/or social needs, (4) were referred to support services, and (5) enrolled in or received benefits or support services. These were calculated using data from the WMTY DST and Unite Us.

Partner Engagement

Partner engagement was assessed by calculating the number and percentage of (1) participants who had accepted referrals, (2) closed cases^c, and (3) cases that resulted in the receipt of benefits or services.^d Referral outcomes overall and referral outcomes by service category were also examined. Additionally, the number and percent of referrals rejected by partners and primary reasons for rejection were evaluated using referral status and outcome data sourced from Unite Us. The final metric of

^b Parents or caregivers of enrolled child aged 6-9 months or 18-21 with a scheduled appointment during the implementation period were eligible for the intervention.

^c In Unite Us terminology, once a referral is accepted by the receiving organization it becomes a "case." A closed case is a referral that has been accepted by the receiving organization and the work on it has been completed and an outcome is documented.

^d Cases that result in receipt of benefits or services are a subset of closed cases. Only closed cases have documented outcomes.

partner engagement was the total number of referrals from partners to WIC sites participating in WMTY.

Frequency of Specific Questions

To determine the frequency of use of each question from the WMTY conversation guide, the number and percent of caregivers with identified needs associated with each question was calculated.

Inventory of Social Needs

The number and percent of caregivers with identified needs who requested support in one or more of several pre-defined service categories were summarized to create an inventory of social needs using data from Unite Us.

PHS conducted data collection and analysis for all indicators related to project implementation. Significance testing for differences between intervention sites in caregiver engagement, partner engagement, frequency of specific questions, and inventory of social needs was performed using the chi-square test when the total number of observations was greater than 20, all observed frequencies were greater than zero, and no expected frequencies were less than 5. If sample sizes were too small to meet the observed or expected frequency conditions for the chi-square test, the Fisher's exact test was performed as an alternative. The two-proportion z-test was used to test for differences in referral outcomes by site within service categories. Statistically significant differences were determined to be those with a p-value less than 0.05.

Short-term Impact on Caregiver, Staff, and Partner Experience and Perceived Value

Caregiver, WIC staff, and partner perspectives were surveyed on their experience and perceived value of the program. The surveys were further contextualized by in-depth interviews (IDIs) and focus groups. Qualitative data was collected from caregivers who identified barriers to WIC retention and/or meeting their social needs during their WMTY conversation via 29 IDIs, from WIC staff through four focus groups, separated by site (Corona or Ocean) and role (CSA or QN), and from WMTY partners through two focus groups. The partner focus groups were initially separated by geography, but there was ultimately a blending between the two groups due to scheduling issues. PHS conducted data collection and analysis for all indicators related to the short-term impact on caregiver, staff, and partner experience.

Evaluation surveys

The post-intervention surveys for caregivers, WIC staff, and partners were online surveys built in Alchemer (a survey building software) and distributed via text (caregiver survey) or email (WIC staff and partners). The caregiver survey was made available in the 8 most common languages spoken across Corona, Ocean Avenue, and Ridgewood WIC (Arabic, Bengali, Chinese, English, Polish, Russian, Spanish, and Uzbek). The WIC staff and partner surveys were only available in English. Each survey was in the field for at least a week.

The surveys were analyzed by calculating the number and proportion of respondents to each response option per question. For questions with a 5-point Likert scale of agreement for response options, Strongly Disagree and Disagree were collapsed into a single Disagree category and Strongly Agree and Agree were collapsed into a single Agree category. Significance testing for differences in responses between intervention and comparison sites (caregiver and WIC staff surveys only) was performed using the chi-square test under previously stated conditions. If sample sizes were too small to meet the observed or expected frequency conditions for the chi-square test, the Fisher's exact test was

performed as an alternative. Significance testing for differences between response proportions to two different questions among respondents at the same site was performed using the two-proportion z-test.

In-depth interviews

The IDI guide was developed in collaboration with HPRIL and included questions about duration of WIC participation, likes and dislikes of the WIC program, barriers to participation, comfort in discussing needs and barriers with WIC staff, and the perceived value of conversations with WIC staff about needs outside WIC. Subsequent interview questions were tailored based on the interviewee's progress through the referral workflow. Specifically, they were asked to reflect on their experience with the parts of the referral process that they experienced, how the option to be referred and/or enrolled in other services makes them feel about what WIC can do, and how having access to additional services (via referral) or additional information affects their plans to remain in the WIC program.

Potential interviewees either responded to an outreach survey indicating their interest in participating in an interview or responded positively to direct outreach from the WMTY Project Coordinator. Those who self-identified as parents or caregivers of enrolled children in the target age ranges (6-9 months or 18-21 months), received the WMTY conversation and identified needs were eligible for an in-depth interview. A quota sampling approach was used to identify potential interviewees for outreach and scheduling to match the desired number and types of interviews. When possible, a diversity of language, child age group, WIC site, and service category (when referrals were made) were prioritized among those approached and interviewed ([Appendix C](#)).

Nineteen of the 29 IDIs were conducted with caregivers who were referred to services through Unite Us (9 who enrolled in services and 10 who did not enroll in services). The remaining ten were conducted with caregivers who did not receive a referral (5 who received information about helpful services in lieu of referral and five who received neither information nor referral). Each interviewee received a \$25 gift card in exchange for their time. All interviews were conducted virtually using RingCentral.

Staff focus groups

All QNs and CSAs at the intervention sites were invited to participate in a focus group. No incentives were provided as participation in evaluation activities was an expectation of staff at intervention sites.

The guide for WIC staff focus groups included questions about their experience (1) using the WMTY conversation guide to identify needs and (2) using Unite Us to make referrals, review outcomes, and communicate with others. Staff members were also asked to reflect on the perceived impact of the WMTY project on WIC families. Lastly, the guide included questions about their thoughts on what should be retained and/or changed if the project were expanded and recommendations for next steps.

Partner focus groups

At least one representative from each partner organization was invited to participate in a focus group. Representatives from 9 of 11 partner organizations ultimately participated in a focus group. No incentives were provided as participation in evaluation activities was an expectation of network membership.

The guide for partner focus groups included questions on experience with using Unite Us for referral management, referral quality and experience with the referral workflow, sustainability, recommendations for change, feedback on the overall experience, and perceived impact of services.

Transcription and analysis

The IDIs were conducted in English, Spanish, and Chinese. All focus groups were conducted in English. All English and Chinese audio recordings were uploaded to Sonix, a speech-to-text software, for initial transcription using artificial intelligence (AI). Then two reviewers read and edited each transcript while listening to the audio to ensure an accurate reflection of the recording. Spanish audio recordings were sent to GoTranscript, an online transcription agency, for clean verbatim transcription into Spanish. The Spanish transcription was translated into English using DeepL, a neural machine translation service that uses AI for translation. Staff with Spanish proficiency compared the English translation from DeepL to the Spanish transcript from GoTranscript and made edits to the English translation to improve accuracy.

The qualitative data from the IDIs and focus groups were analyzed using a thematic framework analysis approach.³ Multiple readers (two for the IDIs and partner focus groups and four for the WIC staff focus groups) read all their assigned transcripts and independently identified themes present in the data. The assigned readers then convened to consolidate and refine the list of themes for the associated data. These themes were then mapped to evaluation questions and objectives. A subset of the initial readers (one in the case of the IDIs and partner focus groups and two in the case of the WIC staff focus groups) created a “themebook” which defined each identified theme, mapped it to a topic from the interview or focus group guide, and included at least one exemplary quote from the data reflecting that theme.

Long-term Impact on Retention and Benefit Usage

HPRIL obtained MIS data from NYS to conduct statistical analyses evaluating the impact of the WMTY on outcomes related to child retention and participation. Data were obtained for two time periods: a baseline period that was the 2019 calendar year and an implementation period that was from February 1, 2020 to January 31, 2021. The data request was for all infants and children who were active in WIC at the beginning of each period. The HPRIL evaluation sought to compare changes in each outcome over time for the innovation group to changes for the comparison group.

The MIS data set included variables from the USDA minimum data set (MDS) necessary for describing the characteristics of the participants as well as for calculating each of the outcome variables. Because the data set included all infants and children active at the start of the period, we can examine the pattern of participation of a cohort of WIC participants over time. During any given 12-month period, each participant has an end date for the prior certification period and can be expected to recertify (or not). Participants can leave the program by not re-certifying, or they may recertify and then leave the program, and some may move and enroll in another WIC agency. Thus, at the end of the year, a child may still be active in WIC (that is, retained), inactive because they left the program, or re-enrolled at another WIC agency (e.g., they moved out of the area) (Table 1).

Each month benefits are issued for each WIC participant, and over a time period different patterns of issuance can be observed, with less than continuous benefit issuance indicating gaps in service due to, e.g., missed appointments. Although benefits are issued to a specific WIC participant, benefit redemption at the individual level is not generally available in MIS data, nor is partial redemption of benefits. Monthly benefit non-use, however, was available in the NYS MIS (Table 1). After our initial request for MIS data, NYS informed us that during the baseline period of 2019 the MIS transitioned to a new system. Some historical benefit issuance and non-use data would not be retrievable from the prior

system. Thus, for analyses regarding benefits issuance and non-use, 6 months of data during the baseline period were used to create the outcome variables.

Although MIS data were requested for all infants and children, the WMTY innovation was implemented among children in two age groups: 6-9 months of age and 18-21 months of age. Therefore, the impact analysis of WMTY was performed on a subset of children in the innovation and comparison groups at each time point who were age eligible and for whom the outcomes could be assessed.

The analyses here focused on three core outcomes regarding retention and participation. Initially, five outcomes were considered. First, child recertification was defined as documented recertification of the children during the 12-month period or during months 13-14 for those with certification end dates during the final two months of the period. Second, timely recertification was defined as recertification within 60 days of the end date of the prior certification period. Third, retention was defined by the child’s status at the end of each study period (i.e., active or terminated per the MIS). Fourth, child participation was measured by continuous benefit issuance (6 or 7 months during baseline and 11 or 12 months during implementation). Fifth, benefit non-use was defined by a child’s benefits being fully expired (no benefits redeemed) in a given month. During analyses, it was revealed that more than 90% of recertifications were timely (during each time period), and that benefit non-use was < 5% (during each time period) therefore, these outcomes were not investigated further.^{4,5}

Table 1. Child Retention and Participation Outcomes

Outcome	Description
Recertification	The proportion of children in the dataset with a recertification date during the period. Note: includes children who left the agency and/or were not classified as “active” at the end of the period
Timely recertification	The proportion of children (out of all children in the cohort) with a recertification date less than or equal to 60 days after the end of certification during the period
Not-timely recertification	The proportion of children (out of all children in the cohort) with a recertification date greater than 60 days after the end of certification during the period
Percent of recertifications that are timely	The proportion of children (only out of those with a recertification date) whose recertification date is less than or equal to 60 days after the end of the certification during the period
Retention	The number of children active at the end of the data period at the innovation or comparison agency / (The number of children overall at the beginning of the period - children at another local agency at the end of the period)
Continuous benefit issuance	The proportion of children who were issued 6-7 months (out of 7) during baseline period or 11-12 months of benefits (out of 12) during implementation
Months of benefit issuance	Median and interquartile range of proportion of children issued benefits across the year
Percent of cohort issued benefits	Average proportion of children that were issued benefits each month

Benefit non-use	Monthly proportion of children with fully expired benefits (only among children who were issued benefits that month)
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The analyses proceeded in stages. Descriptive analyses were conducted to describe the participant characteristics and outcomes for each group during each time period. We documented characteristics with a significant percentage of missing values (> 10%), which would limit their usefulness during analysis. To assess the comparability of the innovation and comparison groups within each time period, HPRIL compared participant characteristics, including participant category at the beginning and end of the data period; household size; the number of WIC participants in the household; multiple birth status; race and ethnicity; primary language other than English; the need for a translator; participation in other federal assistance programs such as TANF, SNAP, and Medicaid; and whether the participant was ever breastfed. Pearson chi-square tests were used to detect any significant differences between innovation and comparison groups in terms of participant characteristics and outcomes for each time period. Logistic regression analyses were also conducted to compare outcomes between groups within each time period adjusting for covariates. As noted above, reports of these analyses were created for each time period.^{4,5}

HPRIL employed a difference in difference (DID) approach to estimate program impact. As noted above, this involves the estimation of the changes over time in each outcome in the innovation versus the comparison group. Analyses were conducted for the overall sample as well as for infants (IBE, IFF and IBP categories) and children (C1, C2 and C3 categories). Because participants are not randomly assigned to the innovation or comparison group, analysis of the impact of WMTY is not straightforward. Participants are assigned to a WIC clinic based on residence which is determined by the participant's family and based on multiple factors. This may lead to the problem of selection bias if these same factors also affect the likelihood of recertification, retention, or participation.

To address this issue, HPRIL employed propensity score weighting (PSW) to adjust for differences in participant characteristics between the innovation and comparison groups at each time period (labelled T1 and T2) as well as differences across the two time periods. Two common weighting approaches were used. In the first, weights were estimated using multinomial logistic regression in which observations are weighted as compared to those in the innovation group during T1 as per Stuart et al., 2014.⁶ In the second, a kernel approach for repeated cross-sectional data was used to weight observations relative to the innovation group during T2 as per Villa 2016.⁷ To illustrate the balance in participant characteristics achieved through weighting, HPRIL compared the absolute standardized differences (ASD) for the means of each variable before and after weighting in the overall sample, for infants, and children. This involved comparing the balance achieved for the innovation group over time (at T1 and T2), the innovation group at T1 and comparison group at T1, and the innovation group at T1 with comparison at T2. This approach was repeated for analyses involving infants or children.

The outcomes are shown and compared over time using unweighted and weighted data to fully present the results. HPRIL conducted DID analyses for all three outcomes (recertification, retention, and participation/benefit issuance) overall, for infants, and for children. Beta coefficients and 95% confidence intervals were calculated using three models: (1) Crude, unweighted; (2) Adjusted Model 1 (A1): PSW-DID using logit for propensity score weighting (PSW) and ordinary least squares (OLS) for DID; and (3) Adjusted model 2 (A2): PSM-DID using Kernel for propensity score matching (PSM) and probit for DID with repeated cross-sectional option.

RESULTS

Project Implementation

Caregiver engagement in the intervention workflow

Throughout implementation, 2,155 caregivers were identified as eligible for the WMTY project. Of those eligible, 78% received the WMTY conversation, 29% identified needs during that conversation, 22% consented to have their information entered into Unite Us for the purposes of referral, 21% were referred to at least one service, 16% had a referral accepted, and 4% (95 families) were ultimately enrolled in a program or service or received assistance (Figure 2).

Eligible caregivers from Corona WIC were significantly more likely to participate in each phase of the WMTY workflow than eligible caregivers at Ocean Avenue WIC (Figure 3).

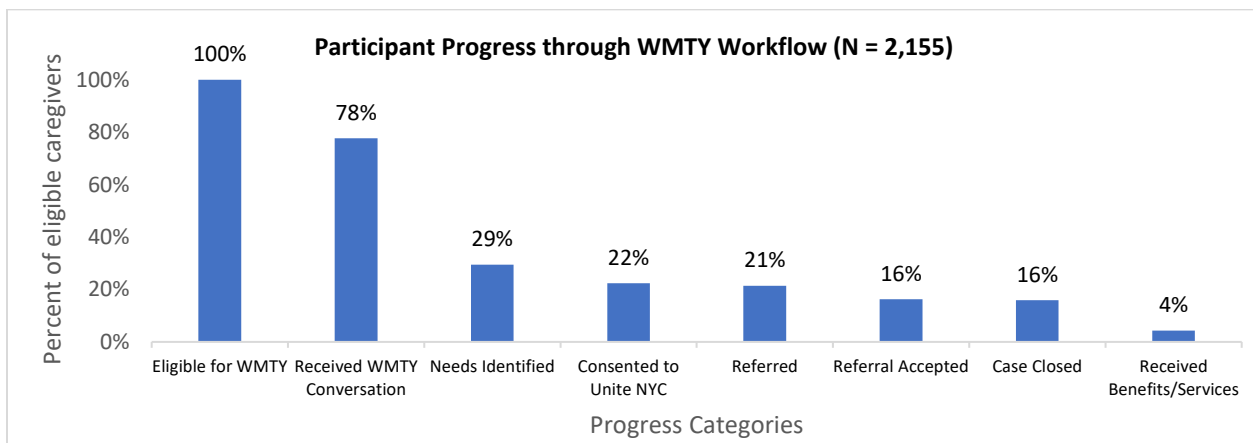


Figure 2. Percent of eligible caregivers who progressed through WMTY workflow

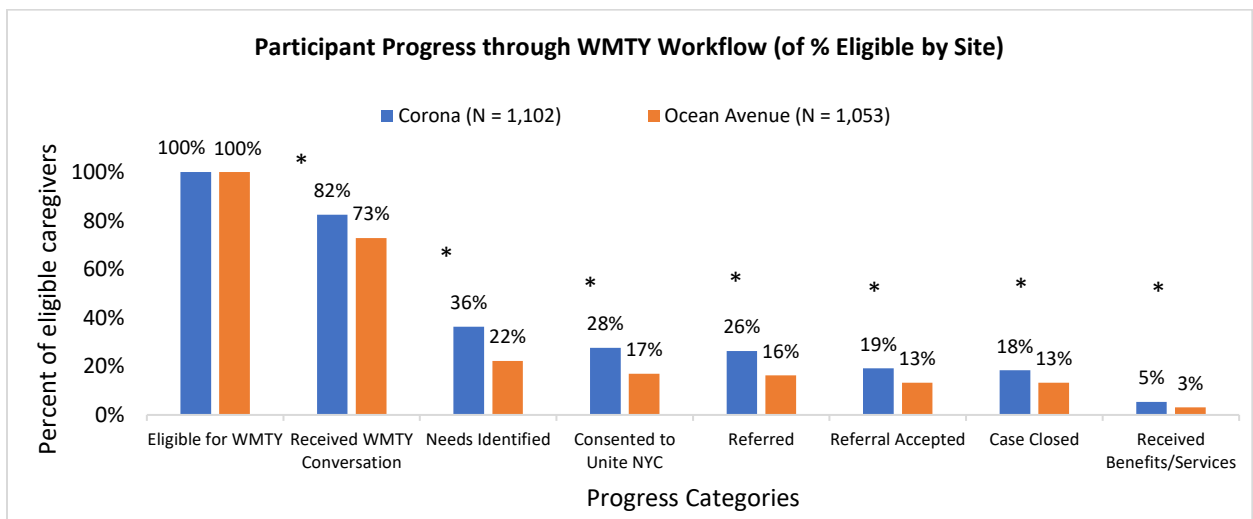


Figure 3. Caregiver progress through WMTY workflow by site. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Use of WMTY conversation guide questions

Among the caregivers with completed WMTY assessment forms in Unite Us (N = 496), 11% had a WMTY conversation using the first question set, 72% with the second question set, and 85% with the third question set (Figure 4). These categories are not mutually exclusive. The overlap suggests that multiple questions may have been used with caregivers during their WMTY conversations. The most open-ended questions, 2 and 3, were most frequently used.

Eligible caregivers at Ocean Avenue WIC were significantly more likely to have Question Set 1 used during their WMTY conversation. Eligible caregivers at Corona WIC were significantly more likely to have Question Set 2 and/or 3 used during their WMTY conversation (Figure 5Figure 5).

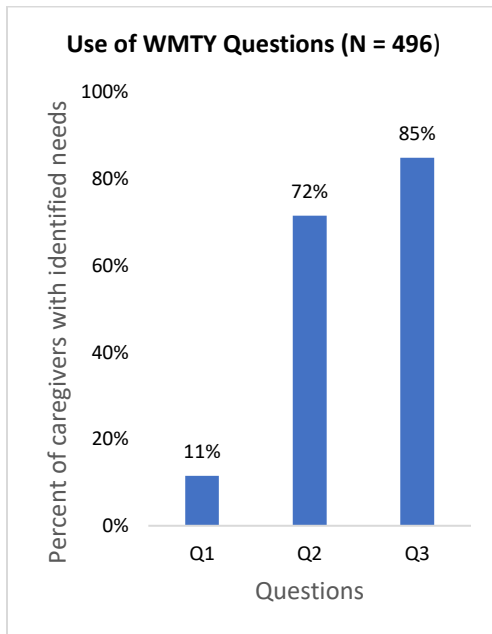


Figure 4. Use of What Matters to You (WMTY) questions among caregivers with identified needs

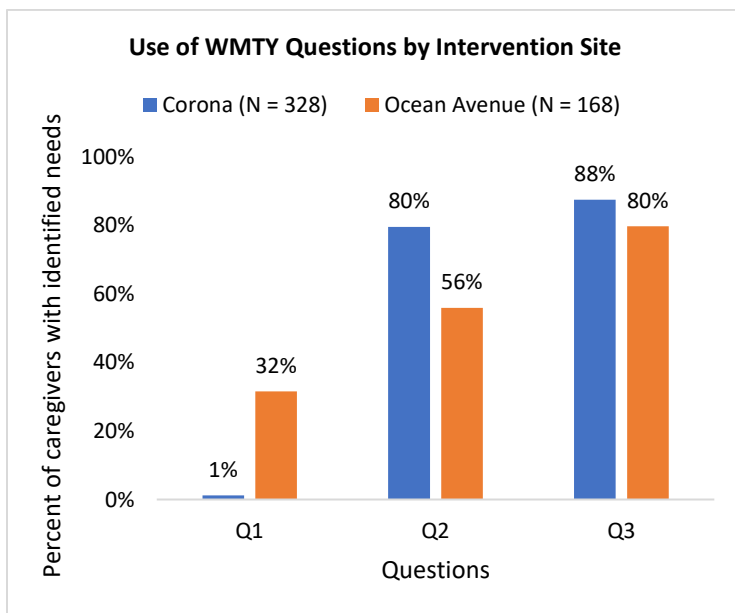


Figure 5. Use of WMTY questions among caregivers with identified needs by the site. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Inventory of social needs

Among the caregivers with completed WMTY assessment forms in Unite Us (N = 496), 62% requested food assistance, 16% housing support, 15% childcare services, 10% legal services, 9% employment and training opportunities, 4% health insurance services, and 1% each for transportation, child education, disability services, and mental health services (Figure 6). No caregivers identified the need for drug and substance use, domestic/interpersonal violence, or maternal home visiting services.

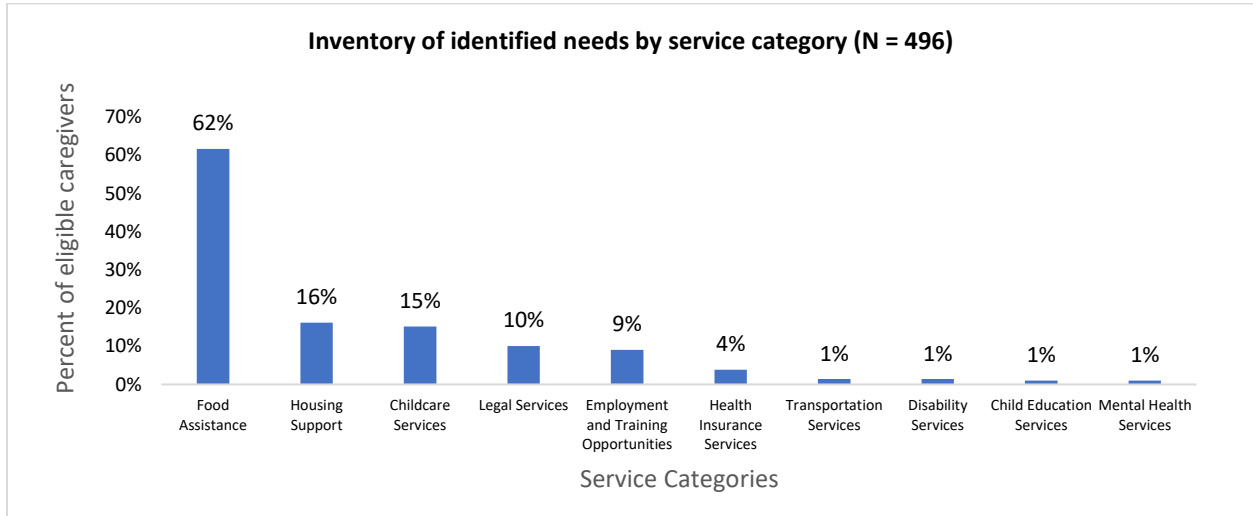


Figure 6. Distribution of caregivers by category of identified need

Eligible caregivers at Corona WIC were significantly more likely to identify childcare services as a need and those from Ocean Avenue WIC were significantly more likely to identify housing support and disability services support as needs. There were no statistically significant differences between intervention sites in identifying the need for food assistance, legal support, employment opportunities, health insurance, transportation services, child education, or mental health services (Figure 7).

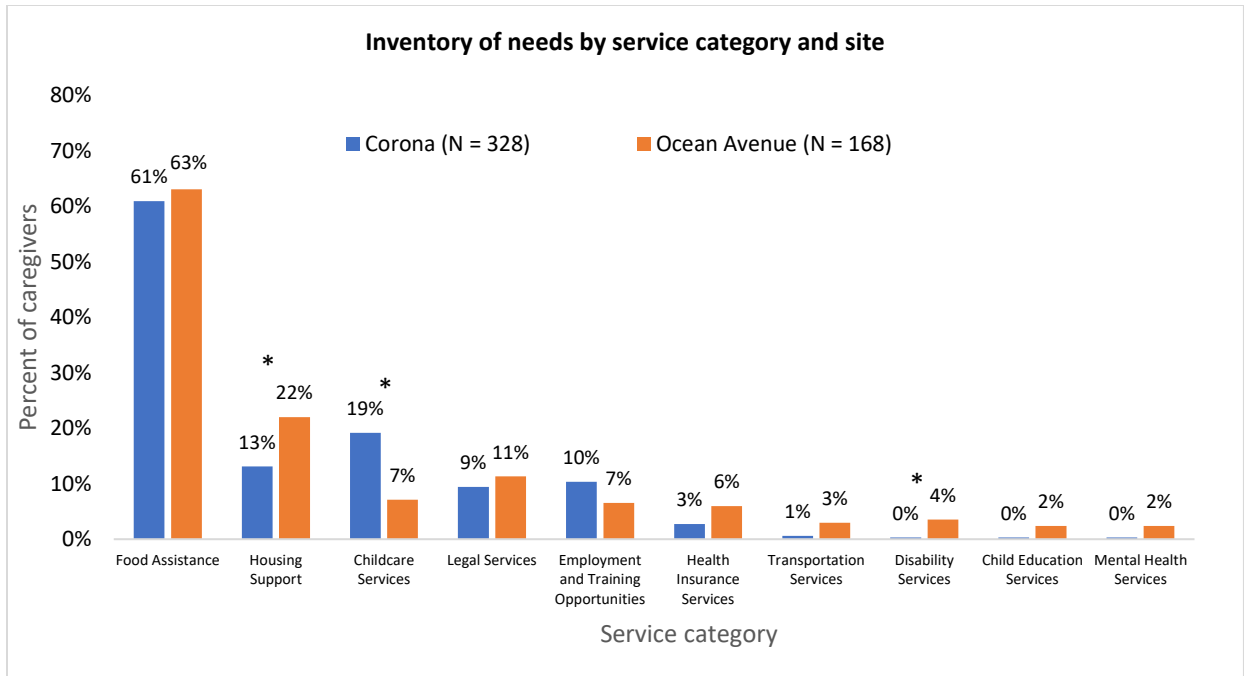


Figure 7. Distribution of caregivers by site and category of identified need. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Volume and outcomes of referrals made through Unite Us

A total of 720 referrals were made for 461 caregivers as part of WMTY, for an average of 1.6 referrals per caregiver. The average number of referrals per caregiver was equivalent across the two intervention sites. Of those 720 referrals made, 55% were accepted, 17% were unopened, 14% were closed before intake was completed, 8% were rejected, 4% were recalled, and 3% were still in review at the end of the implementation period.

Overall, referrals made from Ocean Avenue were significantly more likely than those made from Corona to be accepted by partners. Referrals from both sites were equally likely to end in enrollment or receipt of services (Figure 8).

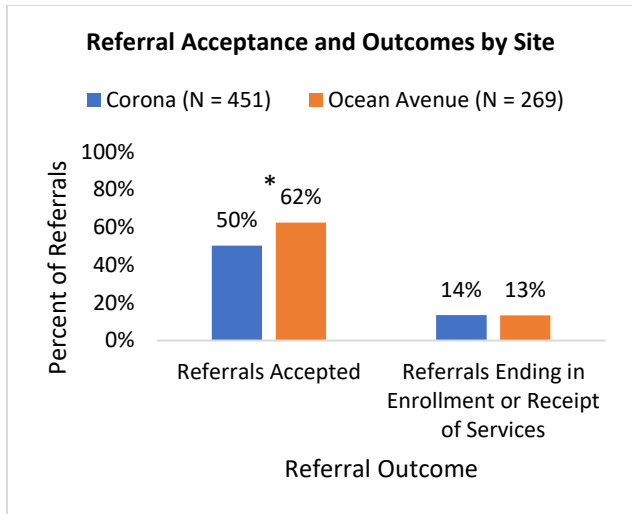


Figure 8. Referral acceptance and outcomes by intervention site. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Nearly all referrals (96%) were made to one of eight service categories within Unite Us: SNAP (52%), Job Search/Placement (7%), Public Benefits Advocacy (7%), Housing Applications / Recertification (6%), Child Care (6%), Rent/Mortgage Payment Assistance (5%), Benefits Eligibility Screening (4%), and Health Insurance/Benefits (2%) (Table 2).

Table 2. The volume of referrals made from intervention sites via Unite Us by service category

Category Umbrella	Service Category	Number of referrals made at Corona	Number of referrals made at Ocean Avenue	Total Referrals (#)	Total Referrals (%)
Food Assistance	SNAP	246	128	374	52%
Not Applicable	Referral Rejected	22	35	57	8%
Employment	Job Search / Placement	45	3	48	7%
Legal	Public Benefits Advocacy	28	19	47	7%
Housing & Shelter	Housing Applications	21	24	45	6%
Family Support	Child Care	33	8	41	6%
Housing & Shelter	Rent Payment Assistance	15	22	37	5%
Benefits Navigation	Eligibility Screening	24	5	29	4%
Benefits Navigation	Health Insurance/Benefits	4	7	11	2%
Education	Language Classes	0	6	6	1%
Food Assistance	Emergency Food	3	2	5	1%
Family Support	Parenting Education	3	1	4	1%
Education	Early Childhood Education	3	0	3	0%
Benefits Navigation	Immigration Services	2	0	2	0%

Housing & Shelter	Housing Mediation	2	0	2	0%
Behavioral Health	Individual Counseling	0	2	2	0%
Behavioral Health	Mental Health Evaluation	0	2	2	0%
Behavioral Health	Supportive Therapies	0	2	2	0%
Utilities	Bill Payment Assistance	0	2	2	0%
Employment	Career Skills Development	0	1	1	0%

Referrals from Corona were significantly more likely to be made for Job Search/Placement, Child Care, and Benefits Eligibility Screening services than those from Ocean Avenue. Referrals from Ocean Avenue were significantly more likely to be made for Housing than those from Corona (Figure 9).

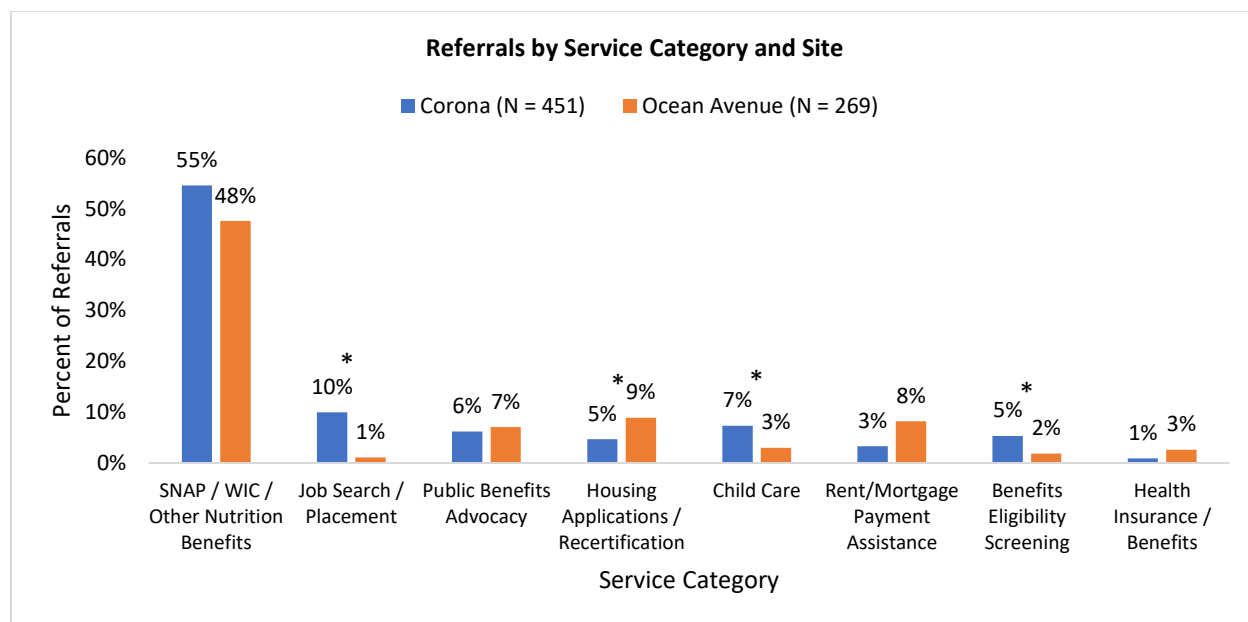


Figure 9. Distribution of referrals by service category and site. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Overall, Ocean Avenue partners were significantly more likely to accept referrals than Corona partners. However, Corona partners were significantly more likely to accept referrals for childcare and housing than Ocean Avenue partners. Ocean Avenue partners were significantly more likely to accept referrals for job search/placement, public benefits advocacy, and SNAP (Figure 10. See Table 2 for denominators and [Appendix D](#) for site breakouts).

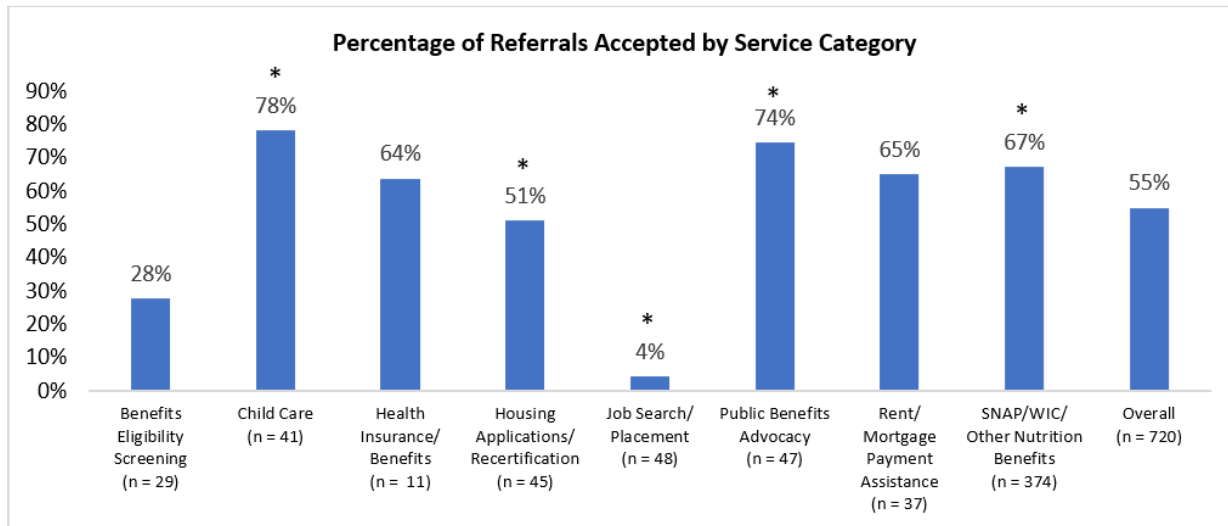


Figure 10. Percentage of referrals accepted by service category. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Overall, Corona and Ocean Avenue partners were equally likely to have a referral end in program enrollment or receipt of services, but there were some differences when drilling down by service category. Ocean Avenue partners were significantly more likely than Corona partners to end a referral for benefits eligibility and public benefits advocacy services in program enrollment or receipt of services. Corona partners were significantly more likely to end a housing application / recertification referral in receipt of services (Figure 11, see Table 2 for denominators and [Appendix E](#) for site breakouts).

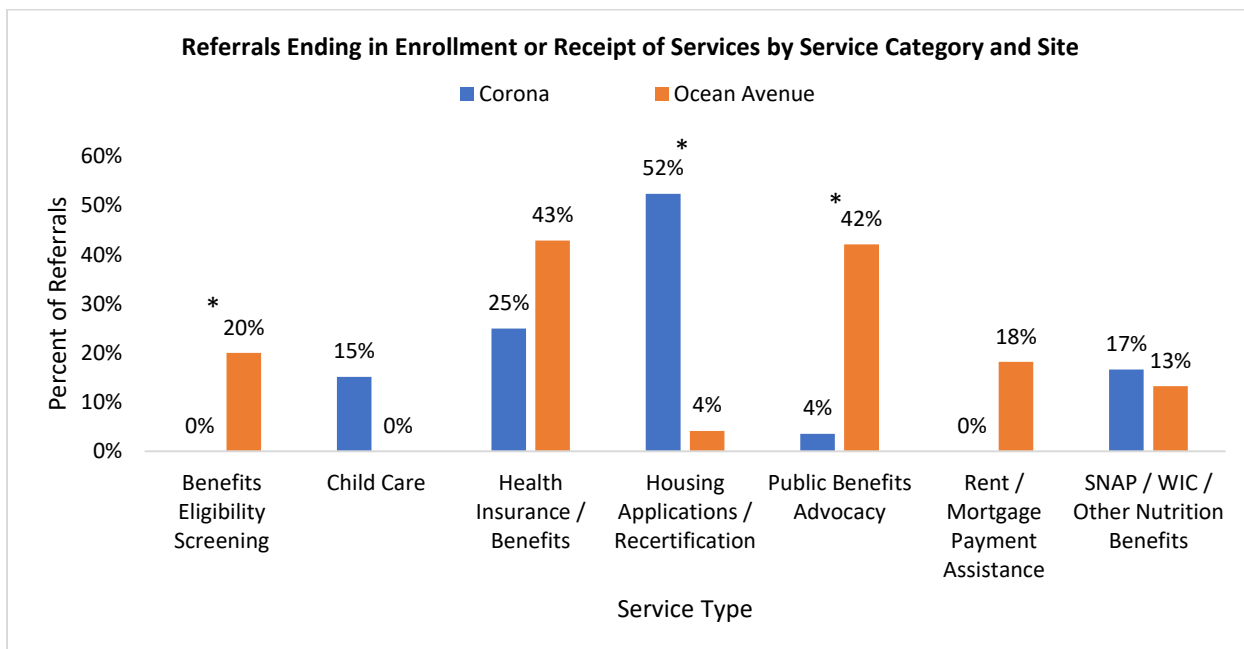


Figure 9. Percentage of referrals resulting in receipt of services by service category. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

In Unite Us terminology, when a referral is accepted, it becomes a “case,” and only closed cases have documented outcomes within the closed-loop referral system. Among the closed cases in the network,

25% ended in program enrollment or receipt of services. The primary reason caregivers with accepted referrals did not receive services was because partner organizations were unable to successfully contact caregivers after three outreach attempts (21% of closed cases) (Figure 12).

Other common reasons that caregivers with accepted referrals did not receive services were largely participant driven. In such cases, information was shared with caregivers, but they opted not to enroll (11% of closed cases), caregivers declined services because of inconvenient hours or location or some other reason (9%), or the caregiver did not complete the application or intake process (4%) (Figure 12).

In some cases, access to services may have been delayed. Some caregivers needed services that were not provided by the network and had to be referred outside the network (5% of closed cases) or programs were at-capacity and referred caregivers were added to a waiting list (4%) (Figure 12).

Only 5% of closed cases ended in non-receipt of services because caregivers were ineligible for services. Typically, referrals of ineligible families are rejected before they become a case (Figure 12).

One in eight (13%) closed cases had a documented outcome of “other.” According to case notes, scenarios captured under this outcome included being unable to communicate with the family because staff did not speak the caregiver’s language or information was provided to one family member to help support another.

Other outcomes that collectively account for 2.6% of closed cases include referrals that were duplicate service requests (5 referrals), referrals for services not provided by the receiving organization (n = 2), referrals that were closed because the family relocated out of the service area (n = 2), and referrals for which the application was rejected (n = 1).

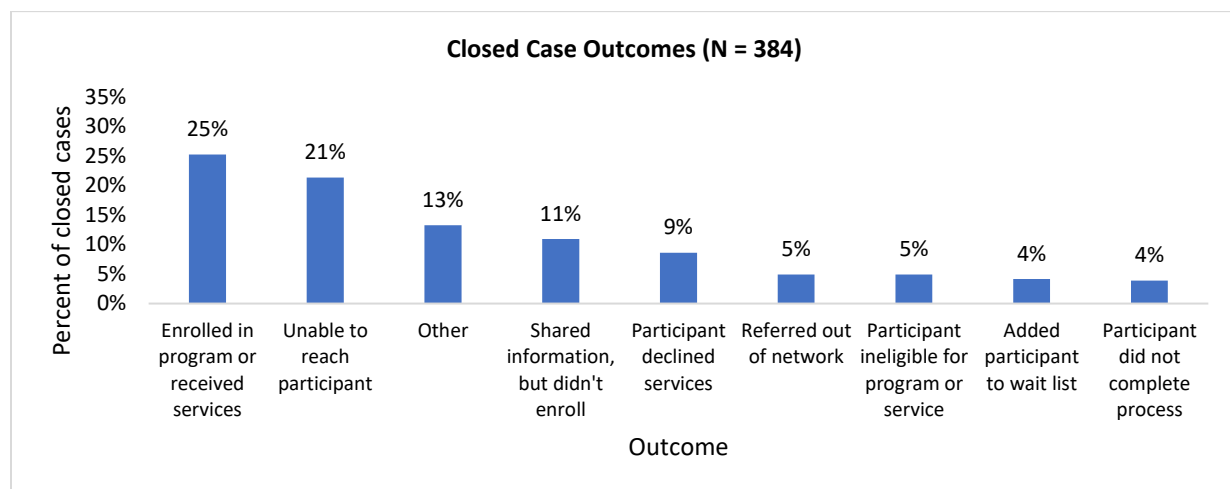


Figure 12. Closed case outcomes

Cases closed by Corona partners were significantly more likely to have a documented outcome of other or caregiver added to wait list than those closed by Ocean Avenue partners. Cases closed by Ocean Avenue partners were significantly more likely to have a documented outcome of being unable to reach caregiver or caregiver received information but did not enroll than those closed by Corona partners. For all other documented outcomes, there were no statistically significant differences between cases closed at the intervention sites (Figure 13).

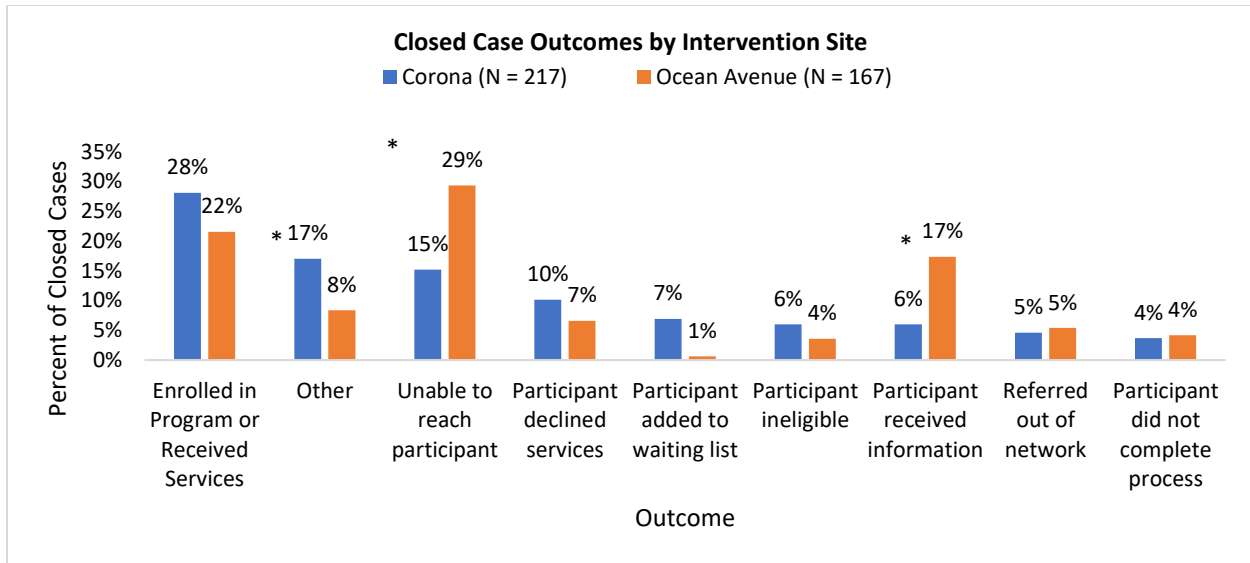


Figure 13. Closed case outcomes by intervention site. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Quality of referrals made through Unite Us

Of those 720 referrals made on behalf of caregivers, 8% were rejected. The primary reasons for referral rejection were ineligibility (30%), inability to contact (28%), requested service was not provided by the organization (19%), the referral was a duplicate (5%), no organizational capacity to address referral (5%), or some other, unspecified reason (12%) (Figure 14).

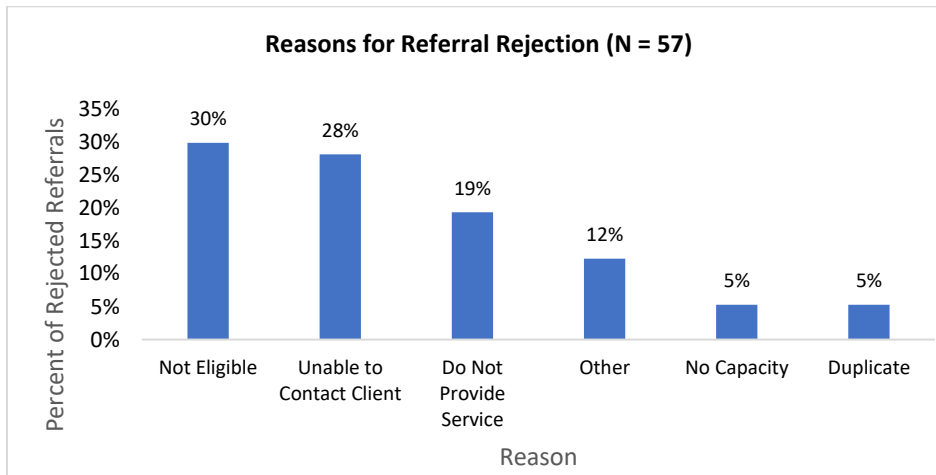


Figure 14. Reasons for referral rejection

Overall, referrals to Ocean Avenue partners were significantly more likely to be rejected than referrals to Corona partners (13% vs 5% of referrals). Referrals to Corona partners were significantly more likely to be rejected due to ineligibility. Referrals to Ocean Avenue partners were significantly more likely to be rejected because the receiving organization did not provide the requested service (Figure 15).

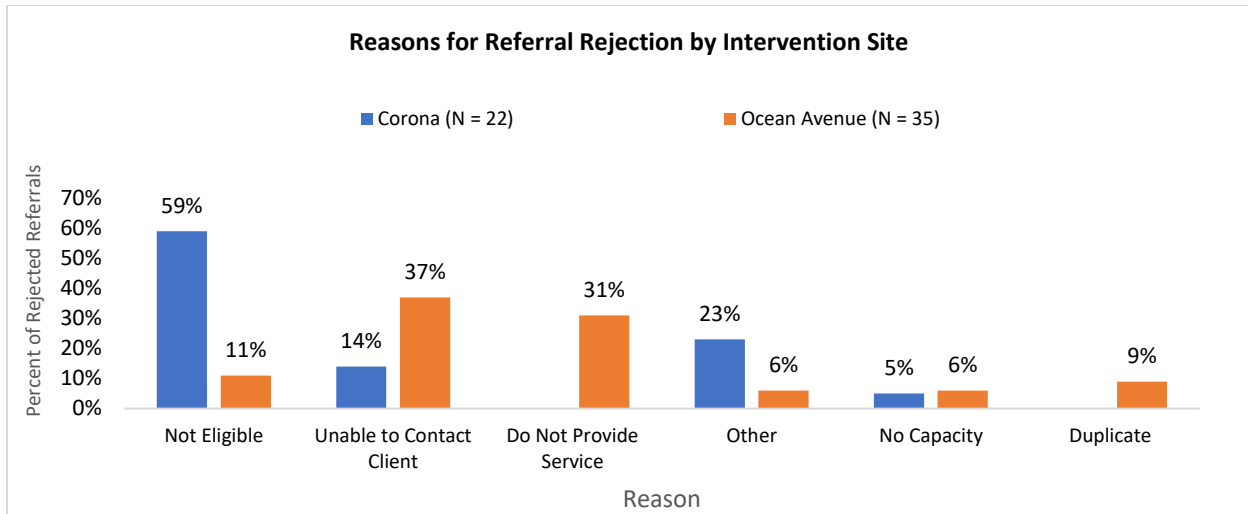


Figure 15. Reasons for referral rejection by site. Asterisks mark where there is a statistically significant difference between Corona and Ocean Avenue sites.

Referrals to WIC from partners

A total of 10 referrals were received at the WMTY intervention sites from other organizations; only two of the referrals were from a WMTY partner. This suggests that although the ability to refer to WIC was marketed as a network incentive, it was not utilized by partners.

Caregiver Experience and Perceived Value

Presentation of IDI themes

There were many common themes across the four IDI groups — (1) participants who were referred and enrolled in services, (2) participants who were referred but did not enroll, (3) participants who received information but not a referral, and (4) participants who received neither information nor a referral — with regard to likes, dislikes, barriers to participation, discussion of said barriers, and general discussion of needs. Therefore, the themes are largely presented together. When a theme is unique to one group it is highlighted. The experiences and perceived impact of the experience for each group are summarized under separate headings.

Caregivers' most valued parts of the WIC program

IDI participants cited milk, food support, breastfeeding support, help with child development, positive interactions with WIC staff, the ability to receive services in their preferred language, and receiving nutrition advice from a trusted source as the most valued parts of the WIC program.

"I have my first daughter and I don't really know how to do things or if it's right for her to eat more or less or what is actually good for her to eat. [...] if I have a question or I want to know something, I just, you know, always whenever I go or call up they, they have an answer for me or, or they have something that makes me feel comfortable [...]" (Referred Enrolled, IDI 20, Lines 78-82).

IDI participants who received information, but no referral also mentioned the convenience of the electronic WIC benefits card, the farmers market checks, and help with navigating community resources as valued part of the WIC program.

“What I like is their resources. Um they actually helped me find uh childcare for my daughter. So if I have a question regarding my daughter, they're always there to help me out [...]”
(No Referral Received Information, IDI DS, Lines 54-56)

Caregivers’ least favorite parts of the WIC program

When asked if there was anything they did not like about the WIC program, IDI participants mentioned long wait times when appointments were in-person, but also acknowledged seeing improvements over time. They also mentioned disliking that they saw a different QN at every visit and wished for a more stable relationship with one staff member.

“I have trouble with the fact that they give me one Nutritionist and then last time I remember, the very last time I went, I saw another person and I wish I was just one stable person.”
(Referred Enrolled, IDI 20, Lines 117-119).

IDI participants also mentioned feeling the WIC benefits were too rigid in scope. They disliked the reduction of milk supplied over time, that only a limited variety and quantity of food items were covered, and that the food package did not always meet the needs and preferences of their children.

“Now my baby is 10 months old, ehm, and the truth is, yes, they are reducing the milk. [...] I think that would be more the answer to what I don't like [...]” (Referred Not Enrolled, IDI 95, Lines 90-93).

While IDI participants generally praised their interactions with WIC staff, some had complaints about customer service.

“I've had [WIC] within different states because I've lived in different states and it seems like New York City, which is just seems like is just they're not really, they don't seem to enjoy the do their jobs.” (No Referral Received Information, IDI 12, Lines 76-78)

“Because a lot of times if I can't get to WIC, I just don't get WIC, and that's the way it's always been made to me over the phone. And they're never the most pleasant people to speak to.”
(No Referral Received Information, IDI 12, Lines 216-217)

Generally, IDI participants were effusive with praise for the program, and it was more challenging to get participants to be forthcoming with critiques, although some were eventually raised. One reason that may have been the case is that participants feel they should be thankful for the support from WIC and that providing critique may be construed as being ungrateful. One IDI participant suggested they can tolerate any inconveniences, because it is a free program.

“I can't complain because, I mean, it's free help that I am receiving. So I think, you know, it's is good. I don't have any downsides to it.” (No Referral No Information, IDI MV, Lines 103-105)

Barriers to participation

IDI participants typically did not identify barriers to participation, particularly because they were having virtual appointments as a result of the pandemic. For the most part, caregivers preferred virtual appointments to in-person appointments and found them easier to attend.

“The truth is that everything has been now because of the pandemic, it has been over the phone, so it has not been difficult [...]” (Referred Not Enrolled, IDI 95, Lines 129-130)

To identify any barriers to participation, it required probing and often adding the condition of “before the pandemic” or “back when things were in-person.” After probing, some caregivers were able to

identify transportation, childcare, and the burden of bringing infants or young children to appointments, especially managing the children while on public transit, as challenges.

“Sometimes transportation, because the children, I have three, sometimes I can't get them on the bus, sometimes they don't let you, you have to take them off. Yes, to help us a little more with transportation.” (Referred Not Enrolled, IDI 111, Lines 58-60)

One caregiver also mentioned the systemic barriers they faced as a low-income, single parent, the additional challenge of managing supporting documentation, and the inconvenient hours of the WIC site as barriers to participation and continued enrollment.

“Well, I was homeless for a time in the temporary family shelter, and sometimes not having transportation could cause you to not stay enrolled in WIC sometimes. I think that would probably it's very hard for you not to be able to stay enrolled. Unless you've lost documents that you cannot replace because I've had times where I had copies of documents and they wouldn't take copies of my documents because they wanted real documents. Or sometimes if you don't have if you miss a document, you can only you have to go back in another month. They only give you a month worth of worth of benefits if you're missing particular things. And then you have to go back every month. Now, what if this is a document that you cannot afford to replace? Think like real life situations do happen, and WIC doesn't really seem to have a we'll, we'll work with you. [...] What another thing that the baby has to go with you all the time. Recertification, I feel like I understand if it's bad weather, I should not have to bring my baby outside. I had there are plenty of times where I had to bring a fresh out the vagina baby to the WIC office, in the snow, rain, sleet blizzard because they had to see the baby. [...] There are many times I went home and did not know how I was going to feed my baby, and because I was a survivor of sexual assault, I had a problem with breastfeeding my child. So I there were times where I was like, I don't know how this is going to work, where the hospital is sliding me extra milk underneath because, you know, they have to account for that. They're giving me extra milk to make sure that I have enough milk to get to my WIC appointment because I'm a single mom. I don't have a big support system. When she was young, it was me and my two children. So those are things like barriers were very low-income families, single mothers.” (No Referral Received Information, IDI 12, Lines 119-152)

One caregiver specifically recommended collocating WIC offices with hospitals for first visits and providing MetroCards to help reduce barriers to participation.

“Now I understand. I get it. I get it. You must see the baby. But there should be other ways that you should be able to, especially now, to be able to conduct these interviews. So that way, a mom, a mother should not have to leave her bed after giving birth to get WIC. She should leave the hospital with her WIC already set up. There should be a particular office that goes in when you are pregnant and signed you up before you leave the hospital with your baby.” (No Referral Received Information, IDI 12, Lines 139-144)

“Like especially in New York City, because that's where I live nine times out of 10, the hospital will give you a MetroCard. And I normally would hold that Metro card just for making sure I got back to my WIC appointments [...]” (No Referral Received Information, IDI 12, Lines 180-185)

Discussing barriers to participation with WIC staff

None of the IDI participants said they discussed these specific barriers to participation with WIC staff and many admitted they generally did not discuss their needs outside WIC with WIC staff.

When asked why, IDI participants mentioned that they did not know that WIC could help with their specific needs, that the WIC appointment was only for getting their benefits and nothing else, and that they were too busy to discuss anything extra at the appointment.

*“I don’t think WIC can help anything with my Housing application.”
(Referred Enrolled, IDI 27, Line 106)*

*“No. They just get you, fill up your stuff, and that’s it, ‘Bye.’ That’s it [...]”
(Referred Not Enrolled, IDI 111, Line 72).*

*“No, I don't have any time to talk with the lady about everything, about the mental health, on the communication. But because I'm a student, so sometimes I don't have any time[...]"
(No Referral No Information, IDI 101, Lines 250-253)*

Survey sample and disqualified responses

The post-intervention survey for caregivers was delivered to 15,745 WIC caregivers associated with the Corona, Ocean Avenue, and Ridgewood WIC sites and 3% opened the survey. Of those who opened the survey (N = 420), 15% were disqualified, leaving 358 qualified respondents. Respondents were disqualified if they said they were a participant at a WIC site other than Corona, Ocean Avenue, or Ridgewood and/or they responded “No” or “I don’t know” to a question about whether they were a parent or caregiver to an enrolled child.

To assess some level of representativeness, the relative proportion of respondents in the survey sample from each site was compared to the relative proportion of the cumulative participant population for the two intervention sites and comparison sites in March 2021. As can be seen in the table below, the proportion of participants from the same site in the population (Table 3).

Table 3. Site representation in survey sample compared to participant population

<i>WIC Site</i>	<i>Sample (#)</i>	<i>Sample (%)</i>	<i>Pop. (#)</i>	<i>Pop. (%)</i>	<i>Two-proportion z-test p-value</i>
<i>Corona</i>	167	47%	4,638	46%	0.80
<i>Ocean Avenue</i>	147	41%	3,939	39%	0.63
<i>Ridgewood</i>	44	12%	1,559	15%	0.58
<i>Total</i>	358	100%	10,136	100%	

Recollection of conversation with WIC staff about referrals or community services

Corona survey respondents were significantly more likely (69%) than Ocean Avenue respondents (55%) to recall a conversation with WIC staff about referral services and/or their needs outside WIC. Note, this conversation need not have been the WMTY conversation. Comparatively, about two-thirds (65%) of Ridgewood respondents recalled such a conversation (Figure 16). There was no statistically significant difference in the likelihood of recalling such a conversation between Ridgewood respondents and those at Corona or Ocean Avenue.

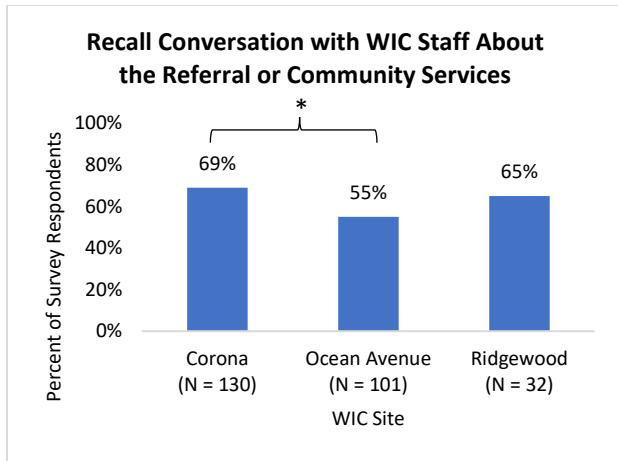


Figure 16. Recall conversation with WIC Staff about referral services. Asterisks mark where there is a statistically significant difference.

The few IDI participants who could recall a conversation with WIC staff about their needs outside WIC often could not remember concrete details of the conversation. Some could remember the services discussed, but only after probing with the names of specific categories of service. A few others, particularly in the group that received no referrals, were able to recall concrete details of the conversation but did not consider these needs “barriers.” Some caregivers, particularly those in the group who received information, but no referral, said such conversations were common.

“They always work it out. They always made sure that, you know, everybody had what they needed or if they need extra assistance, they know how to do certain things.” (No Referral Received Information, IDI 42, Lines 122-124)

General discussion of needs outside WIC with staff

About half of Corona and Ocean Avenue survey respondents who recalled a conversation about referrals or available services in the community indicated that they discussed their own needs during that conversation. Comparatively, 61% of such Ridgewood respondents (N = 21) discussed their needs, but there was no significant difference between the intervention and comparison sites (Figure 17).

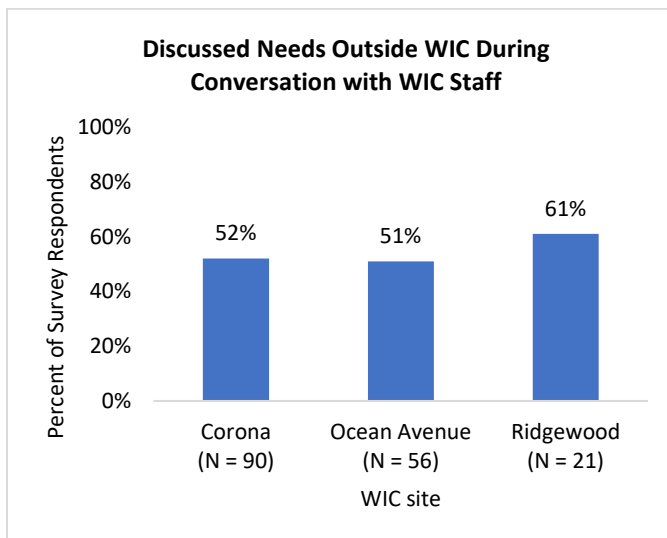


Figure 17. Caregivers who discussed needs outside WIC.

IDI participants' feelings about this conversation were mixed. Some felt relieved and supported, some were surprised to learn that WIC could help, others felt it inconsequential, and still others found it a little intimidating.

"It made me feel supported. [...] Well, it made me feel like you have a lot of help from WIC and any information they give you." (No Referral Received Information, IDI 112, Lines 56-57).

"No, it hasn't changed anything. I mean, I still find them very helpful. Everyone that there is very nice [...]" (Referred Not Enrolled, IDI 21, Lines 191-192).

"The benefits that we don't need is fine, but sometimes it does scare us sometimes when they talk about this, for example, of something legal, then, that's kind of scary." (No Referral Received Information, IDI 18, Lines 83-86).

Several caregivers who had not raised their barriers to participation or needs during a WIC appointment did bring them up with the interviewer. Many asked interviewers for connection to additional services or general questions about the WIC program.

*"Eh, yes, a question, and how long-how long can kids be in WIC?"
(Referred Enrolled, IDI 71, Line 165)*

"I don't know if you're the person to speak to, but do they help you get like vouchers and things of that nature for housing?" (Referred Enrolled, IDI 19, Lines 196-197)

"Why do we have to keep bringing you in the same documents if you have the same documents on file?" (No Referral Received Information, IDI 12, 131-132)

Perceived impact of discussing needs outside WIC with staff

Caregiver survey respondents who discussed their own needs outside WIC were asked to evaluate the perceived impact of that conversation with WIC staff. Specifically, they were asked to rate the extent to which the conversation helped them feel comfortable discussing their needs, helped address issues that made it difficult to participate in WIC, made WIC feel more valuable, made them more likely to use all their issued benefits, and made them more likely to recertify for WIC.

Sixty-one percent (61%) of Corona survey respondents agreed that the conversation with WIC staff made them feel comfortable discussing their needs outside WIC. A similar proportion (57%) of Ocean Avenue respondents also agreed. Comparatively, three-quarters (76%) of Ridgewood respondents agreed, but there was no statistically significant difference between these respondents and those from the intervention sites (Figure 18).

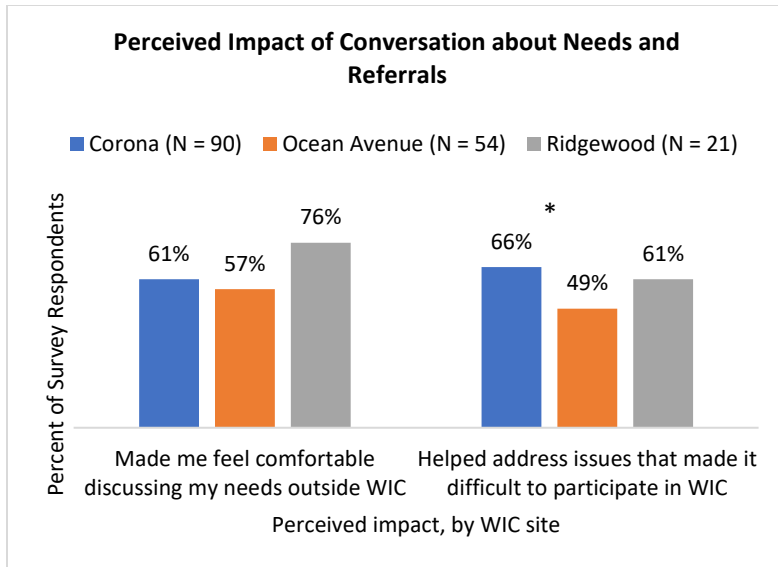


Figure 18. Perceived impact of conversation about needs. Asterisks mark where a statistically significant difference is found.

Two-thirds (66%) of Corona survey respondents agreed that the conversation with WIC staff helped address issues that made it difficult to participate in WIC. Significantly fewer, only about half (49%) of Ocean Avenue respondents agreed with this statement. Comparatively, 61% of Ridgewood respondents agreed, but there was no statistically significant difference between these respondents and those from the intervention sites (Figure 18).

Over two-thirds (69%) of Corona survey respondents agreed that WIC was more valuable to them because of their conversations with WIC staff about their needs. Significantly fewer, only about half (51%) of Ocean Avenue respondents agreed with this statement. Comparatively, 71% of Ridgewood agreed, but there was no statistically significant difference between these respondents and those from the intervention sites (Figure 19).

Seventy-one percent (71%) of Corona respondents agreed that they were more likely to use all their issued benefits because of their conversation with WIC staff about their needs. Significantly fewer, only about half (52%) of Ocean Avenue respondents agreed. Comparatively, 76% of Ridgewood respondents agreed (Figure 19). There was no statistically significant difference between intervention site and comparison site respondents on this measure.

Seventy-one percent (71%) of Corona respondents agreed that they were more likely to recertify for WIC because of their conversation with WIC staff about their needs. A similar proportion (64%) of Ocean Avenue respondents agreed. Comparatively, Ridgewood respondents were significantly more likely (95%) than respondents from either intervention site to agree they were more likely to recertify for WIC because of their conversation with staff about their needs (Figure 19).

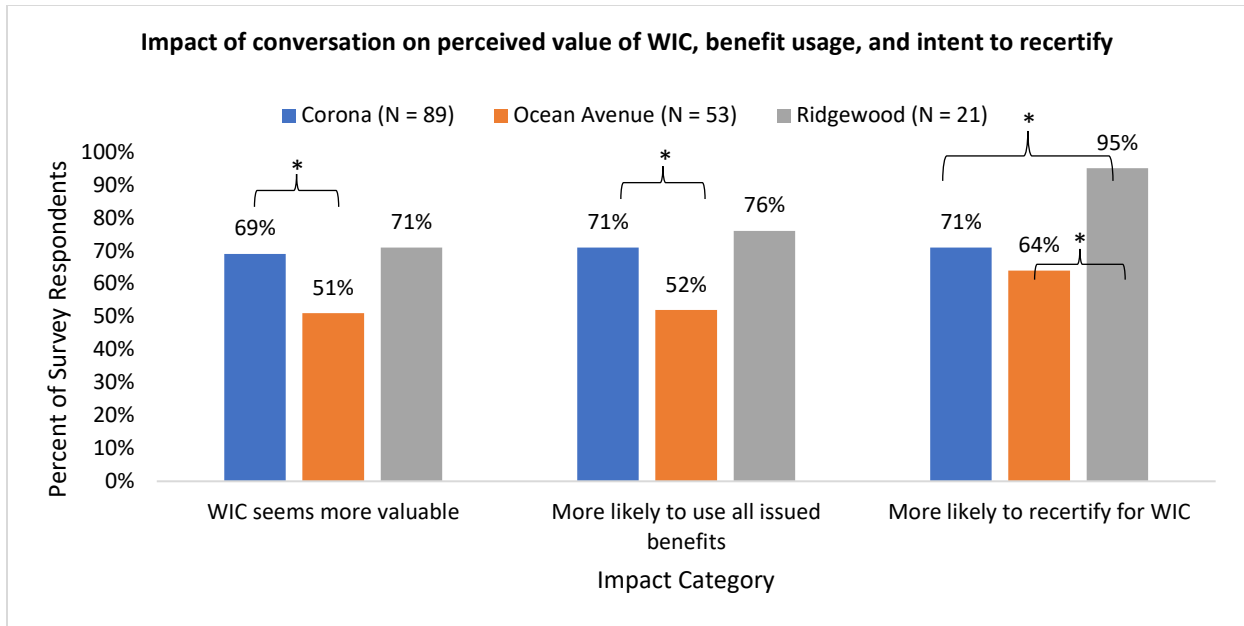


Figure 19. Impact of conversation on perceived value, benefit usage, and intent to recertify. Asterisks mark where there is a statistically significant difference

Caregiver recollection of progress through referral workflow

Corona survey respondents were significantly more likely (42%) than those at Ocean Avenue (25%) to indicate that they were offered a referral. There was no statistically significant difference between intervention and comparison site respondents' ability to recall the offer of referral (Figure 20).

Ocean Avenue respondents were significantly more likely (66%) than Corona respondents (35%) to consent to the referral. There was no significant difference between respondents at the comparison site, Ridgewood, and those at the intervention sites (Figure 20).

Of those survey respondents who indicated they consented to referral, 75% of Corona respondents, 60% of Ocean Avenue respondents, and 60% of Ridgewood respondents indicated that the organization they were referred to followed up with them. There was no statistically significant difference between the intervention and comparison site respondents who said they received follow-up (Figure 20).

Of those survey respondents who received follow-up from the organization that received their referral, 62% of Corona respondents (N = 24), 50% of Ocean Avenue respondents (N = 14), and 80% of Ridgewood respondents (N = 5) indicated that they were enrolled in a program or received services. There was no statistically significant difference between the intervention and comparison site respondents on this measure (Figure 20).

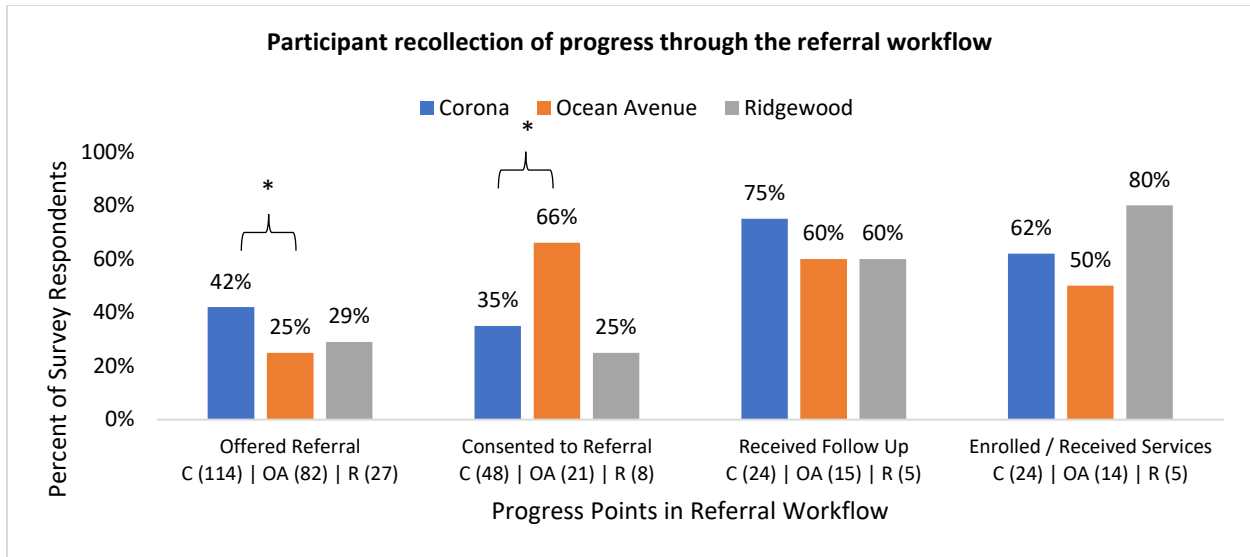


Figure 20. Caregiver recollection of progress through the referral workflow. Asterisks mark where there is a statistically significant difference. On x-axis label C = Corona, OA = Ocean Avenue, and R = Ridgewood. Denominators are in parentheses.

The purpose of these questions was to assess the extent to which caregivers recall progress through the referral workflow and see if that recall may be associated with differences in perceived impact. Additionally, these questions provide some insight into perceived progress through the referral workflow compared to the documentation in Unite Us. The survey data suggest Corona respondents were more likely to indicate participation in each phase of the referral workflow, which mirrors the data from Unite Us, which showed a significantly greater proportion of Corona participants participating in every phase of the WMTY workflow.

Experience of caregivers with identified needs who did not receive referrals

The experiences of caregivers who received no referral or information about community resources were varied. Some preferred to remain in WIC and not engage in outside programs they were less familiar with.

“No, I'd rather WIC, because -- I mean, you already know more or less eh, how-how they work so you prefer that than the unknown.” (No Referral No Information, IDI 18, Lines 137-138)

Others wanted to learn more about the referral process but were busy and unable to spend the time necessary to provide the information required to complete the profile, consent, and referral in Unite Us.

“I think if I have like a time to participate this one and if you if I need to know more about that. The people can help me in the WIC.” (No Referral No Information, IDI 101, Lines 290-291)

Some were still unaware of the opportunity to be referred to other services.

“I actually didn't know that you could have done a referral. I didn't know and it wasn't said to me, so I wasn't aware of that.” (No Referral No Information, IDI MV, Lines 244-245)

When asked how having the option to be referred to services outside WIC makes them feel about what WIC can do, one caregiver said they now see the WIC program as a service hub, which can address the needs of the whole family and not just the children enrolled in the program.

“So it makes you feel that it's not just about the children, that it can help with other things. (No Referral No Information, IDI 101, Lines 373-374)

Overall, caregivers who received no referral but did receive information about available services in the community recalled a positive experience with WIC staff. IDI participants said WIC staff were “helpful” and took extra steps to guide them through the process of getting connected to resources.

“So it became really helpful because they, you know, they explained everything they like, it's not like they just say, here, here's the paper and you figure it out, they help to show you how to do it.” (No Referral Received Information, IDI 42, Lines 131-134)

“They explain everything. If you need anything, if you need any help, they will help you outside of WIC. And that's also so informative, that's also very powerful when you don't have nobody to provide you support and guide and the WIC is there for you and I appreciate that.” (No Referral Received Information, IDI 91, Lines 180-183)

However, the process of following up on provided information was not seamless for everyone. One caregiver shared that even though they successfully enrolled their child into day care, the process was extremely lengthy. Another caregiver shared they could not follow through with the information they received on employment services due to the difficult situation they found themselves in during COVID.

“I brought it up to them before, but because of my situation right now, I'm not quite able to, you know, really follow-through it to services with finding work and stuff like that.” (No Referral Received Information, IDI 42, Lines 191-193).

Experience of caregivers with identified needs who received referrals

Knowing that WIC can provide referrals to other services often positively impacted caregivers' views on what WIC can do, despite many of them not remembering the referral process. One caregiver felt that they did not have to worry about anything, knowing that WIC can connect them to other services. Contrastingly, another caregiver felt unsure about being referred to services, because they felt as though WIC staff did not know enough about the organization they were being referred to.

“I kind of felt, kind of felt, unsure, humm for referring me, because she... I love the program for legal help and she didn't know much about it. And so it just made me unsure. [...] Kind of, yea, just kind of reluctant to to go through with it because she didn't know herself, what it actually was or how they would be helping me.” (Referred Enrolled, IDI 19, Lines 75-82).

Overall, caregivers preferred the aspect of the referral process where the organizations receiving referrals reached out to them, as opposed to having to reach out themselves. Caregivers have busy schedules, and it can be hard to remember to reach out to the organizations themselves. Similarly, a caregiver praised the referral process for reducing the burden.

“Well, it feels good because they practically help us with the paperwork and everything.” (Referred Not Enrolled, IDI 36, Lines 88-89).

One liked being able to make their own connection to a service, but appreciated WIC giving them the information to do so.

“Uh, yes, also well, because I also applied for food stamps by myself over the phone and sent all –the information only by mail. And so did I-yes I felt good, because I still didn't have to go out and just down on the phone, and thanks to the information they gave me there, in the WIC.” (Referred Enrolled, IDI 71, Lines 95-98)

Despite still having unmet needs after WIC's referral, one caregiver stated that they would not bring up their additional needs to WIC again.

*"Because I feel like I already had an experience with them, and so I feel like if I bring it up again, it'll be redundant and I just have to go through the same thing over and over again."
(Referred Enrolled, IDI 19, Lines 166-170).*

When caregivers were asked about their experience with the enrollment process, or why they did not enroll in services, some replied that they were ineligible. One caregiver spoke about ongoing needs that were not able to be addressed by the WIC referral since they were ultimately ineligible for services. Additionally, another caregiver mentioned that they did not actively pursue referrals since they were focused on securing WIC benefits first and foremost.

"I just didn't go forward with it just on my own and I would have talked to them about it eventually if I had more questions about it. But it was just something I just didn't think of really at the time. And I was, my main focus was just making sure I did my appointment, gave them information they need needed for [Caregiver's child] and that was really it." (Referred Not Enrolled, IDI CNH, Lines 126-130).

Perceived impact of option to be referred

Among IDI participants who received no referral or information about community resources, having the option to be referred to additional community services was seen to be a positive component of the WIC program and they liked that they could receive help at WIC offices. However, it is unclear whether this specifically influenced intent to remain in the WIC program. In some cases, caregivers specifically said access to additional resources did not affect their plans to stay in WIC.

"Does give me more like, I feel I'm comfortable to just stay with the WIC, and all the people work there very nice, and with the good communication, if you have any, like, issues, just I need to tell him what's happened. And if people like, help me about that." (No Referral No Information, IDI 101, Lines 407-410)

"Yeah, no no no it didn't change it. It was just more of like a more of an extra help for me. Yeah. So it didn't affect anything." (No Referral No Information, IDI MV, Lines 180-181)

IDI participants who received information, but no referral, expressed their intent to remain in the program was due to their overall satisfaction with the WIC program and the concrete help the benefits and staff provide. Receiving information about community resources did not seem to specifically impact intent to remain in the program.

"Um, the outcomes are all I'd say that people who doesn't have no knowledge of or they're new to the country or they're newly you know, they're newly introduced by WIC, I would highly recommend them to stay with the WIC and ask them any anything, any help you want. And they are there for you. And they provide a lot of guidance, a lot of information, and they help you in every kind of issue." (No Referral Received Information, IDI 91, Lines 317-321)

Perceived impact of referrals

Survey respondents who were offered a referral were asked to evaluate the perceived impact of referrals. Specifically, they were asked to rate the extent to which referrals connected them to needed services, helped address issues that made it difficult to participate in WIC, made WIC feel more valuable, made them more likely to use all their issued benefits, and made them more likely to recertify for WIC.

The number of survey respondents from Ridgewood to each of these questions was two (2); thus, the data were not analyzed and are not presented here.

Corona respondents were significantly more likely to indicate that the referral process helped address issues that made it difficult to participate in WIC and made them more likely to recertify for WIC. There was no statistically significant difference between respondents at the intervention sites with regards to perceived impact of the referral process on connection to needed services, perceived value of WIC, and likelihood of using all issued benefits (Figure 21).

Overall, the survey data suggest that Corona respondents were more likely to have a positive perception of the impact of referrals than Ocean Avenue respondents.

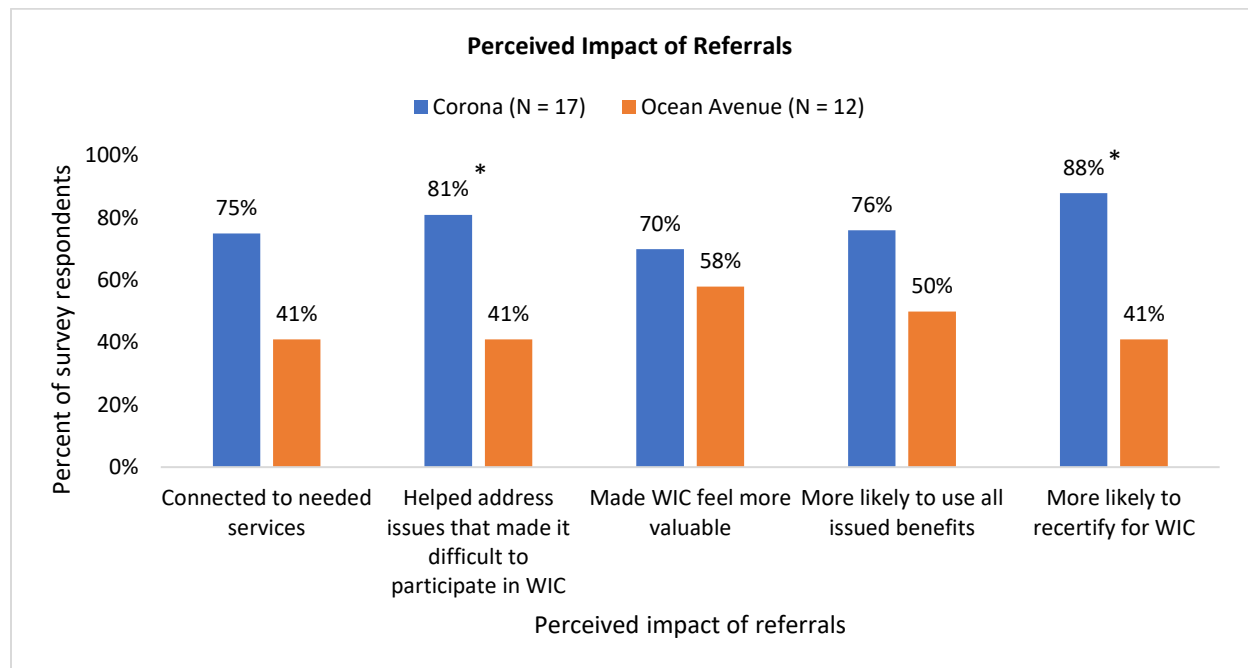


Figure 21. Perceived impact of referrals among caregiver survey respondents by site. Asterisks mark where there is a statistically significant difference.

During the IDIs, however, caregivers did not relate access to additional referrals to continuing their enrollment in WIC. One participant felt like it did not affect their enrollment in WIC since they had not yet received benefits from the organization they were referred to. Others planned to stay in WIC for as long as they were eligible, and while the access to additional services is appreciated, it did not seem to affect their retention in the program.

“I’m going to stay in the program until I’m five years old, I think, so I feel like it doesn’t affect anything.” (Referred Not Enrolled, IDI 95, Lines 234-235).

Caregiver survey data from the comparison site also indicates that even without a specific intervention to discuss needs and connect to services through closed-loop referral, there is a high likelihood of intent to recertify in the program. Regardless of whether they recalled a conversation about needs or received referrals to community services, 88% of Ridgewood participants said they intended to recertify for WIC. There was no significant difference in intent to recertify between Corona and Ridgewood, but Corona

and Ridgewood respondents, in general, were significantly more likely to intend to recertify for WIC than Ocean Avenue survey respondents (Figure 22).

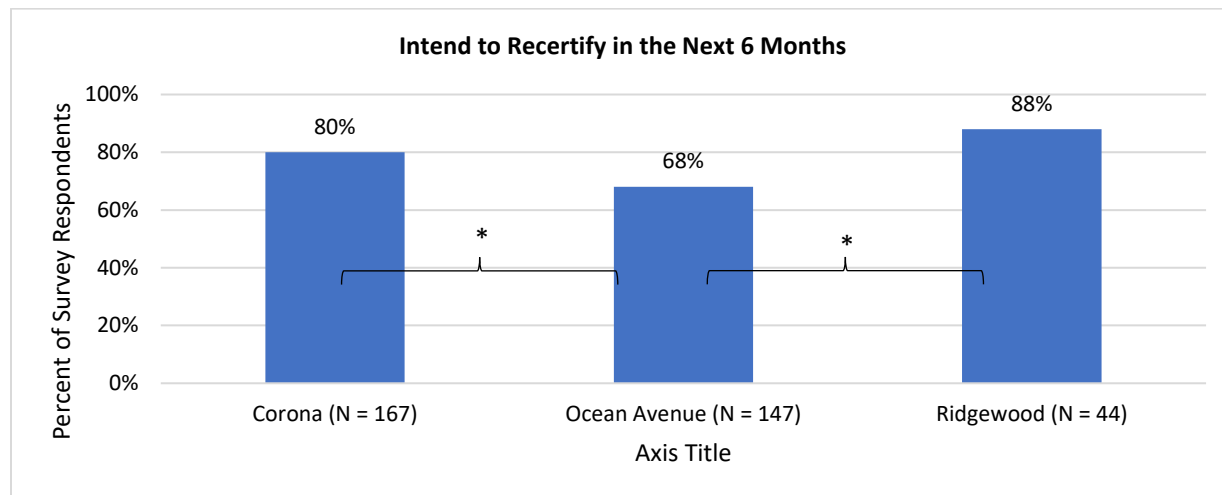


Figure 22. Caregiver survey respondent intent to recertify for WIC. Asterisks mark where there is a statistically significant difference.

WIC Staff Experience and Perceived Value

Survey sample and response rate

The post-intervention survey of WIC staff was delivered to 43 WIC Staff, and 36 responded (84% response rate). The response rate was 106% for Corona (N = 15), 79% for Ocean Avenue (N = 19), and 56% for Ridgewood (N = 9). It appears that one Corona respondent who had a job title other than QN, CSA, or Center Manager may have completed the survey twice.

There were no statistically significant differences between survey sample and population representation stratified by WIC site and role (Tables 4 and 5).

WIC Center	Sample (#)	Sample (%)	Pop. (#)	Pop. (%)	Two-proportion z-test p-value
Corona	16	44%	15	35%	0.59
Ocean Avenue	15	42%	19	44%	0.88
Ridgewood	5	14%	9	21%	0.74
Total	36	100%	43	100%	

Table 4. WIC staff representation in the survey sample compared to the population by site

Role	Sample (#)	Sample (%)	Pop. (#)	Pop. (%)	Two-proportion z-test p-value
CSA	10	28%	13	30%	0.90
QN	16	44%	16	37%	0.68
Center Manager	2	6%	3	7%	0.95
Other	8	22%	11	26%	0.87
Total	36	100%	43	100%	

Table 5. WIC staff representation in survey sample compared to the population by role

Presentation of themes from focus groups with WIC staff

The themes that emerged from the staff focus groups cut across site and job roles and are presented collectively. When themes are unique to a site or job function, it is specifically called out.

Using the WMTY conversation guide (Corona and Ocean Avenue ONLY)

Nearly three-quarters (74%) of staff survey respondents from Corona and Ocean Avenue (N = 27) indicated they used the WMTY questions in some form. When used, they were predominantly modified to fit the situation. Over half (52%) of respondents from the intervention sites said they sometimes used the questions as written and sometimes modified / rephrased, 15% said they only used the questions in a modified/rephrased format, and 7% said they only used the questions as written (Figure 23). There was no statistically significant difference in WMTY question use between intervention sites.

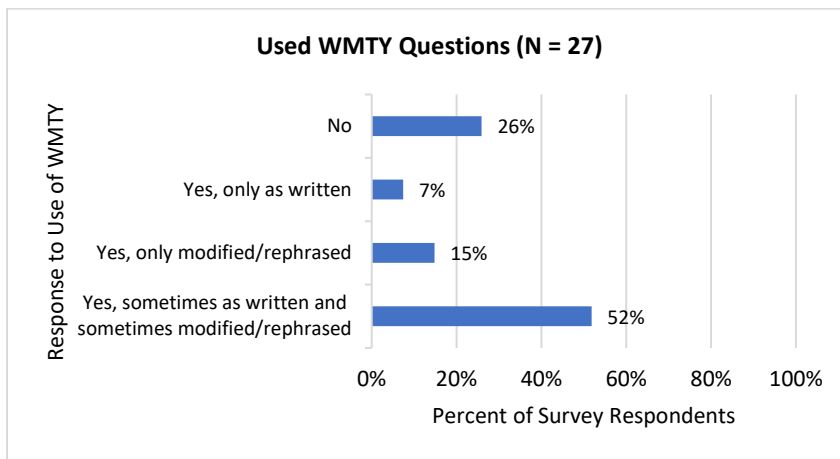


Figure 23. WIC staff use of WMTY questions

WIC staff emphasized the importance of adapting the WMTY questions to the participant’s context as the primary reason questions were often modified.

"Yes, I agree with [WIC QN], that depending on the client, you have to rephrase the question differently for each client. Some clients like to converse a lot. So you can start with like, 'oh, how are you' and going from there. Some clients, they just like to tell you their life story at once. So it's like you don't even need to ask a question. So it depends on the client. Or some clients are very shy and they don't want to talk about anything. So it depends on the person, so I feel like we have to modify it for each person." (Corona QN, Line 122)

The WMTY conversation guide helped staff have a “deeper conversation” with families, encouraged them to dedicate more time to identifying needs, and helped participants feel more comfortable discussing their needs.

"[...] I feel like we had to go more deep and talk more about it with the participant because sometimes they don't they don't like to talk about their problems, even if they're going through a lot of stuff at that moment." (Corona CSA, Lines 208-211)

"[...] To make it participants to open up a little bit more with you, in that way they feel a little comfortable, you know to start sharing her problems with us. I think it was helpful, you know, to get good questions. So that way we can get out you like a little bit more, you know, less a task, you know. (Corona CSA, Lines 304-308)

Impact of WMTY conversation on needs identification (Corona and Ocean Avenue ONLY)

Most (85%) staff survey respondents at Corona and Ocean Avenue (N = 20) indicated that the WMTY questions made it easier to identify needs outside of WIC compared to methods used previously, and 50% said they made more referrals with the WMTY questions. There was no statistically significant difference between intervention sites in the perceived impact of the WMTY conversation guide.

While many WIC staff felt the WMTY conversation extended encounters with WIC families, there was still feedback that the conversation guide was “helpful” and “effective” at helping identify needs.

“I think the questions now are more effective because it has to go straight to the point that they need any help before it was just like, do you want any referrals about certain things? [...] the conversation starts better with these questions?” (Corona CSA, Lines 218-222)

“It was helpful in many instances, because then it made it a little bit easier to find out what they really needed.” (Ocean Avenue QN, Lines 100-103)

Still others did not feel the WMTY conversation guide was particularly impactful at identifying needs and leading to referrals.

“... a lot of people said that they didn't need assistance. And then you know, like I said, I got a couple people who want childcare...” (Ocean Avenue QN, Lines 181-187)

Barriers to needs identification and referral

Although the conversation revealed referral needs, WIC staff mentioned that participants with undocumented status were concerned about the potential impact of seeking additional support on their immigration status.

“...Right away they say No, no, no, no, because, because they scared some of them, they don't have status.” (Ocean Avenue CSA, Lines 277-278)

The fear was compounded when the Public Charge Final Rule was implemented in February 2020. The impact of Public Charge was particularly mentioned by the WIC staff at Corona site.

“...that was during the time of public charge. And no matter how we explain to them, that WIC is not that the public charge, they still needed like a legal help.” (Corona QN, Lines 234-236)

Even when needs were identified and a caregiver was open to referral, gaining consent for Unite Us could end up being the barrier. WIC staff said that many caregivers, particularly those with undocumented status, feared having their information stored in a system outside WIC.

“They don't want to show their address. They don't want to show their date of birth and then right away declined it...” (Ocean Avenue CSA, Lines 124-126)

The electronic nature of the consenting process also proved challenging for some caregivers who were not familiar with e-signatures or were generally less technologically savvy.

“Also the consent, the electronic consent. Sometimes we would have trouble with getting the participant to sign it, because they're not very, I guess, not advanced, but they don't know how to use technology stuff.” (Corona QN, Lines 487-490)

WIC staff also expressed frustration with the scarcity of services available for the most structurally disempowered participants, particularly for those without documentation.

“And, you know, this person doesn't speak English, and you know this person is undocumented. So sometimes, even if I want to give them referrals, I mean, there is nothing else we can do.” (Corona CSA, Lines 163-165)

Feedback on referral process

WIC staff generally preferred referral methods in which they shared contact information for potentially beneficial services directly with caregivers or where they could make a warm hand off to co-located services because they were faster and required less documentation than using Unite Us.

“I would say that the resource pass was excellent, because it has a list of all different kinds of programs. So usually when they have need for a certain program and you get the page where it is and you circle it for them and then you explain to them how it works.” (Corona QN, Lines 434-437)

“I would say the way that we referral participants is easier than going to the United because United we have to actually putting everything there, with just like a registration that we're doing with our referrals methods that we have at the center is basically we have is the WIC pack, we also have another pamphlet.” (Corona CSA, Lines 382-385)

“Isn't it easier to just Okay...[staff in co-located service] is right here. We have a SNAP, here. They do it right there. Even the same day. Sometimes we have participant that they apply for Medicaid the same day.” (Corona CSA, Lines 855-857)

While WIC staff had some positive feedback about Unite Us, the amount of time required to document and use the system was key feedback from the focus groups. Creating a participant profile in Unite Us required duplicating documentation already performed in NYWIC. Additionally, switching from NYWIC to Unite Us was seen as adding “extra work” to their already busy schedules. There was also concern about honoring the caregiver’s time; caregivers are also busy and cannot always commit the time required to document the necessary information in Unite Us.

“It's like ... doing a pre-screening what we have a new participant. It does take time. And like I probably said we don't decide sometimes you get so packed, like so busy, that that extra time sometimes we don't have.” (Corona QN, Lines 476-478)

“That's extra about maintaining their profile, building their profile and then searching for the information. So that is extra work. (Corona QN, Lines 538-539)

“Many times, in the middle of the whole thing they'll tell you I need to go I need to go pick up my child ...They abandon you in the middle of trying to build the profile and leave and there's nothing you can do at that point. You can't force them to stay.” (Corona QN, Lines 569-575)

However, a few WIC staff members stated that even though the process took time initially, it became easier once they got accustomed to the system.

“Yeah, so um I felt similar to [WIC QN] where in the beginning, you know, it takes a little time but once you get used to it and you start doing it , you know like with anything it becomes like almost like second nature. So then I felt it was easier and I got the hang of it quicker and I was able to make referrals and find things faster for the client. Like I did feel I found services pretty fast through the system and I was able to make referrals quick for them through Unite Us. So then You know when I got used to it, it really didn't take that much time. So, you know overall it was positive.” (Ocean Avenue QN, Lines 446-452)

WIC staff liked that the WMTY partner network placed the onus on the organizations receiving referrals to follow up with their families, that there was access to more services through the network, and that the information about services was up-to-date.

“They follow up with them to make sure that they actually get the services, than me at the office telling them and advising them and making the phone call with them, and then waiting for three months to follow up to see how it was, whether the person was successful or not.” (Ocean Avenue QN, Lines 171-176)

“With WIC What Matters to You most, there, we have things available to us now that we did not have before. Or we were unaware of before, so that has helped.” (Ocean Avenue QN, Lines 125-130)

“I will say yeah United will be good in that fact because we will have updated information.” (Corona CSA, Lines 520-522)

Perceived impact of WMTY on participant experience and retention

Overall, most staff survey respondents agreed that talking about needs contributed to increased participant satisfaction (68%), a higher likelihood of benefits utilization (59%), and an increased likelihood of retention (53%) (Figure 24). There was no statistically significant difference between intervention sites in perceived impact of discussing needs.

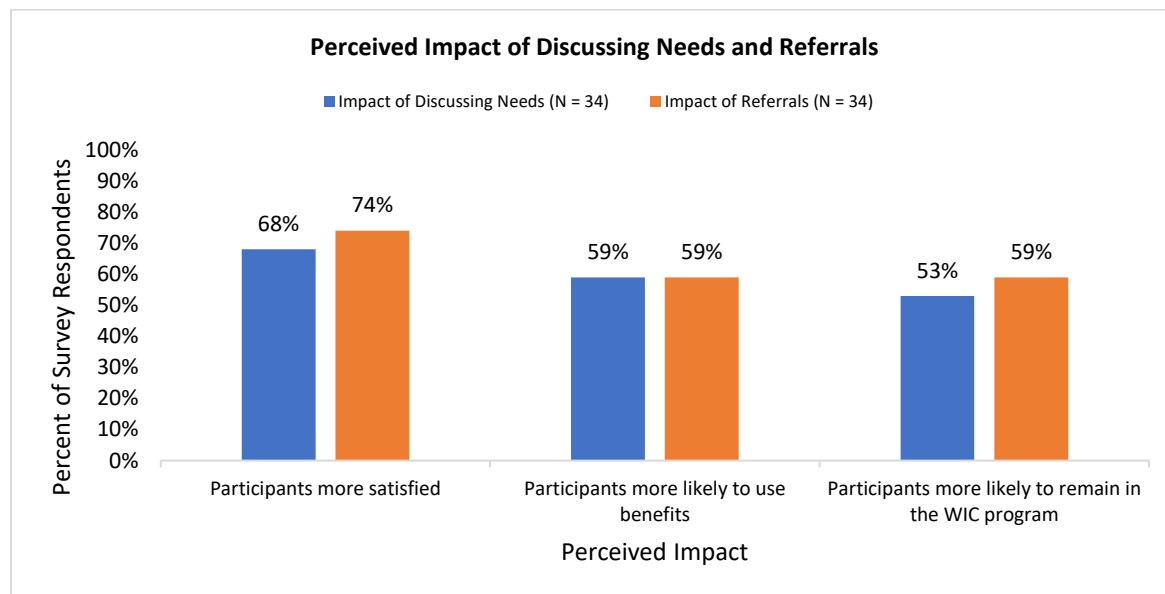


Figure 24. WIC staff's perceived impact of discussing needs and making referrals

Overall, most staff survey respondents agreed that making referrals contributed to increased participant satisfaction (74%), a higher likelihood of benefits utilization (59%), and an increased likelihood of retention (59%) (Figure 24). There was no statistically significant difference between intervention sites in the perceived impact of referrals.

Overall, most staff survey respondents from intervention sites had a positive perception of the impact of WMTY. Around three-quarters, (73%) of staff survey respondents agreed that more services were available to participants because of the project. Over three-quarters (77%) agreed caregivers were more likely to learn new information about services in the community and be successfully connected to

community services. Nearly two-thirds (62%) agreed that because of WMTY, participants experienced reduced barriers to participation (Figure 25). There was no statistically significant difference between intervention sites in perceived impact of WMTY.

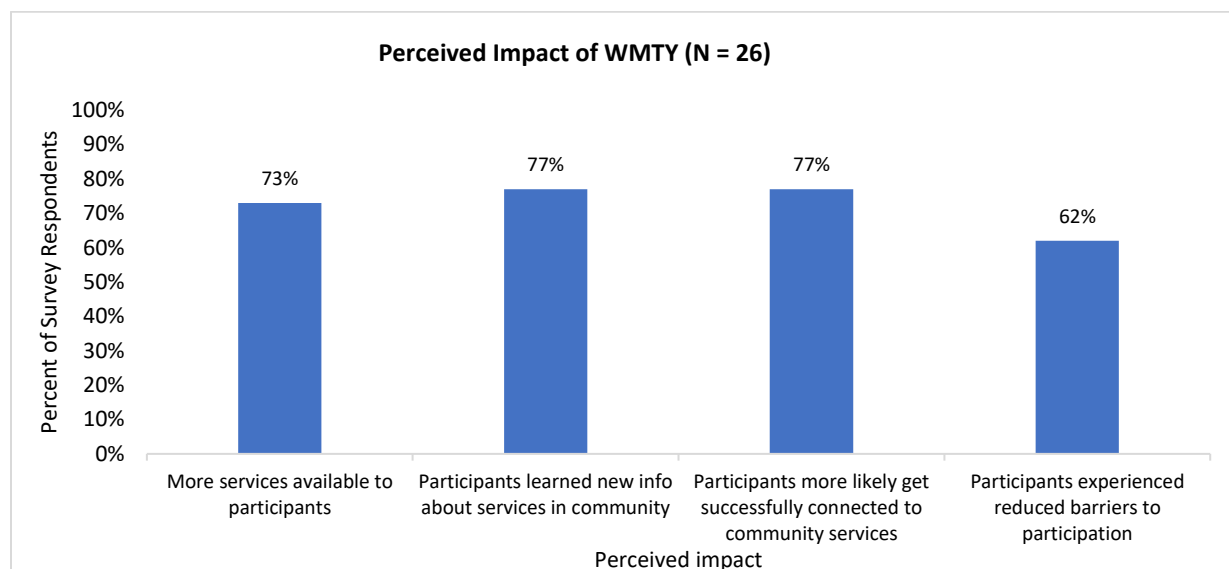


Figure 25. WIC staff's perceived impact of WMTY project

During the focus groups, WIC staff noted that WMTY may have enhanced participant's overall satisfaction with the WIC program. Even though not every participant needed referral services, the conversation may have helped them see the program as a resource hub, increasing their perceived value of WIC, and potentially leading them to seek more support and promote the program through word of mouth.

"I think it did change the way they see WIC. Because now they know, like, WIC also offers referrals to other services, so sometimes they'll stop by and they'll ask questions like, oh, where can I get this?" (Corona QN, Lines 610-612)

"[...] it might, not keep the retention, it might probably create on promotion and referral [...] It might not work for the person that I talked to, but word of mouth probably would mean one more participant, to the, to WIC." (Ocean Avenue QN, Lines 789-795)

WIC staff were less confident that the project would have any impact on recertification. They said a participant's decision to recertify depends on other factors such as income eligibility, child's age, and need for food/formula. Many WIC staff shared that the retention drops after children turn one year old, the time when the program stops providing infant formula.

"I don't really think that it would make a difference in terms of retention. We have a large percentage of people who are on the program for the first year when they when they have the baby. And that, you know, that is by design, they decide that, OK, I'm going to be on the program and they're on until maybe it's a year old, at a year now, the child can drink milk and eat the food that, you know, they already prepare. So they don't see where WIC is going to be helpful after that...I don't think that the Unite Us is going to, you know, make them decide to recertify. A large percentage of them as well, may be going back to work and maybe they don't qualify after the first year." (Ocean Avenue QN, Lines 738-746)

Recommendations for next steps

WIC staff were open to continuing to use the WMTY conversation guide after the WMTY project's end.

"I will use it as a as a guide so I know where I am, and what I cover, even if I cover it differently, but I know that I cover these questions..." (Ocean Avenue QN, Lines 240-241)

Staff, especially those from Ocean Avenue, were especially interested in learning more about public benefit programs, having more in-demand services (such as childcare) available as referral options, and providing the intervention to all WIC participants regardless of any age-specific criteria. They also recommended expanding access to closed-loop referrals to WIC participants throughout New York State.

"If we can have any way to have more information for each program...about like the eligibility or any more details ... it will be helpful for them to ask questions because they expect from us to know more about the program to referral [sic] them..." (Ocean Avenue CSA, Lines 574-577)

"I think so you need to make some more connection[s] with many more association[s], let's say childcare center. And many of them was too far from the home, so they have no way to do... We can recruit more organizations and associations. So strengthen the whole project." (Ocean Avenue CSA, Lines 855-859)

"If we open the referral for all the categories, not just for six to nine or 18 to 21 [months], sometimes the participants need help, even if not in this this age ...for four years they need for pregnant woman they need. That's why I said if we open it more for all the category, it would be helpful also to the group." (Ocean Avenue CSA, Lines 507-511)

"I think that also it should be extended statewide because I think overall it can help a lot of people..." (Ocean Avenue QN, Lines 893-894)

Given the documentation burden, WIC staff were more hesitant about continuing the use of Unite Us without changes in staffing or workflow. QNs from both sites strongly recommended integrating Unite Us, or another closed-loop referral system, with NYWIC, so that information would only have to be documented once and staff would not have to juggle multiple systems.

"So if those services would be linked with NYWIC and then they could get those referrals from NYWIC, Unite Us can get the referrals from NYWIC once we hit that whatever tab or anything then in the program. So that will be maybe a good idea like this to connect with NYWIC." (Corona QN, Lines 524-527)

There was also a recommendation to create or appoint a dedicated staff member to oversee referral management.

"Because we have, uh, limited time. We have a huge workload. And it would be great if someone can handle this and work with it because they can follow up with them. They may have conversation with participants longer and would be more like uh helpful. We are trying to do but we have something different also to do. That's why if a specific person will work in it, it would be more helpful." (Ocean Avenue CSA, Lines 449-454)

Partner Experience and Perceived Value

Survey response rate

The post-intervention evaluation survey of partners was sent to 22 representatives from WMTY partner CBOs, and there was a 73% survey response rate. There was no statistically significant difference between sample and population representation stratified by geography and organization type (Tables 6 and 7).

Table 6. Partner representation in survey sample and population by network and organization type

Partner Network	Sample (#)	Sample (%)	Pop. (#)	Pop. (%)	Two-proportion z-test p-value
Both	6	38%	6	27%	0.64
Corona	6	38%	11	50%	0.94
Ocean Avenue	4	25%	5	23%	0.68

Table 7. Partner representation in survey sample and population by organization type

Organization Type	Sample (#)	Sample (%)	Pop. (#)	Pop. (%)	Two-proportion z-test p-value
External	11	69%	18	82%	0.42
PHS	5	31%	4	18%	0.66

Quality of received referrals

Most CBO partners (75%) received at least one referral from an intervention site during the implementation period. All those who received a referral said at least some referrals met the eligibility criteria. However, the overall quality of referrals was “average” meaning that about half of the referrals received were appropriately aligned with available services and met eligibility criteria (Figure 26).

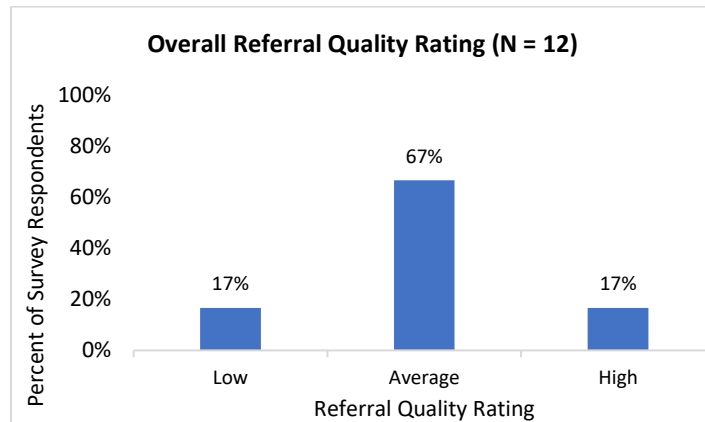


Figure 26. Rating quality of referrals received by partners

By the end of the implementation period, partners felt referrals were mostly appropriate. Quality issues were predominantly present early in the implementation period and were ultimately resolved via communication with the WMTY project team.

“I found that the referrals were mostly appropriate once we ironed out some communication glitches in the beginning, which in my opinion, to be accepted.” (Queens Partners, Lines 128-130)

According to partners, the primary referral quality issue was that referred participants often did not meet eligibility criteria for age, income, geography and/or immigration status. In rare cases, there were data errors in the participant profile in Unite Us, which was resolved through communication.

“The quality of the referrals improved as we shared feedback during the periodic checking we had. So one of our programs there is a catchment area. So I guess that's one. There really was strict criteria.” (Queens Partners, Lines 181-184)

Partners also acknowledged that the pandemic impeded some of the planned attempts at knowledge sharing about eligibility criteria and services, which they also felt contributed to some of the quality issues with referrals early on.

“And the biggest problem was that we weren't able to present to the case managers. And I know that there was that they wanted us to and then COVID and shutdowns and all those things. So it couldn't be helped.” (Brooklyn Partner at Queens Focus Group, Lines 130-133)

“...Prior to the pandemic, we were talking about speaking with WIC staff, going through each organization and introducing ourselves and the work that we're doing. That was that's the one piece I would have probably revisited, basically going back to 2019 and skipping 2020 or going to 2021 and skipping 2020. (Brooklyn Partner at Queens Focus Group, Lines 416-421)

In the absence of such knowledge sharing or the ability to provide in-service training, partners noted that it would have been helpful if referral senders had an easy way to confirm eligibility criteria.

“It's essential to determine if the health insurance based on their age, there is some information that is missing in the current United Us to determine which because we have two groups. One is over age of 65 and one group is under 65. Within the Unite Us, you know, if they can enhance a little bit what we needed in terms of eligibility requirements, then that will be very helpful.” (Brooklyn Partners, Lines 140-142; 272-273)

“I do have some feedback about United Us, Unite Us because I think the idea of Unite Us is to allow all the partners to really make referrals to everyone on the platform. And I feel like at least for our experience, we make a lot of referrals and we don't have much successful outcome for those referrals we make, mostly because either the other organization has does not have capacity or there are sound like we're unclear about their eligibility criteria. After we send a referral, they would say our client is not eligible and they have to reject it. So it seems like where like confirmation, clarification or communication should happen between partners on Unite Us to ensure a more successful Rate.” (Brooklyn Partners, Lines 124-132)

Partner feedback on Unite Us for referral management

Most partner survey respondents found it easy to receive referrals (75%) and document outcomes (67%) in Unite Us. However, less than half (42%) are interested in continuing to use Unite Us to receive referrals once WMTY ends (Figure 27). Only one respondent used Unite Us to make a referral.

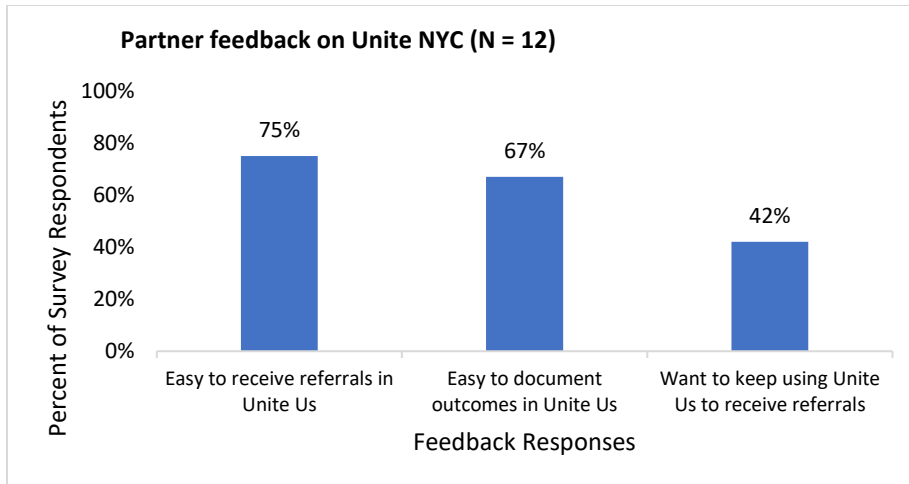


Figure 27. Partner feedback on Unite Us

During the focus groups, partners described a positive experience with Unite Us. They described the platform as “user friendly” and “easy to navigate.” They liked the ability to filter and find referral information from the participant’s profile. Many of them mentioned that the activity log/timeline and notes sections of a participant’s profile were helpful for tracking when and why the referral was made and what actions had been taken so far. They also appreciated the email notifications, which helped them stay on top of referrals without having to constantly check the system.

“It’s very simple to just click to all the referrals, or filter the referrals is very user friendly. I’m able to go back to all of the referrals made base, like I said, I can filter them and get all the information there. So for me, that’s excellent.” (Queens Partners, Lines 60-63)

“So being able to get a[n] email [...] that there’s a referral waiting for me [...] makes it a lot easier to be able to follow up without necessarily checking the system regularly.” (Queens Partners, Lines 109-112)

Only a quarter (25%) of partner survey respondents indicated that they had used systems other than Unite Us to look up community services, receive referrals, make referrals, or otherwise manage referrals. The other systems respondents indicated using for community services search and referral management were HITE, NowPow, and homegrown solutions in SharePoint. Partners were asked to compare their experience using Unite Us to other systems for community services search and referral management but given the small sample size (N = 4), those results are not included. However, those that were able to make a comparison during the focus group preferred Unite Us.

“My experience with Unite US is better. Primarily because, one, the way they track outcome is very streamlined.... And also I very like their report. So when I need to export a report and look at the how’s everything going, I’m able to like basically export like everything in one report. ... And of course it’s a coordinated intake and bidirectional communication tool. So that’s helpful.” (Brooklyn Partners, 112-113; 119-124)

Overall, partners seemed to appreciate being introduced to a dynamic, closed-loop referral system where they could receive and send referrals.

“I think that being able to have a system where you’re not only able to accept referrals because you have a central area to send referrals as well, I think it just streamline the process a lot better. And I think that it’s definitely a great system to use.” (Queens Partners, Lines 591-594).

Responding to referrals

Partners were committed to addressing participants' needs, even if new issues came up during intake or participants did not meet eligibility criteria. During the intake process, partners often found that participants had additional needs beyond that for which they were referred. Fortunately, many organizations were able to support these additional needs. When referred participants did not meet program criteria, organizations provided additional resources or tried to refer to other organizations.

"So we found that a lot of the referrals led to other [...] Other things in people's lives that we were able to assist with, too." (Queens Partners, Lines 529-530)

Barriers to responding to referrals (or service connections)

Partners mentioned that having multiple ways to contact participants could increase the chances of successful outreach.

"If a phone contact doesn't work [...] being able to email would have been easier for them to understand." (Queens Partners, Lines 459-460)

Even after making successful contact with participants, partners faced other barriers when trying to connect participants to services. One partner said that sometimes they had to put applicants on a waiting list due to the time-specific enrollment and high demand for the program.

"It's just that our enrollment time is really what I guess limits us, but not the system or the program itself... it's all timing, nothing to do with it." (Queens Partners, Lines 406-408)

One partner also noted that the transition to virtual services ended up excluding participants who did not have consistent access to the internet or were uncomfortable using technology.

"It is just such a barrier having everything through virtual contact where much of our client base does not have access to that. So, it's something that was the biggest barrier." (Queens Partners, Lines 503-505)

Helpful network management practices

As part of network management, Slack, a text-based communication platform, was implemented to help facilitate informal communication between partners, a Box site, a cloud file storage service, for partners to store relevant WMTY documents, quarterly meetings for the Queens and Brooklyn networks where updates were shared, and monthly 1:1 meetings to review referrals, open cases, and talk through any issues.

Most partner survey respondents responded N/A to the questions assessing value of the Slack channel (69%) and Box site (56%). A response of N/A indicates the respondent did not use Slack or Box and thus is unable to evaluate whether it added value to the network.

Nearly two-thirds (63%) of partner survey respondents evaluated the Quarterly meetings; of those that responded, 100% felt the quarterly meetings were valuable. During the focus groups with partners, they expressed that these monthly 1:1 meetings were the most helpful network management tool and were most effective at resolving issues from program eligibility criteria to timely case closure.

"The communications were very good. We had, if not monthly, I think, bi-monthly check-ins with ... staff. And those were always really helpful in identifying some issues that we were having, maybe even issues that we didn't realize that we were having [...]" (Queens Partners, Lines 663-666)

Partner experience and perceived value of participation

For most partners, WMTY was a new collaboration with PHS (55%). Overwhelmingly, partners felt the experience was valuable (88%) and one they would recommend to peer organizations (88%) (Figure 28).

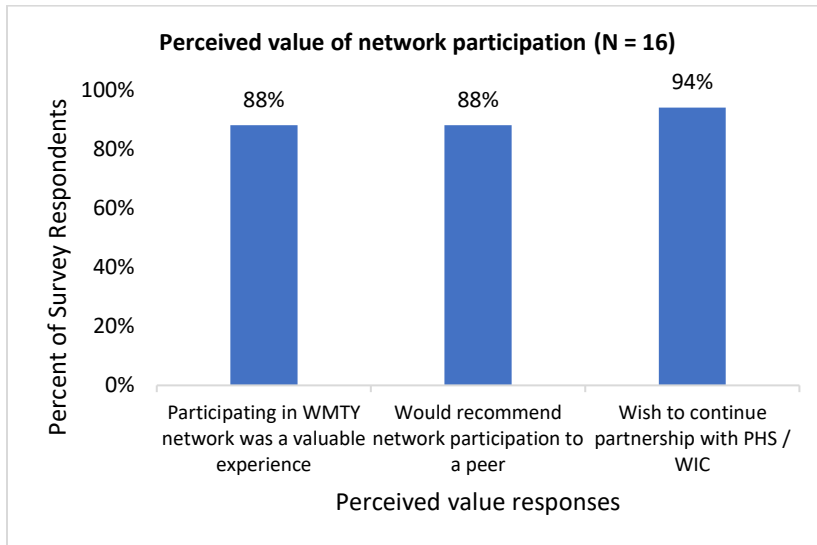


Figure 28. Perceived value of network participation for partners.

During the focus groups, partners said the benefits of network participation included getting more eligible and/or new types of participants connected to their programs and connecting with other organizations in the network.

“It really brought a whole new subset of clients to us.” (Queens Partners, Line 679)

“I think families benefited and I think we were able to connect with different partners that we wouldn't normally connect with, so that was helpful.” (Queens Partners, Lines 491-493)

Nearly all partners (94%) are interested in continuing a partnership with WIC (Figure 28.) and this also came through in the focus groups.

“It turned out to be a great partnership. We do it again and again as long as it lasts, just because it was so good for our community. We work together.” (Queens Partners, Lines 631-633)

“I found a really valuable source of referrals and like variety in referrals, if you have the majority of clients, ... I think it's something ... really useful to continue.” (Queens Partners, Lines 640-646)

Retention and Benefit Usage

Table 8. Demographic Characteristics of subset of Age-eligible Children at Public Health Solutions Comparison and Innovation Clinics at baseline (T1) and implementation (T2). Statistically significant differences by group are in **bold**.

		Baseline (T1)		Implementation (T2)	
		Comparison (n=2,462)	Innovation (n=2,975)	Comparison (n=2,282)	Innovation (n=2,656)
		%	%	%	%
Category at start of period	IBE*	5.4	4.6	5.2	5.0
	IBP	26.7	23.1	30.2	28.5
	IFF	30.4	25.5	22.7	22.9
	C1	42.4	46.8	41.9	43.6
Number of WIC participants	One	33.0	33.6	33.2	32.5
	Two	44.4	40.5	44.0	42.7
	Three or more	22.6	25.9	22.8	24.9
Race ^a	American Indian or Alaska Native	21.2	5.0	18.8	2.6
	Asian	15.3	8.4	16.3	11.0
	Black or African American	27.0	5.0	29.1	7.0
	Native Hawaiian or Other Pacific Islander	3.9	0.7	4.4	0.8
	White	34.0	82.2	33.1	79.7
	Hispanic	39.1	56.2	42.0	50.4
Twin status	Yes	4.0	3.0	3.1	4.0
Enrolled	TANF	5.4	3.0	6.1	2.8
	SNAP	34.6	35.7	35.4	33.7
	Medicaid	87.0	85.8	85.0	84.9
Primary language other than English		47.7	70.8	47.4	64.7
Ever breastfed	Yes	91.5	90.0	91.6	85.8

* Abbreviations: IBE: Infant, exclusive breastfeeding; IBP: Infant, partial breastfeeding; IFF: Infant, formula feeding; C1: Child category 1 (one year old); TANF: Temporary Assistance for Needy Families; SNAP: Supplemental Nutrition Assistance Program.

^a Participants can respond to more than one category so the total percentage may be greater than 100.

In general, there were statistical differences in participant characteristics between the comparison and innovation groups at baseline (T1), but several of the differences were not observed between groups during the implementation period (T2) (Table 8). The biggest differences were observed for race and ethnicity and primary language other than English; these differences in T1 were still observed in T2. The values for enrollment in TANF, SNAP and Medicaid are shown for those with data; about 30% of the sample had missing information for one of more of these programs.

Recertification

The crude, unweighted proportions of age-eligible infants and children recertified in the innovation and comparison groups during baseline (T1) were significantly different (69.7% and 66.3%, respectively), and the proportions recertified during implementation (T2) were significantly different (80.9% and 71.3%, respectively) (Figure 29). This was also true when studying infants. For children, there were no differences at baseline (T1) but at T2, recertification was higher for the innovation group (Figure 29). For sample sizes of these groups, please see [Appendix F: HPRIL Table A.1](#).

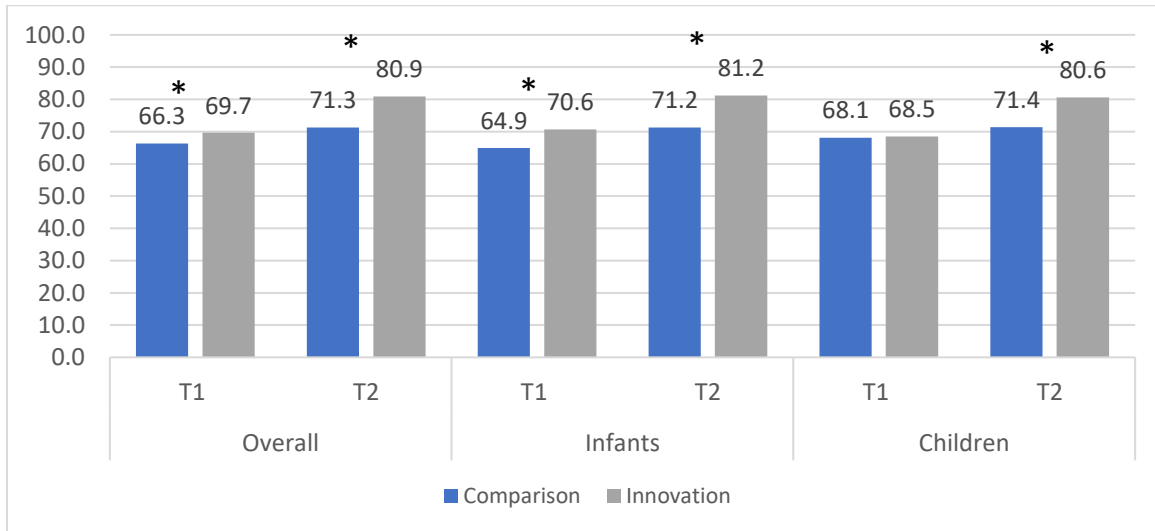


Figure 29. Proportion recertified (crude, unweighted) at baseline (T1) and implementation (T2) overall, for infants, and for children in an age-eligible subset of participants at Public Health Solutions comparison and innovation clinics. * $p < 0.05$.

Timeliness of Recertification

Presented in Figures 30 and 31 are the distributions of time gap between the end of a child's certification period and their recertification (truncated at 100 days) for the innovation and comparison groups at PHS during T1 and T2. As shown, during T1 the innovation and comparison groups were very similar, and children experienced more timely recertifications than infants. During T2, there was a higher degree of dissimilarity between innovation and comparison, and children were again more likely to be timely recertified.

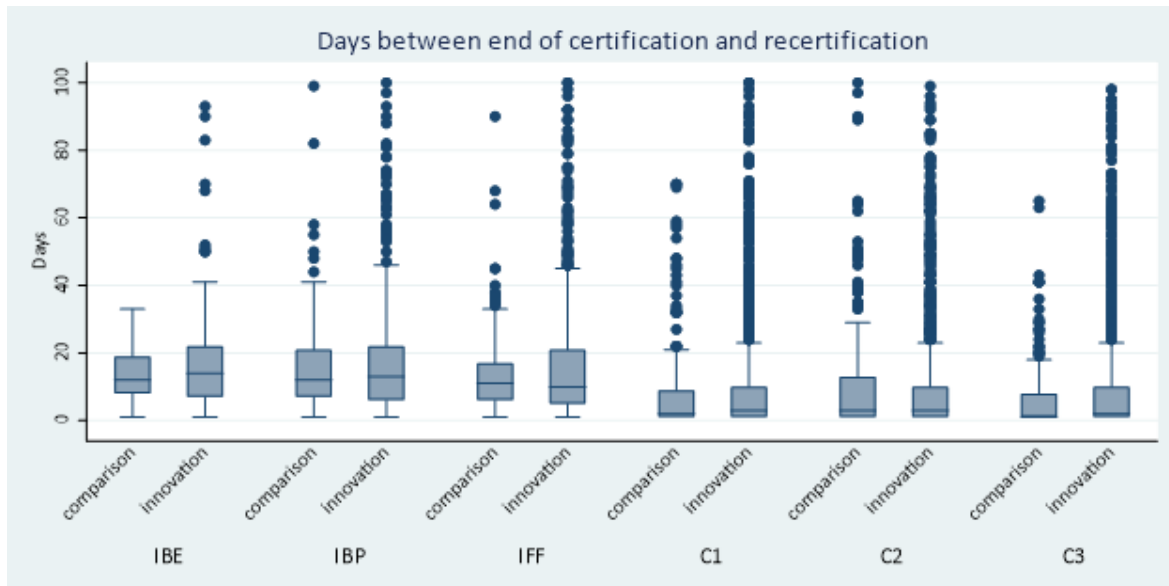


Figure 30. Number of days between end of certification and recertification by innovation group and participant category at Public Health Solutions during baseline (truncated at 100 days)

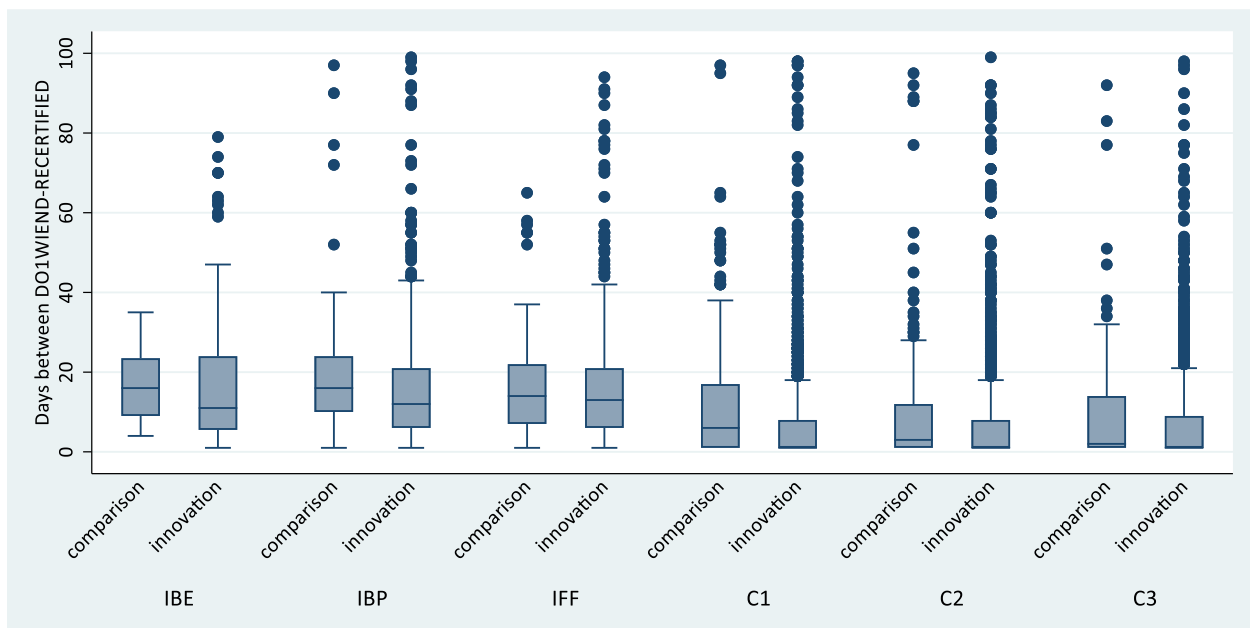


Figure 31. Number of days between end of certification and recertification by innovation group and participant category at Public Health Solutions during baseline (truncated at 100 days)

Retention

Overall, and for infants, the differences between innovation and comparison for retention were statistically significant during T1 (Figure 32). The proportion retained was higher and statistically significant for the innovation group than the comparison group overall (78.2% vs. 69.8%, respectively), among infants (77.2% vs. 69.6%, respectively), and among children (79.5% vs. 70.1%, respectively) during T2.

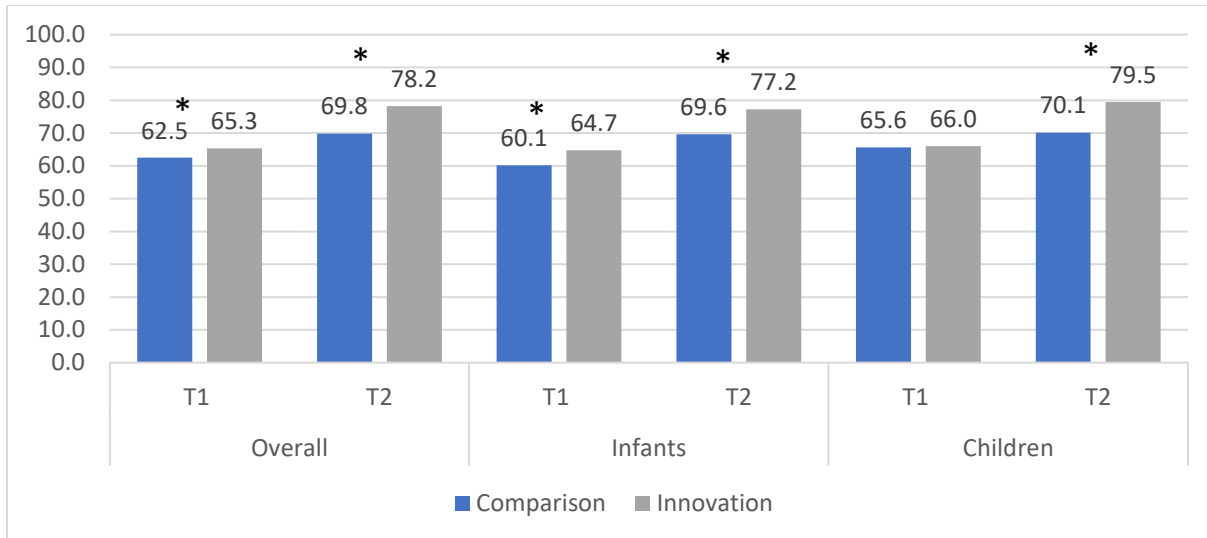


Figure 32. Proportion retained (crude, unweighted) at baseline (T1) and implementation (T2) overall, for infants, and for children in an age-eligible subset of participants at Public Health Solutions comparison and innovation clinics. * $p < 0.05$.

Participation (i.e., benefit issuance)

As noted above, data were only available for seven months of benefit issuance during the baseline period, whereas a full year of data was available during the implementation period. During the baseline period, the median months of benefit issuance was 6 and 7 in the two groups, and during the implementation period, the median months were 12 in each group.

Table 9. Benefit Issuance in Public Health Solutions Innovation and Comparison Groups during Baseline and Implementation Periods

Agency/Group	Baseline (T1)		Implementation (T2)	
	Innovation	Comparison	Innovation	Comparison
Months of benefit issuance (median, IQR)	6 (3, 7)	7 (3, 7)	12 (10, 12)	12 (8,12)
Percent of cohort issued benefits (%)	66.9	71.4	76.4	73.1

The crude, unweighted comparisons of continuous benefit issuance overall and for infants and children are presented in Figure 33. Differences between groups at baseline (T1) were non-significant overall and for children, but significantly higher in the innovation group for infants. During the implementation period (T2), however, significant differences were observed with higher proportions of continuous benefit issues in the innovation group overall and when stratified for infants and children.

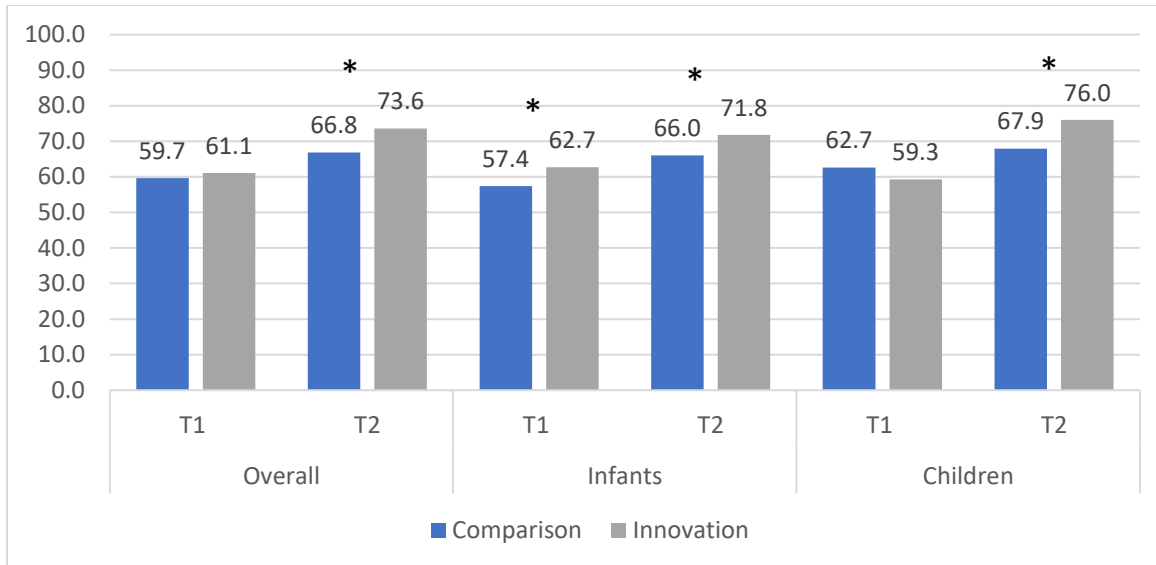


Figure 33. Proportion with continuous benefit issuance (11-12 months) (crude, unweighted) at baseline (T1) and implementation (T2) overall, for infants, and for children in an age-eligible subset of participants at Public Health Solutions comparison and innovation clinics. * $p < 0.05$.

Balancing the groups using PSW

As mentioned above, the greatest differences in characteristics between the innovation groups at T1 and T2 were twin status, American Indian/Alaskan Native, Asian, Black, White, Hispanic, primary language other than English, and ever breastfed (all with an absolute standardized difference greater than 0.05) (Figure 34). After propensity score weighting, these absolute standardized differences were all reduced to below 0.05. The absolute standardized difference mean after weighting was 0.01. For ASDs for infants and children separately, please see [Appendix F: HPRIL Table A.2](#).

As mentioned above, the greatest differences in characteristics between the innovation group at T1 and the comparison group at T1 were being American Indian/Alaskan Native, Asian, Black, Native Hawaiian/Pacific Islander, White, Hispanic, speaking a primary language other than English, being ever breastfed, and being an infant (all with an absolute standardized difference greater than 0.05) (Figure 35). After propensity score weighting, these absolute standardized differences were all reduced to below 0.05 except for being multiracial (ASD 0.06) and speaking a primary language other than English (ASD 0.10). The absolute standardized difference mean after weighting was 0.04. For ASDs for infants and children separately, please see [Appendix F: HPRIL Table A.2](#).

As mentioned above, the greatest differences in characteristics between the innovation group at T1 and the comparison group at T2 were being American Indian/Alaskan Native, Asian, Black, Native Hawaiian/Pacific Islander, White, Hispanic, multiracial, speaking a primary language other than English, being ever breastfed and being an infant (all with an absolute standardized difference greater than 0.05) (Figure 36). After propensity score weighting, these absolute standardized differences were all reduced to below 0.05 except for being White (ASD 0.055), being Hispanic (ASD 0.11), speaking a primary language other than English (0.14) and number of family members in WIC (ASD 0.06). The absolute standardized difference mean after weighting was 0.05. For ASDs for infants and children separately, please see [Appendix F: HPRIL Table A.2](#).

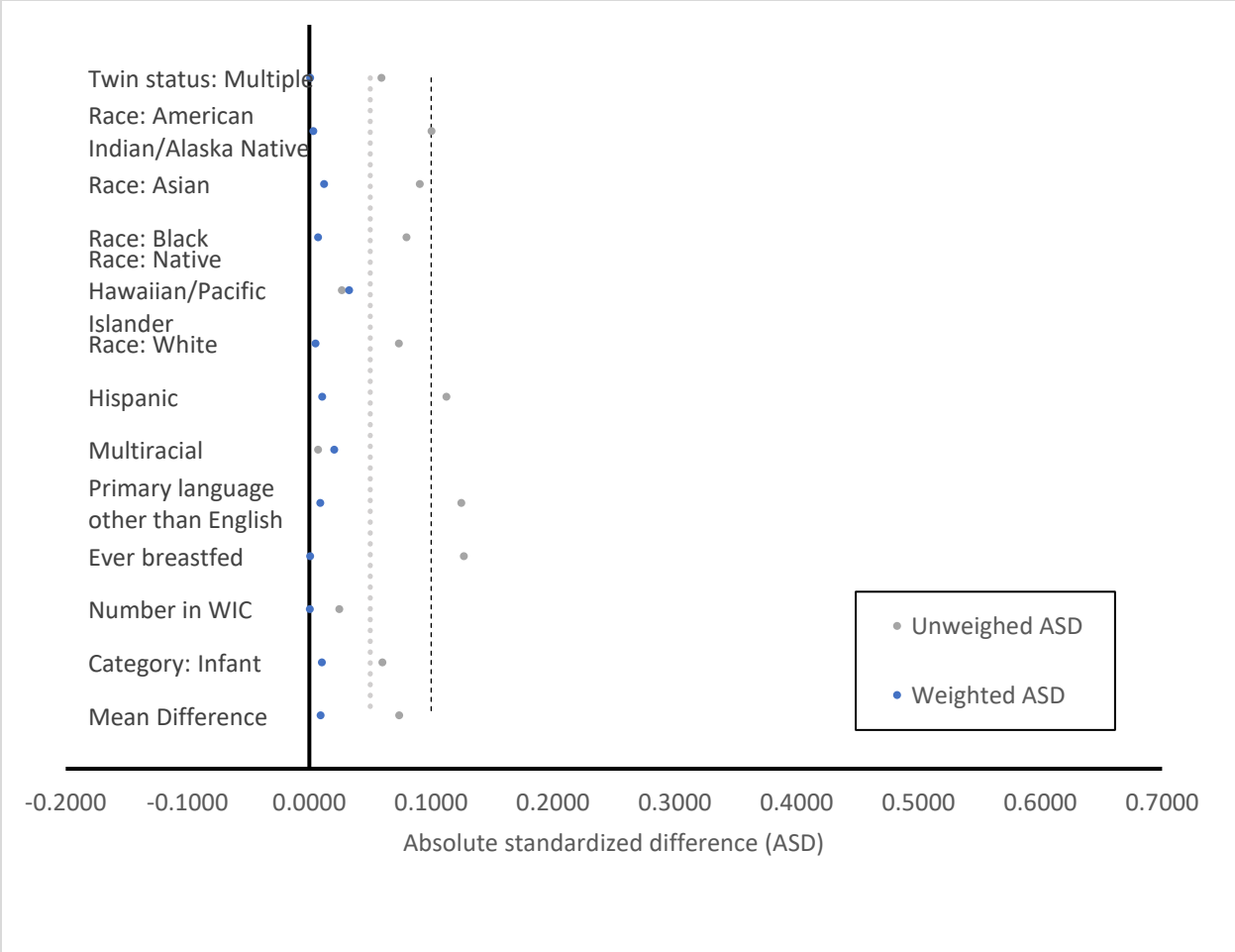


Figure 34. Absolute Standardized Differences in Characteristics (unweighted and weighted) at T1 vs. T2 in the Innovation Group Overall: Infants and Children (in the subset) at Public Health Solutions comparison and innovation clinics

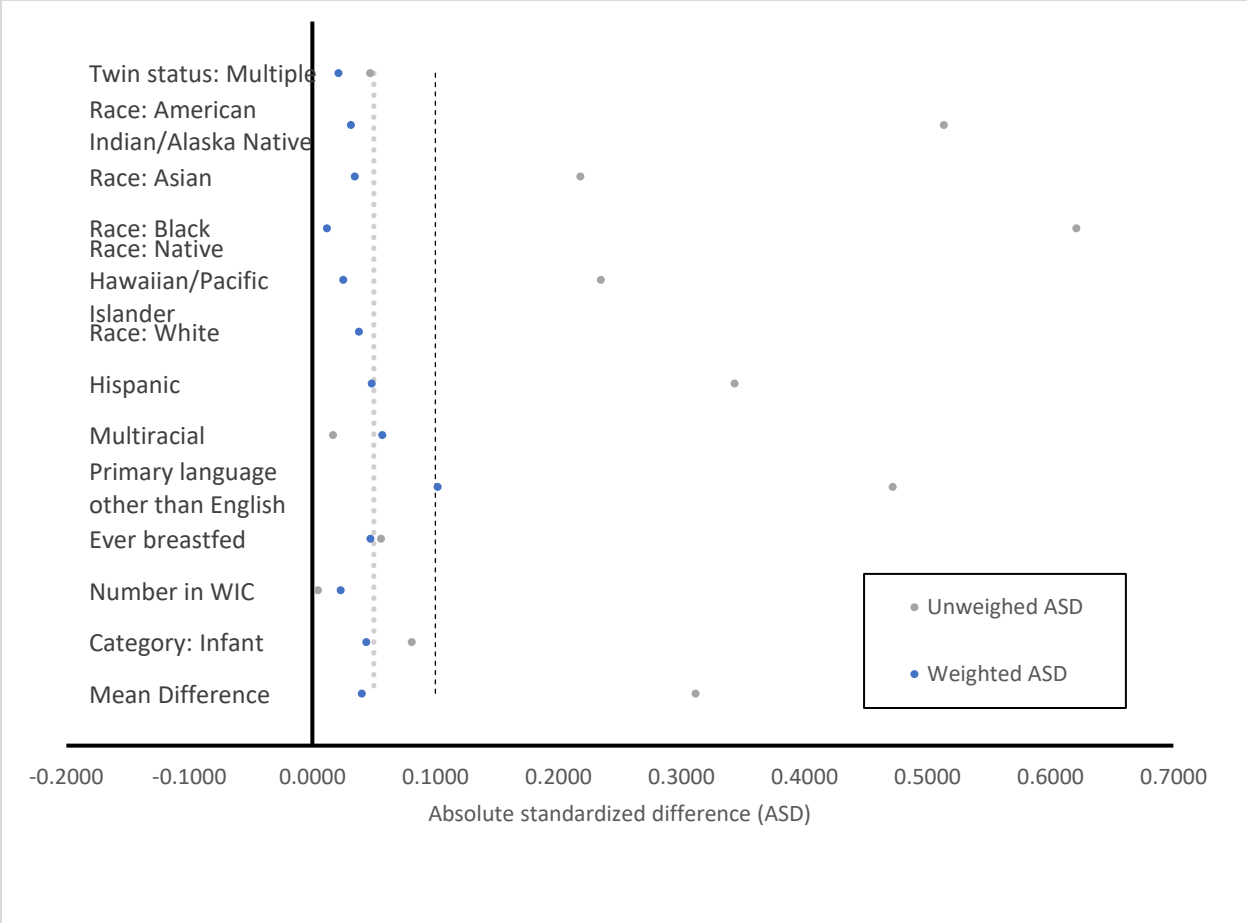


Figure 35. Absolute Standardized Differences in Characteristics (unweighted and weighted) at T1 in the innovation group vs. T1 in the comparison group overall: Infants and Children (in the subset) at Public Health Solutions comparison and innovation clinics

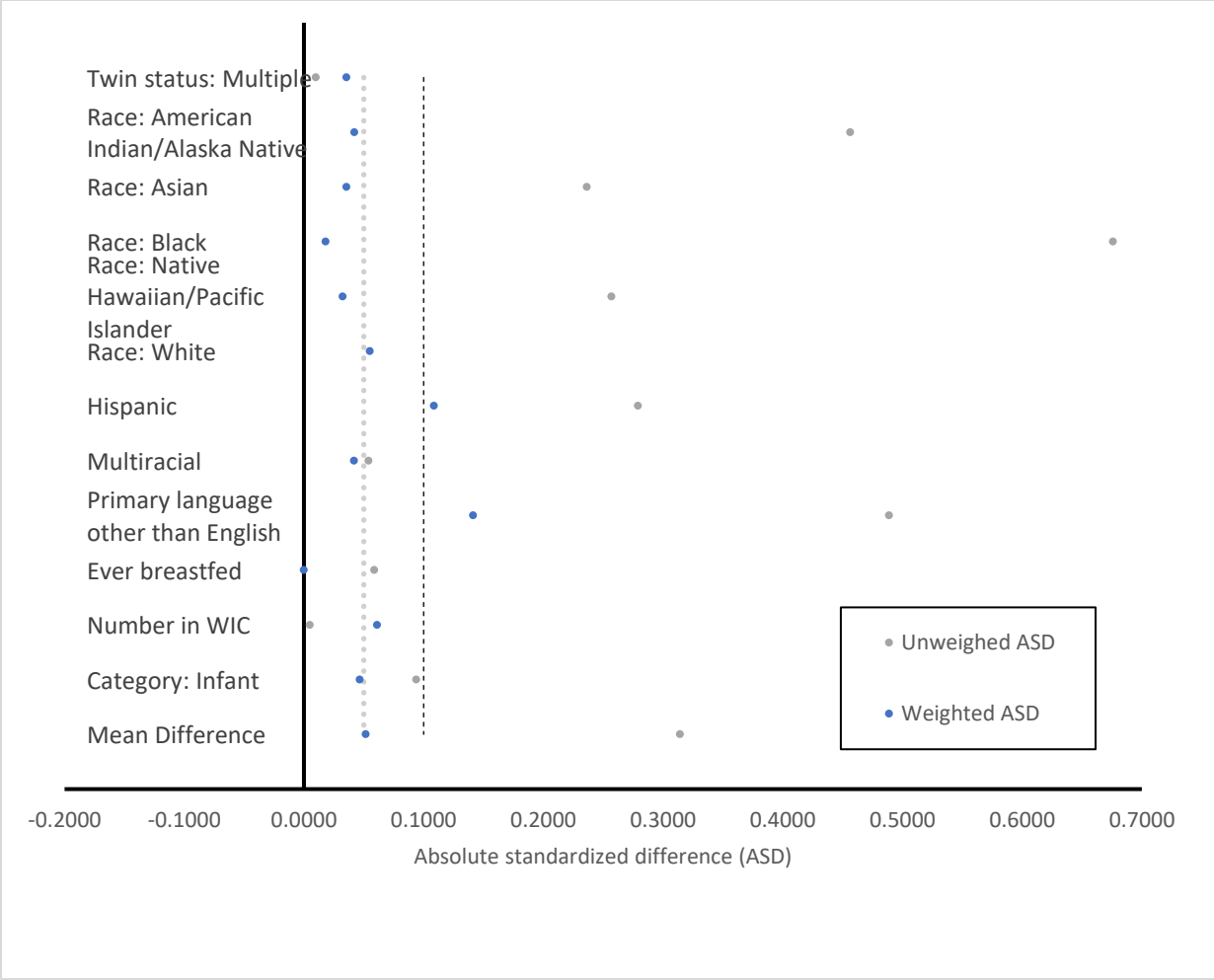


Figure 36. Absolute Standardized Differences in Characteristics (unweighted and weighted) at T1 in the innovation group vs. T2 in the comparison group overall: Infants and Children (in the subset) at Public Health Solutions comparison and innovation clinics

Difference in Difference (DID) analyses

Using the unweighted data and a crude (unadjusted) analysis, being in the innovation clinics was associated with a 6.2% (95% CI: 2.8% to 9.7%) increase in recertification overall, a non-significant 4.2% (95% CI: -0.4% to 8.8%) increase in infants, and a significant 8.8% (95% CI: 3.5% to 14%) increase in children (Figure 37). Using the weighted data and adjusted Model A1, the WMTY innovation was associated with a 7.7% (95%CI: 3.4% to 12.0%) increase in recertification overall, an 8.5% (95% CI: 2.7% to 14.2%) increase in recertification among infants, and a non-significant 6.2% (95% CI; -0.4% to 12.8%) increase in recertification among children. In general, the results for Model A2, are lower than those for A1. For the beta coefficients and 95% confidence intervals, see Table 10.. For the sample sizes of each of these groups, see [Appendix F: HPRIL Table A.3.](#)

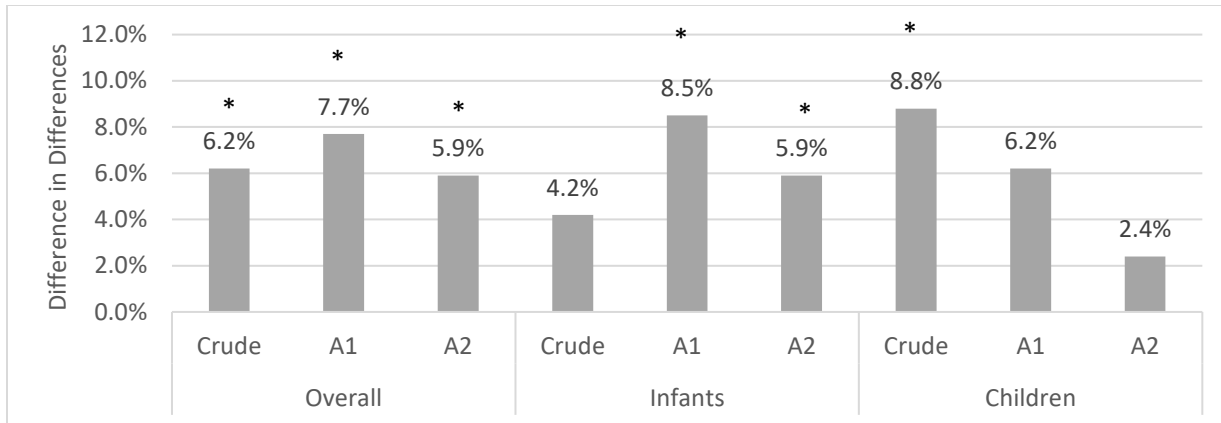


Figure 37. Percentage point differences in recertification between the age-eligible innovation and comparison groups at Public Health Solutions overall, for infants, and for children using three models: Crude (unweighted) and two weighting analysis techniques: A1: PSW-DID using logit for propensity score weighting (PSW) and ordinary least squares (OLS) for DID; A2: PSM-DID using Kernel for propensity score matching (PSM) and probit for DID with repeated cross-sectional option. * $p < 0.05$.

Using the unweighted data and a crude (unadjusted) analysis, being in the innovation clinics was associated with a 5.5% (95% CI: 1.9% to 9.0%) increase in retention overall, a non-significant 2.9% (95% CI: -1.9% to 7.8%) increase in infants, and an 8.9% (95% CI: 3.5% to 14.2%) increase in children (Figure 38). Using the weighted data and adjusted Model A1, the WMTY innovation was associated with 7.4% (95% CI: 3.0% to 11.9%) increase in retention overall, an 7.0% (95% CI: 1.0% to 13.0%) increase in retention among infants, and a 7.7% (95% CI: 1.0% to 14.4%) increase in retention among children. In general, the adjusted results for Model A2 were smaller in magnitude. For the beta coefficients and 95% confidence intervals, see Table 10.. For the sample sizes of each of these groups, see [Appendix F: HPRIL Table A.3](#).

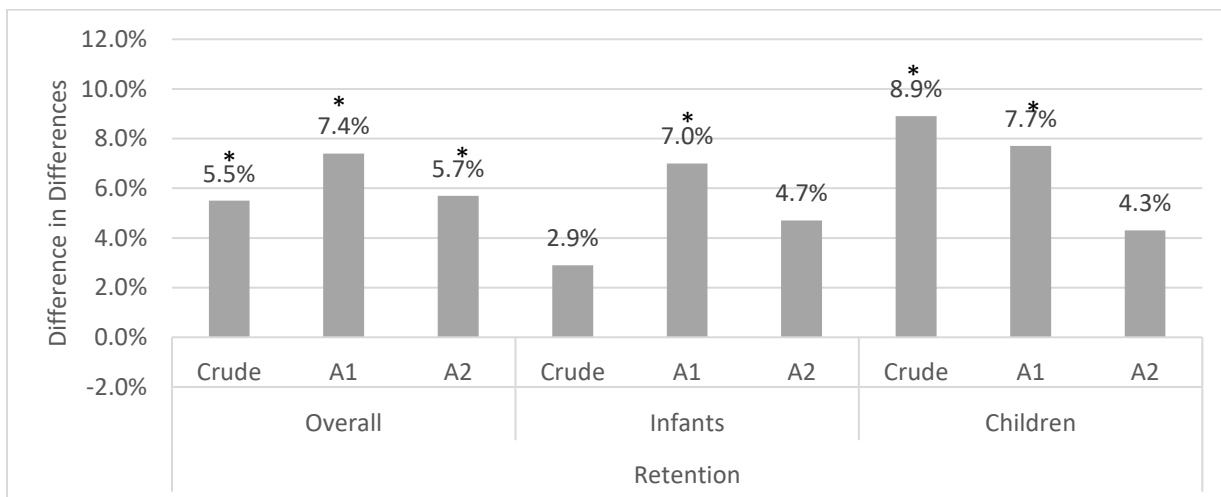


Figure 38. Percentage point differences in retention between the age-eligible innovation and comparison groups at Public Health Solutions overall, for infants, and for children using three models: Crude (unweighted) and two weighting analysis techniques: A1: PSW-DID using logit for propensity score weighting (PSW) and ordinary least squares (OLS) for DID; A2: PSM-DID using Kernel for propensity score matching (PSM) and probit for DID with repeated cross-sectional option. * $p < 0.05$.

Using the unweighted data and a crude (unadjusted) analysis, being in the innovation clinics was associated with a 5.4% (95% CI: 1.7% to 9.1%) increase in continuous benefit issuance overall, a negligible 0.5% (95% CI: -4.4% to 5.5%) increase in infants, and a 11.5% (95% CI: 5.9% to 17.0) increase in in children (Figure 39). Using the weighted data and the adjusted Model A1, WMTY was associated with a 5.5% (95% CI: 0.9% to 10.1%) increase in continuous benefit issuance overall, a negligible 1.8% (95% CI; -4.4% to 8.0%) in infants, and a 9.2% (95%CI: 2.3% to 16.2%) in children. The adjusted results using Model A2 are generally smaller in magnitude as compared to the results in Model A1. For the beta coefficients and 95% confidence intervals, see Table 10.. For the sample sizes of each of these groups, see [Appendix F: HPRIL Table A.3](#).

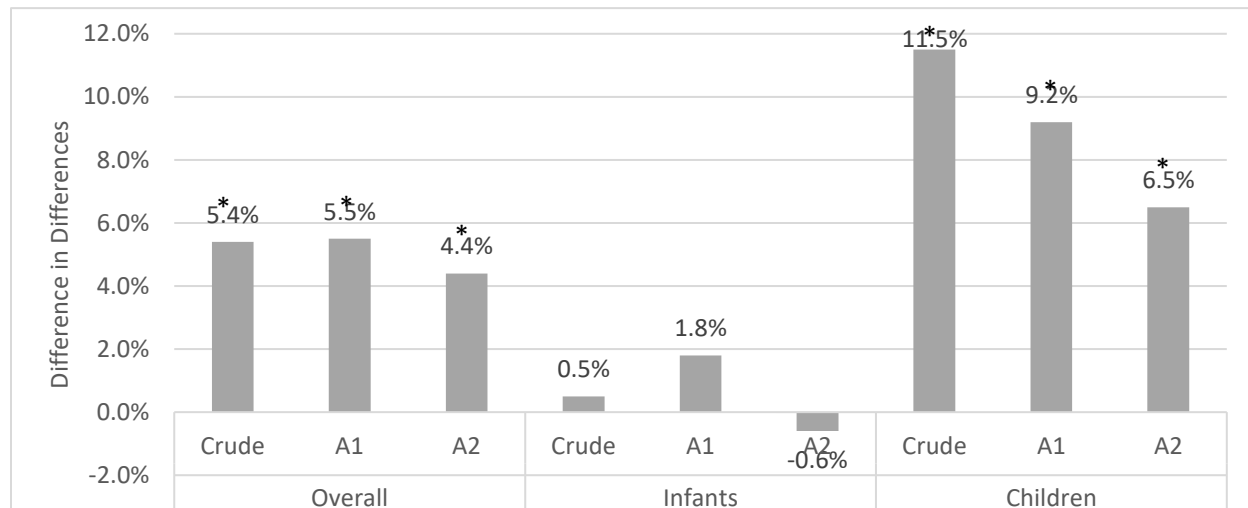


Figure 39. Percentage point differences in continuous benefit issuance between the age-eligible innovation and comparison groups at Public Health Solutions overall, for infants, and for children using three models: Crude (unweighted) and two weighting analysis techniques: A1: PSW-DID using logit for propensity score weighting (PSW) and ordinary least squares (OLS) for DID; A2: PSM-DID using Kernel for propensity score matching (PSM) and probit for DID with repeated cross-sectional option. *p< 0.05.

Table 10. Difference-in-Difference Results for Recertification, Retention, and Benefit Issuance Using Crude and Two Adjusted Models Overall and for Infants and Children in Public Health Solutions Innovation and Comparison Groups

	Overall	Overall	Overall	Infants	Infants	Infants	Children	Children	Children
	beta	95%	CI	beta	95%	CI	beta	95%	CI
Recertification (crude, unweighted)	0.062	0.028	0.097	0.042	-0.004	0.088	0.088	0.035	0.141
Retention (crude, unweighted)	0.055	0.019	0.090	0.029	-0.019	0.078	0.089	0.035	0.143
Benefit issuance (crude, unweighted)	0.054	0.017	0.091	0.005	-0.044	0.055	0.115	0.059	0.170
Recertification:									
Model A1	0.077	0.034	0.120	0.085	0.027	0.142	0.062	-0.004	0.128
Model A2	0.059	0.024	0.094	0.059	0.014	0.104	0.024	-0.029	0.077
Retention:									
Model A1	0.074	0.030	0.119	0.070	0.010	0.130	0.077	0.010	0.144
Model A2	0.057	0.022	0.092	0.047	0.000	0.094	0.043	-0.010	0.096

Continuous benefit issuance:									
Model A1	0.055	0.009	0.101	0.018	-0.044	0.080	0.092	0.023	0.162
Model A2	0.044	0.007	0.081	-0.006	-0.055	0.043	0.065	0.010	0.120

LIMITATIONS

Delay between WMTY conversation and participant evaluation

Surveys were issued to caregivers any time between one to twelve months after they received the WMTY conversation. Given the delay between the one-time conversation and the questionnaires, caregivers may have had difficulty recalling the specific WMTY conversation with WIC staff. Their recollection may instead be limited to their general experience with WIC or to more recent conversations with WIC staff that were unrelated to WMTY.

Qualitative data quality issues

Transcripts in English and Spanish often had multiple inaudible or unintelligible segments, which reduced the overall amount and quality of analyzable qualitative data. These transcript quality issues were present in transcripts of interviews conducted in all languages. A study limitation is a network connectivity issue that may have caused an IDI participant and/or interviewer to lose connection from the meeting where the interview was being recorded. Also, high quality audio that would ensure everything could be clearly heard on the part of the interviewer and participant could not be guaranteed. This impacted the qualitative data analysis in that some responses to interview questions were missing from the transcript entirely or parts of responses were cut short, preventing analysis of a participant's full perspective.

Potential interviewer misunderstanding of IDI questions

At least one interviewer misinterpreted the IDI guide questions and probed IDI participants to speak more generally about the process of getting connected to and enrolling in WIC rather than the process of being connected to other services they were referred to from WIC. The impact is that participant perceptions about referrals and connections to services that are raised in the IDIs may reflect experiences completely unrelated to the WMTY project. However, there is still value in understanding the participants' experience discussing needs outside WIC and connecting to other services in general, as those were key components of the WMTY project.

Small survey sample sizes

The survey of staff and partners had small sample sizes which limited the ability to do stratified analysis by WIC site or network geography. Additionally, there were small sample sizes in the caregiver survey when stratified by WIC site and experience with conversations about needs outside WIC and referrals. Therefore, outcomes observed at the intervention sites often could not be statistically compared to outcomes from the comparison site. This limited the ability to demonstrate the incremental value and impact of the WMTY project.

DISCUSSION

Was the project implemented as intended?

The key components of the project, (1) having a conversation with eligible caregivers about their highest priority needs, and (2) making referrals to a coordinated, accountable network of partners using a

dynamic, closed-loop referral platform were implemented. However, the demands and changes in WIC operations in response to the COVID-19 pandemic did necessitate modifications with the staff responsible for implementing each of those functions.

For most of the implementation period, the WMTY conversation took place during a separate phone call sometimes days after the WIC appointment. Project staff and PHS volunteer staff did tell caregivers they were calling on behalf of WIC, but there was no integration with the WIC appointment. This discontinuity could have contributed to the perception of this conversation and any subsequent referral as an extra or bonus offering, unique to the pandemic period, rather than as a core part of WIC services.

In the last quarter of the implementation period, WIC staff were reintegrated into the workflow. CSAs who normally have a more administrative role — working the front desk for in-person services, checking participants in for their appointments (virtual and in-person), and predominantly asking about referrals for adjunctive services — conducted the WMTY conversation with caregivers over the phone instead of QNs. Early in the project planning period, CSAs had clarified that those discussions about referrals for other services were typically handled by QNs with whom caregivers tended to have longer, deeper conversations and greater rapport. If QNs had been able to consistently have the WMTY conversation with eligible participants, it is possible that more eligible caregivers would have had conversations that identified a greater diversity of needs and resulted in referral to a larger variety of services.

QNs were initially tasked with profile and referral documentation in Unite Us for caregivers who had identified needs and consented to referral. This function instead shifted to the WMTY Project Coordinator for the duration of the implementation period, as core WIC staff were concentrated on adapting to policy and service delivery changes during the onset of the pandemic. This modification enabled the intervention sites to maintain capacity to refer eligible participants with identified needs to partner organizations. Without this modification, eligible participants would not have been referred to service as WIC staff did not have capacity to process referral documentation in addition to their normal duties due to added complexities associated with operational changes resulting from attempts to keep staff and participants safe during the pandemic. However, the implementation period was no longer a 12-month period during which WIC staff could get accustomed to using Unite Us and ultimately feel comfortable sustaining its use after the project's end.

Due to the COVID-19 pandemic, some partners were unable to operate as their services could not be provided virtually (e.g., childcare or afterschool activities). Consequentially, these partners were unable to have an active referral relationship during the implementation period. One partner who provided domestic and intimate partner violence services that were never activated in Unite Us because their services fell under a special, restricted service category that was still in development throughout the implementation period. This restriction, understandably, was to protect the privacy of participants, but this was a service that could not be made available to participants through Unite Us.

How did eligible caregivers and partners engage in the WMTY workflow?

Although eligible caregivers engaged in all steps in the workflow, there were key points where there was the greatest likelihood of losing them from the process. First, most (63%) of the caregivers who received the WMTY conversation did not identify any issues during the conversation. There are several potential reasons why this could be the case. The intervention was conducted during a time when many caregivers may have been eligible for financial support from new, temporary sources such as Unemployment Insurance Benefits, Pandemic Unemployment Assistance, or Federal Pandemic Unemployment Compensation. These sources of support may have helped participants address needs that would have otherwise been raised. Additionally, other benefits programs, such as Medicaid and SNAP, were extending the benefit periods for existing participants in those programs so they could have

their benefits for longer before they had to contact someone about renewal. The extended support may have also helped participants address needs therefore, they may not have identified needs during the WMTY conversation.

Many caregivers did not know that WIC could offer referrals to the types of services that they would need and/or want. This could have dissuaded caregivers from raising issues, as they perceived no incentive to raise issues that the CSA or QN could not address. Relatedly, some caregivers felt as though their interaction with WIC staff was limited to discussion of WIC benefits and, as WIC staff could not directly act on their other needs, that raising other issues would have been irrelevant or simply an inefficient use of their and the staff member's time.

The second key transition point in the workflow where many caregivers were lost was between needs identification and obtaining consent to collect and share their information with a community partner. Around a quarter (24%) of caregivers who identified needs during the WMTY conversation did not consent to have their information entered into Unite Us. Concerns about the impact of accessing additional services on one's documentation status (i.e., Public Charge), a topic raised in both participant IDIs and focus groups with staff, discouraged some from agreeing to referral and consenting to have their information in Unite Us. Caregivers were concerned about potential issues for themselves or their families arising from their personal information being stored in a non-WIC system and/or being shared with someone outside WIC.

A less common contributing factor mentioned in the IDIs was that some caregivers prefer to act on the information themselves, so it is possible some declined to consent to referral because they preferred to be given the contact information and follow up on the information themselves. Logistical and technological issues with the consent form itself presented another barrier to referral: when all services became virtual, caregivers were more likely to either miss steps in signing their forms or forget to submit electronic paperwork entirely.

Progress through the steps of the workflow between referral and program enrollment or receipt of services was largely outside the purview of the LA. The likelihood of a participant acquiring these services or benefits depended on the capacity of the receiving organization to take on the case, the eligibility and appropriateness of the participant for the available services, and whether the participant was still interested in and eligible for the services they were referred to by the close of case.

Of the cases closed in Unite Us by the end of the implementation period, only 27% resulted in a participant receiving services or being enrolled in a program. Cases usually resulted in non-receipt of services due to unsuccessful partner follow-up with the participant, incompatibility between partner organization offerings and participant eligibility and needs, and lack of partner capacity to provide services. Enrollment rates could have been improved by ensuring eligibility criteria were met before the referral was made and checking that the hours and location were convenient for the participant before referral. Additionally, the enrollment rate could have been improved by having more partner organizations that covered a greater diversity of service categories, with few or no eligibility requirements, and the infrastructure to continue providing services during the pandemic.

Among partners, there was very little uptake in using Unite Us to make referrals. Only ten referrals were made from WMTY partners to WIC. Operational and financial disruptions due to the COVID-19 pandemic likely impacted the ability of WMTY partners to integrate Unite Us into their existing workflow. Continuity of regular operations became a major concern for many organizations, and many likely had no financial capacity to dedicate staff time to a separate system.

Did WMTY increase caregivers' perceived value and reduce barriers to participation?

The findings do not suggest that the WMTY conversation stood out in caregivers' minds. However, given that the intervention was conducted during a pandemic, it is possible that the survey respondents and in-depth interviewees may have had similar conversations with many organizations, and it would have been impossible to pinpoint this specific conversation. Furthermore, as the survey was issued between 1-12 months after a caregiver would have had the WMTY conversation, caregivers may have, understandably, had difficulty recalling the one-time WMTY conversation after months passed.

In terms of progress through the WMTY workflow, there were significant differences in participants' experiences between the intervention sites. Corona respondents were more likely to be offered a referral; this could be an indication of the strength of the Queens-based network and the Corona site's greater participation and engagement in the WMTY project. However, once offered referral, Ocean Avenue participants are more likely to consent to referral; that could indicate increased fear of the impact of Public Charge among Corona participants compared to those at Ocean Avenue. Once referred, Corona respondents were more likely to recall referral follow-up and enrollment in services than those at Ocean Avenue. These findings could further suggest the strength of the Corona network – in terms of more pre-existing relationships to leverage during network development, more service offerings, and better adherence to timeliness standards – all leading to more participants making it through and recalling making it through the referral workflow.

WMTY participants did not express a reduction in barriers to participation. From the IDIs, participants did not think of their needs outside WIC as “barriers” to participation. Among participants who identified barriers to participation, none of them raised these issues with WIC staff, citing that they did not think that WIC could help, WIC was only for benefits, and/or they were too busy to discuss with WIC staff.

Caregivers did cite other benefits, including the food package, breastfeeding support, child development support, and nutrition guidance, as what they appreciated most about the WIC program. It was what helped keep their children healthy and on track with the development that participants most valued about the program, before and after the WMTY intervention. Rarely did participants mention service navigation or connection to benefits as what they liked most or valued most about the program. For the most part, the ability to get referrals and learn about additional services was seen as a “perk,” and as a result, not directly associated with the value of the WIC program.

Did WIC staff perceive the WMTY project to be beneficial and worth continuing?

Experience using the WMTY conversation guide

WIC staff who used the WMTY conversation guide stressed the importance of a flexible, conversational, participant-centered approach which allows staff to use multiple questions and modify them to fit the WIC participant since every participant and every situation can differ. A rigid questionnaire or assessment form might not work well for conversations that try to identify the participants' highest priority needs.

Although participant-centered nutrition education was already in practice before the WMTY project, the use of the WMTY questions did help increase needs identification during the conversation with participants. However, there was less confidence in the ability to make more referrals with the WMTY questions. The quality and number of referral options available were more likely to impact the number of referrals made. This inference is supported by the fact that the number and diversity of referral partners were greater in the Corona network than in the Ocean Avenue network. Also, prior to the project, Corona WIC already had the benefit of being co-located with multiple PHS services (Health

Insurance, SNAP, and Maternal Child Health) where there was already some practice of warm hand-offs. Moreover, several of the Corona partners already had strong, existing relationships with a PHS program, whereas more of the Ocean Avenue partners were establishing completely new partnerships with PHS. These findings illustrate the importance of network quality when converting identified needs into referrals.

Experience using Unite Us

Feedback on using Unite Us was mixed but based on limited staff experience. Due to workflow changes, staff could not use Unite Us as regularly as originally planned. Even when staff used the system, one key component of Unite Us – direct communication with partner organizations receiving referrals – was not particularly used. It is possible this practice was uncommon because it was usually the participant’s responsibility to follow up on referral information prior to the implementation of the WMTY project. Additionally, an Outreach Coordinator for the LA and outreach liaisons at each site within the LA, are responsible for managing communication with external entities. The ability to communicate with external organizations is a key feature of Unite Us, and if not utilized, staff may not perceive the full value of Unite Us as a one-stop platform for referral management.

Perceived impact of referrals

WIC staff at intervention sites had a more positive perception of the impact of referrals compared to staff at the comparison site. Given that a key component of WMTY was addressing identified needs through referrals to a coordinated, accountable network of partner CBOs, the importance of referrals was a frequent topic of conversation. Thus, staff at intervention sites may have been primed to perceive referrals as especially impactful.

Perceived impact of WMTY project

WIC staff had a positive perception of WMTY’s impact. Staff believed the project helped connect WIC families to helpful community services and reduce barriers to participation. They also felt caregivers were more likely to see WIC as a resource hub because of the WMTY project. However, staff were less confident about WMTY’s impact on recertification rates as they felt participant-specific factors outside the project’s control, such as income eligibility, child’s age, food/formula preferences, were more likely to impact recertification.

Did partners perceive WMTY network participation to be beneficial and worthwhile?

WMTY helped PHS establish new partnerships, grow its pool of collaborators, and diversify service offerings in its growing citywide network of community resources.

Partners’ experience using Unite Us was mixed. Unfortunately, there were quality issues with referrals. Partners indicated that many or most referrals did not meet all eligibility criteria and/or that participant needs did not align with their service offerings. This may indicate a need to improve the referral conversation, conduct in-service training on services and eligibility criteria for referrers, and make eligibility criteria easier to find and check within Unite Us when making a referral.

The ability to make referrals through Unite Us was advertised to prospective partners as a benefit of joining the network. However, uptake and initiation of referrals outside the demand of this project did not occur.

In terms of network management, there was little to no uptake of other network “perks” such as the Slack channel and Box site. This suggests these tools were either inaccessible, unnecessary, or not of value to partners, as they went largely unutilized. However, other network features, such as monthly 1:1 meetings and quarterly network meetings, were well-received. These findings suggest that partners felt

these network activities added value for network partners and can perhaps be considered an important part of network management for those interested in replicating.

Collectively, the findings about partner experience suggest that the WMTY project was able to cultivate networks of community-based partners in two boroughs that connected parents and caregivers of enrolled WIC child participants to services that address their highest priority needs using a dynamic referral platform and a coordinated, accountable network of community partners. Ultimately, the partnership was a valuable experience worth recommending to others and one which developed a desire for continued partnership.

Did WMTY contribute to improved participation and retention?

The results indicate that WMTY positively impacted recertification, retention, and continuous benefit issuance in the overall sample, with differential impact for infants or children depending on the outcome. In adjusted analyses, overall recertification was 7.7% higher (95% CI: 3.4%-12.0%), 8.5% higher (95% CI: 2.7%-14.2%) among infants, but a non-significant 6.2% higher (95% CI: -0.4% to 12.8%) recertification among children. Overall retention was 7.4% higher (95% CI: 3.0%-11.9%), 7.0% (95% CI: 1.0%-13.0%) among infants, and 7.7% higher (95% CI: 1.0%-14.4%) among children. Overall continuous benefit issuance was 5.5% higher (95% CI: 0.9%-10.1%), 9.2% higher (95% CI: 2.3%-16.2%) among children, but a negligible 1.8% higher (95% CI: -4.4% to 8.0%) among infants. The results are consistent with crude (unweighted) analyses and generally similar, although smaller in magnitude, in the adjusted analysis using kernel PSM DID.

It should be noted that there were some MIS system difficulties with obtaining benefit issuance for T1 due to an MIS operating system change. Due to this system change, only seven months of benefit issuance data were available for T1. Adjustments were made in the definition of continuous benefit issuance data for T1 to allow for comparisons between T1 and T2. For this reason, the results should be interpreted with caution.

The consistency of the findings varies in the analysis stratified for infants and children. Whether these are meaningful differences or due to limitations in sample size should be considered. For example, the impact on recertification for children was smaller but similar in magnitude to the overall finding and that for infants. In contrast, the impact on continuous benefit issuance was negligible and insignificant for infants compared to the other two impact estimates. The reasons for the negligible findings for infants are unclear, except that perhaps continuous benefit issuance is uniformly high during this period and not amenable to change.

HPRIL chose an evaluation approach across all projects that involved the selection of year-long periods to serve as baseline and implementation periods. Within each period HPRIL obtained a data set of all infants and children that were active at the beginning of each period. This approach was not ideal for the evaluation of the WMTY innovation because it did not completely capture the sample of infants and children exposed to the innovation. To create an intention to treat analysis, we necessarily restricted the sample to those who could have been exposed and for whom outcome measures were assessed.

Despite these limitations, the results indicate that incorporating a WMTY session between 6-9 months or between 18-21 months improves WIC participation and retention. As noted earlier, the approach was feasible and acceptable to both WIC participants and staff, although areas for improvement were

identified. Further research should involve replicating these findings in other settings and operational research to address identified limitations.

RECOMMENDATIONS

Based on this study's findings, the following is recommended to other LAs and State Administrators.

Use a dedicated, participant-centered conversation guide. Such a guide encourages staff to probe caregivers about their highest priority needs and tie the outcomes of that conversation to referrals. Many staff used the guide in a modified format so it may not be the guide questions themselves, but the presence of a template for conversation and a reminder to connect identified needs to referral that was impactful.

Make needs identification conversation and closed-loop referral available to all participants. Caregivers of children at the ages at highest risk of dropping out of WIC were the focus of this study, but this targeting made it more difficult to implement the project. Separate documentation for eligible caregivers and track whether they received the conversation was required. In addition to double documentation and potential data quality issues, WIC staff noted, repeatedly, that all caregivers could benefit from the WMTY conversation and closed-loop referral and wished eligibility had not been restricted to a subset of families.

Integrate closed-loop referral platform with WIC MIS. Triple documentation burden (within the MIS, the ad-hoc tracker of eligible participants' progress through the intervention workflow and Unite Us) created a significant barrier to uptake among WIC staff. The time required to document in two additional locations beyond the required MIS tripled the amount of time staff at busy WIC sites had to spend with eligible participants which impacted site-wide workflows and extended wait times. Integration of the MIS with the closed-loop referral system, such that staff can initiate referrals from the MIS and see status updates on the referral within the MIS, would reduce time required to assess and refer participants. It could also increase the likelihood that caregivers would discuss their needs outside WIC, as some indicated they did not have enough time to engage in the WMTY conversation or provide the additional information required to complete a profile and referral within Unite Us.

Compensate network partners. While a network of community partners across multiple service areas was developed, there were many more organizations that were approached, but with whom partnerships could not be established because they could not perform the labor involved in network participation (including referral management and timely outcome documentation) without compensation. Models that compensate network partners allowed those organizations to fund the staff time required to manage referrals from acceptance, through participant outreach, casework, and outcome documentation, often in at least two systems (Unite Us and an in-house case management system).

Expand staff capacity to manage referrals by establishing a dedicated role at each site. WIC staff recommended that each site have dedicated staff to manage the referral process and ensure up-to-date knowledge of the many available services and their eligibility criteria. Although "cheat sheets", guidance, training, and documentation within Unite Us were helpful, they were insufficient for ensuring a high rate of quality referral and enrollment.

This embedded staff member could increase the quality of referrals and help more participants get connected to community services. WIC staff found it challenging and unsustainable to find and retain relevant information about referral options, while also performing all other required activities during

nutrition education with participants. The previous referral model was fast — one in which QNs simply shared the contact information of a service that would potentially benefit a participant — but ineffective. The onus was on participants to do the legwork and follow up on a service that may not be appropriate with no accountability on the part of the other organization.

Provide adequate training for qualitative interviewers during program evaluation. Adequate training on the program specifics and probing techniques will ensure qualitative interviewers probe specifically about WIC caregiver experiences related to WMTY referrals and services rather than other WIC services and referrals. In this study, at least one interviewer who misinterpreted IDI guide questions and probed caregivers to speak more generally about the process of getting connected to and enrolling in WIC rather than the process of being connected to other services they were referred to from WIC.

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APPENDIX A – Background Data Analysis

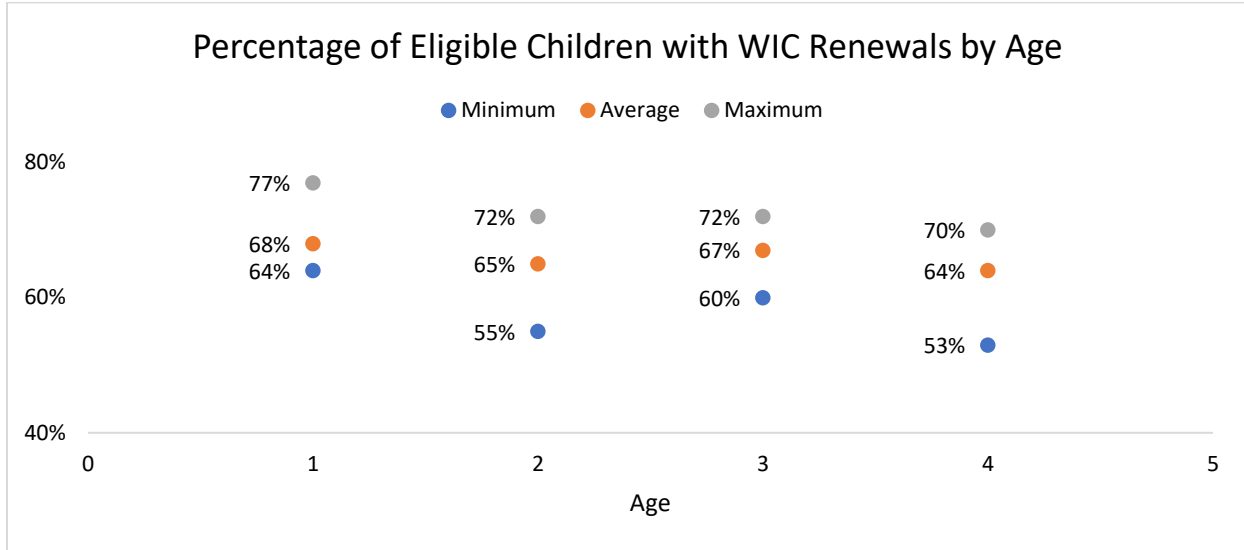


Figure A1. WIC Retention by Age. Time Period: January 1, 2016 through September 30, 2018. The Agency-wide rate of recertification at each age is lowest at Age 2 and 4. The agency-wide rate of recertification is: 68% at Age 1 (range: 64% to 77%), 65% at Age 2 (range: 55% to 72%), 67% at Age 3 (range: 60% to 72%), and 64% at Age 4 (range: 53% to 70%). Results are from analysis of combined quarterly extracts of visit and participant demographic data from New York State WIC MIS shared with PHS.

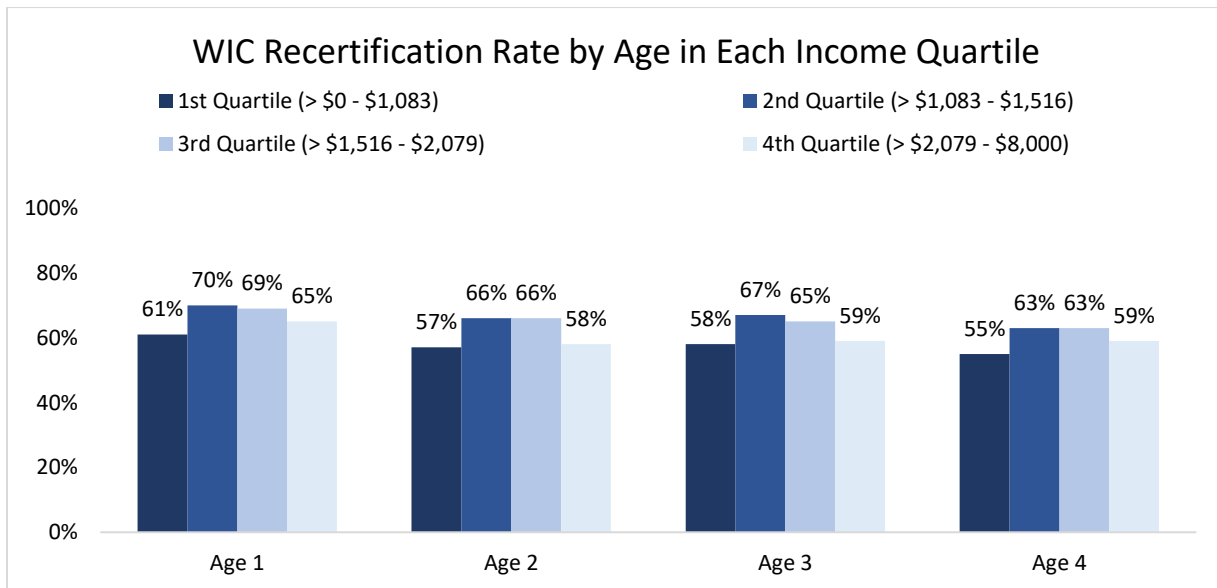


Figure A2. WIC Retention by Age and Family Monthly Income Quartile. Time Period: January 1, 2016 through September 30, 2018. Those in the 1st quartile (equivalent to a range in monthly income of \$0 to \$1,083) have the lowest rate of WIC recertification at every age, compared to those in other income

quartiles. Results are from analysis of combined quarterly extracts of visit and participant demographic data from New York State WIC MIS shared with PHS.

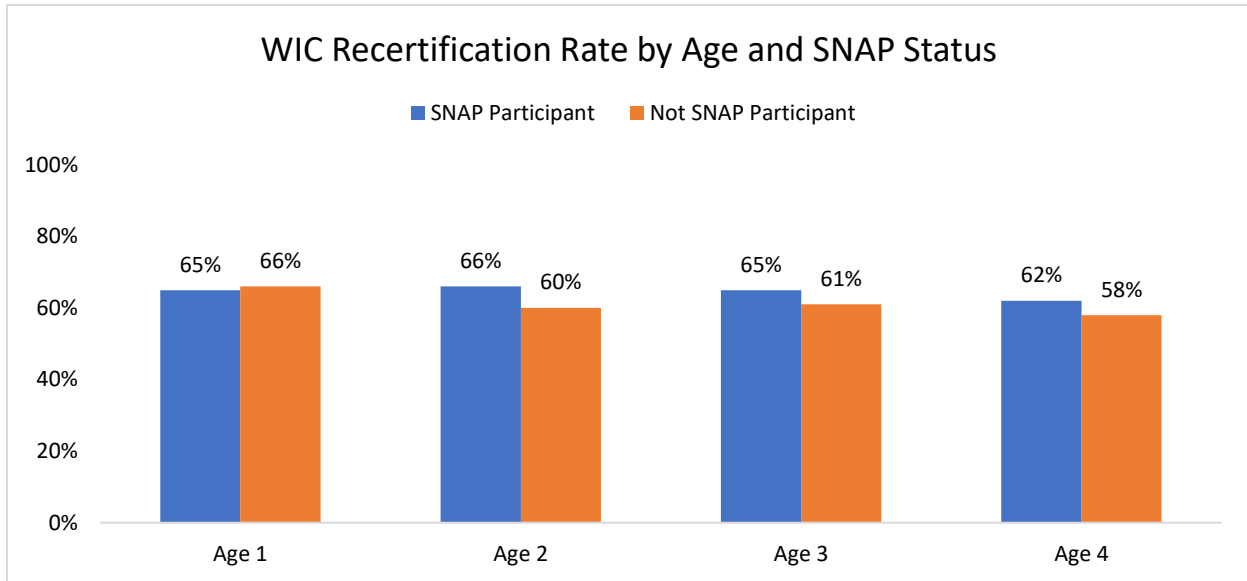


Figure A3. WIC Recertification by Age and SNAP Participation Status. Time period: January 1, 2016 through September 30, 2018. SNAP participants have equal or higher rates of recertification at every age compared to those who do not participate in SNAP. Note: 25% of WIC participants across the Agency are SNAP participants. Results are from analysis of combined quarterly extracts of visit and participant demographic data from New York State WIC MIS shared with PHS.

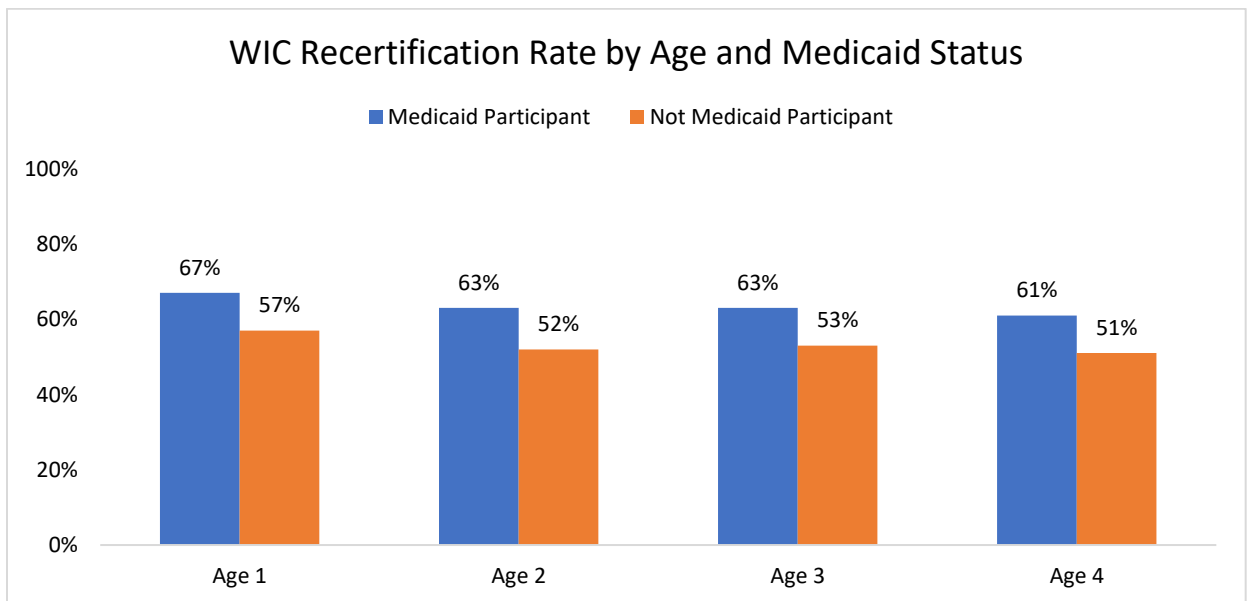


Figure A4. WIC Recertification by Age and Medicaid Participation Status. Time period: January 1, 2016 through September 30, 2018. Medicaid participants have higher rates of recertification at every age compared to those who do not participate in Medicaid. Note: 90% of WIC participants across the Agency

are Medicaid participants. Results are from analysis of combined quarterly extracts of visit and participant demographic data from New York State WIC MIS shared with PHS.

APPENDIX B – Site Selection

Table B1 and B2. Weighted Average of Proportion Differences in Child and Mother Dataset from WIC/SIS

CHILD DATASET (PEDNSS)	CORONA	OCEAN AVENUE
ASTORIA	9%	8%
BUSHWICK	19%	17%
EAST TREMONT	21%	18%
FLUSHING	11%	9%
JAMAICA	9%	8%
RIDGEWOOD	5%	4%
SUNSET PARK	8%	6%

MOTHER DATASET (PNSS)	CORONA	OCEAN AVENUE
ASTORIA	7%	5%
BUSHWICK	14%	13%
EAST TREMONT	17%	16%
FLUSHING	10%	10%
JAMAICA	8%	6%
RIDGEWOOD	5%	4%
SUNSET PARK	5%	5%

Table B3. Variables, Weight, and Proportion Differences between Intervention Site and Ridgewood WIC (the comparison site for short-term evaluation)

Variables from WIC Child Dataset	Corona	Ocean Avenue	Ridgewood
Breastfeeding Status (Weight: 3)			
BF Ever Age 0	30%	32%	39%
BF Ever Age 1	63%	76%	72%
BF Now Age 0	63%	62%	54%
BF Now Age 1	29%	20%	21%
Public Benefits Participation (Weight: 2)			
TANF Participation	2%	6%	0%
Medicaid Participation	95%	95%	91%
SNAP Participation	38%	44%	38%
Lowest Monthly Household Income Quartile (Weight: 2)			
Income Quartile, 0th: < \$1,200 per Month	17%	18%	19%
Remaining Monthly Household Income Quartiles (Weight: 1)			
25th: \$1,200 - \$1,731 per Month	30%	24%	24%
50th: \$1,732 - \$2,164 per Month	25%	22%	22%
75th: > \$2,165 per Month	28%	34%	34%
Household Size (Weight: 1)			
HHSIZE1	0%	0%	1%
HHSIZE2	6%	5%	7%
HHSIZE3	25%	21%	26%
HHSIZE4	34%	33%	34%
HHSIZE5	21%	23%	22%
HHSIZE6	9%	11%	6%
Race + Ethnicity (Weight: 1)			

Ethnicity Hispanic	91%	12%	55%
Race White	59%	70%	88%
Race NHPI	8%	1%	0%
Race Black	4%	6%	5%
Race Asian	3%	18%	6%
Race AIAN	32%	5%	3%
Distribution of Child Age at Visit (Weight: 1)			
Child Age at Visit: 0	22%	29%	29%
Child Age at Visit: 1	23%	23%	23%
Child Age at Visit: 2	21%	19%	19%
Child Age at Visit: 3	18%	17%	16%
Child Age at Visit: 4	17%	14%	14%

APPENDIX C – Interviewee Demographics

Table C1. IDI Participants Category

<i>Category</i>	No. of Participants	Percentage
<i>No referral</i>	5	17%
<i>Referred through Unite Us and Enrolled</i>	9	31%
<i>Referred through Unite Us, No Enrollment</i>	10	34%
<i>Shared Info</i>	5	17%
Grand Total	29	100%

Table C2. IDI Participants by Language

<i>Language</i>	No. of Participants	Percentage
<i>Chinese</i>	1	3%
<i>English</i>	13	45%
<i>Spanish</i>	15	52%
Grand Total	29	100%

Table C3. IDI Participants by WIC Center

<i>WIC Center</i>	No. of Participants	Percentage
<i>Corona (Queens)</i>	20	69%
<i>Ocean Avenue (Sheepshead Bay, Brooklyn)</i>	9	31%
Grand Total	29	100%

Table C4. IDI Participants by Months Since the WMTY Conversation

<i>Months Since the WMTY Conversation</i>	No. of Participants	Percentage
<i>0-3</i>	4	14%
<i>4-6</i>	9	31%
<i>7-9</i>	10	34%
<i>10-12</i>	6	21%
Grand Total	29	100%

Table C5. IDI Participants by Child Age group

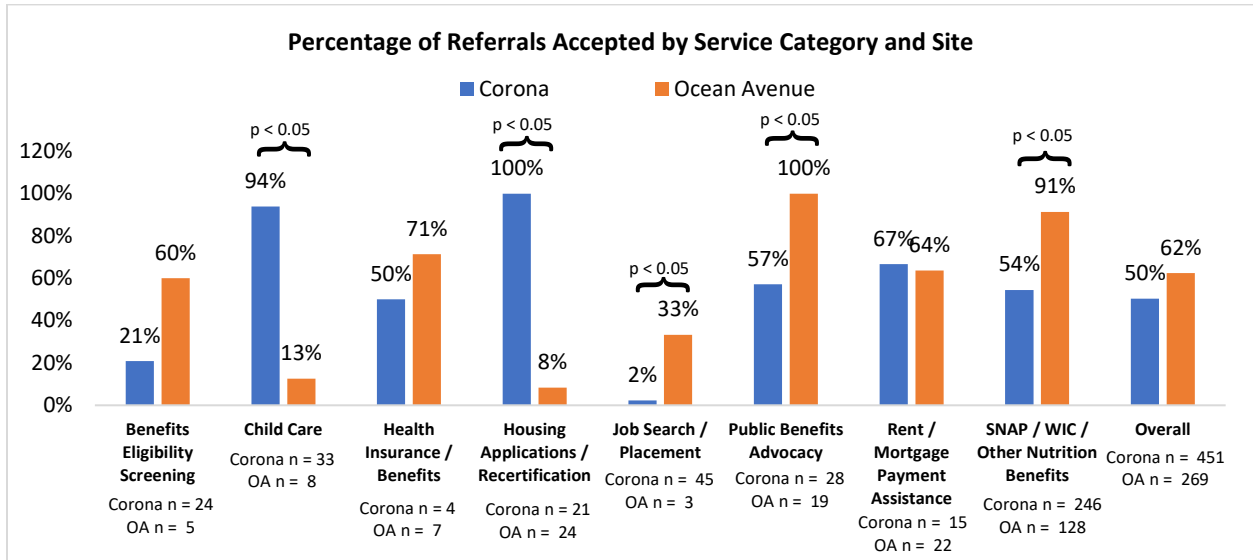
<i>Child Age group</i>	No. of Participants	Percentage
<i>18-21 Months</i>	18	62%
<i>6-9 Months</i>	11	38%
Grand Total	29	100%

Table C6. IDI Participants by Service Category

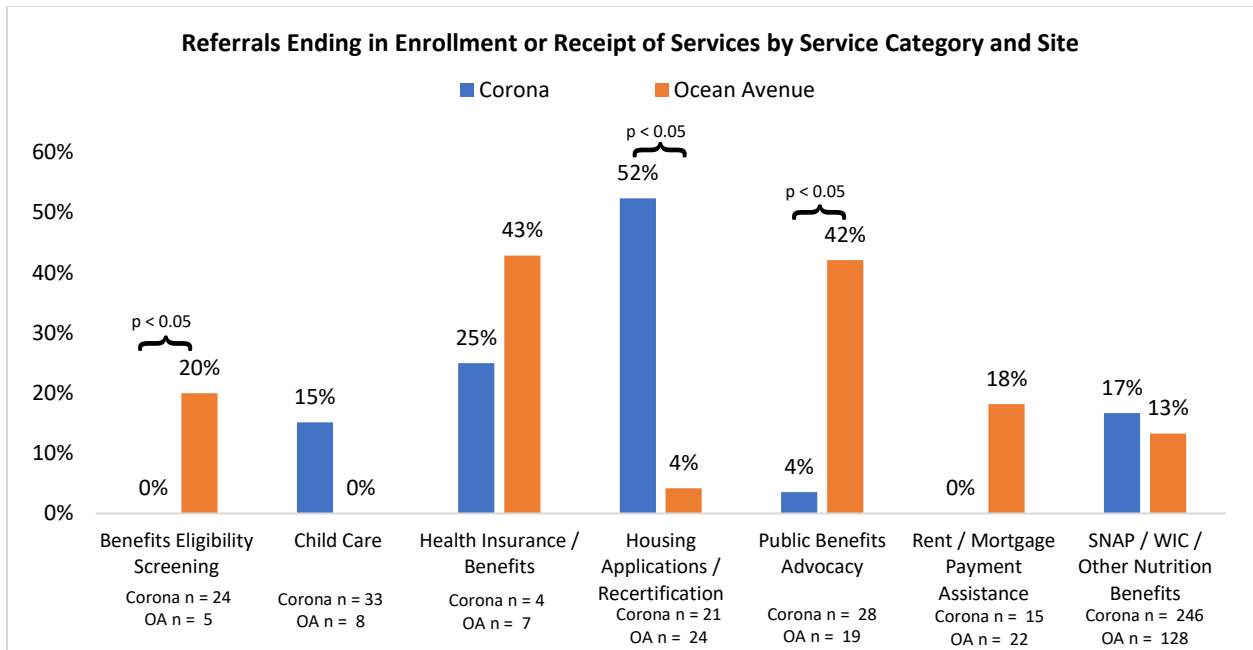
<i>Service Category</i>	No. of Participants*	Percentage
<i>SNAP/Food Assistance</i>	13	42%
<i>Benefit Navigation & Legal</i>	8	26%
<i>Childcare</i>	3	10%
<i>Housing</i>	3	10%
<i>Job search/Placement</i>	2	6%
<i>Supportive Therapies</i>	1	3%
<i>Crisis Intervention</i>	1	3%
Grand Total	31	100%

*7 participants had multiple referrals

APPENDIX D – Referral Acceptance by Service Category and Site



APPENDIX E – Referrals Ending in Enrollment by Service Category and Site



APPENDIX F – Long Term Results

HPRIL Table A.1. Sample sizes at Public Health Solutions Innovation and Comparison Groups: Crude, unweighted

	Overall T1	Overall T2	Infants T1	Infants T2	Children T1	Children T2
Innovation	2,920	2,627	1,582	1,497	1,393	1,159
Comparison	2,397	2,245	1,418	1,327	1,044	955
Innovation subset (0-21 months)	2,920	2,627	1,560	1,482	1,360	1,145
Comparison subset	2,397	2,245	1,377	1,304	1,020	941

HPRIL Table A.2. Absolute Standardized Differences (ASDs) for Model A1 for infants and children separately (in the PHS subset: infants and children 0-21 months)

Infants: Unweighted	Mean	Standard Deviation	Mean	Standard Deviation	Difference in Standard Deviations	Absolute Value of Difference
	Innovation at T1		Innovation at T2			
Twin Status: Multiple	0.0359	0.1861	0.0445	0.2063	-0.0440	0.0440
Race: American Indian/Alaska Native	0.0276	0.1638	0.0277	0.1641	-0.0006	0.0006
Race: Asian	0.0833	0.2765	0.1174	0.3220	-0.1135	0.1135
Race: Black	0.0564	0.2308	0.0709	0.2567	-0.0592	0.0592
Race: Native Hawaiian/Pacific Islander	0.0058	0.0758	0.0081	0.0896	-0.0280	0.0280
Race: White	0.8353	0.3711	0.7895	0.4078	0.1174	0.1174
Hispanic	0.5154	0.4999	0.4733	0.4995	0.0842	0.0842
Multiracial	0.0083	0.0909	0.0142	0.1183	-0.0554	0.0554
Primary language other than English	0.6718	0.4697	0.6147	0.4868	0.1193	0.1193
Ever Breastfed	0.8963	0.3049	0.8357	0.3707	0.1786	0.1786
Number in WIC	0.9083	0.2886	0.8671	0.3396	0.1309	0.1309
Mean Absolute Standardized Difference						0.0847
	Innovation at T1		Comparison at T1			
Twin Status: Multiple	0.0359	0.1861	0.0341	0.1816	0.0096	0.0096
Race: American Indian/Alaska Native	0.0276	0.1638	0.2019	0.4016	-0.5685	0.5685
Race: Asian	0.0833	0.2765	0.1431	0.3503	-0.1893	0.1893
Race: Black	0.0564	0.2308	0.2912	0.4545	-0.6515	0.6515
Race: Native Hawaiian/Pacific Islander	0.0058	0.0758	0.0516	0.2212	-0.2769	0.2769
Race: White	0.8353	0.3711	0.3268	0.4692	1.2020	1.2020
Hispanic	0.5154	0.4999	0.3922	0.4884	0.2493	0.2493

Multiracial	0.0083	0.0909	0.0145	0.1197	-0.0582	0.0582
Primary language other than English	0.6718	0.4697	0.4430	0.4969	0.4732	0.4732
Ever Breastfed	0.8963	0.3049	0.9407	0.2363	-0.1625	0.1625
Number in WIC	0.9083	0.2886	0.8686	0.3380	0.1266	0.1266
Average Standardized Absolute Mean Difference						0.3607
	Innovation at T1		Comparison at T2			
Twin Status: Multiple	0.0359	0.1861	0.0307	0.1725	0.0291	0.0291
Race: American Indian/Alaska Native	0.0276	0.1638	0.1679	0.3740	-0.4863	0.4863
Race: Asian	0.0833	0.2765	0.1495	0.3568	-0.2074	0.2074
Race: Black	0.0564	0.2308	0.3075	0.4616	-0.6881	0.6881
Race: Native Hawaiian/Pacific Islander	0.0058	0.0758	0.0460	0.2096	-0.2554	0.2554
Race: White	0.8353	0.3711	0.3428	0.4748	1.1557	1.1557
Hispanic	0.5154	0.4999	0.4103	0.4921	0.2119	0.2119
Multiracial	0.0083	0.0909	0.0138	0.1167	-0.0523	0.0523
Primary language other than English	0.6718	0.4697	0.4433	0.4970	0.4727	0.4727
Ever Breastfed	0.8963	0.3049	0.9075	0.2899	-0.0374	0.0374
Number in WIC	0.9083	0.2886	0.8627	0.3443	0.1436	0.1436
Average Standardized Absolute Mean Difference						0.3400
Infants: Weighted						
	Mean	Standard Deviation	Mean	Standard Deviation	Difference in Standard Deviations	Absolute Value of Difference
	Innovation at T1		Innovation at T2			
Twin Status: Multiple	0.0359	0.1861	0.0363	0.1870	-0.0020	0.0020
Race: American Indian/Alaska Native	0.0276	0.1638	0.0276	0.1639	-0.0002	0.0002
Race: Asian	0.0833	0.2765	0.0790	0.2698	0.0160	0.0160
Race: Black	0.0564	0.2308	0.0575	0.2328	-0.0046	0.0046
Race: Native Hawaiian/Pacific Islander	0.0058	0.0758	0.0080	0.0894	-0.0275	0.0275
Race: White	0.8353	0.3711	0.8395	0.3672	-0.0114	0.0114
Hispanic	0.5154	0.4999	0.5235	0.4996	-0.0162	0.0162
Multiracial	0.0083	0.0909	0.0116	0.1069	-0.0325	0.0325
Primary language other than English	0.6718	0.4697	0.6757	0.4683	-0.0084	0.0084
Ever Breastfed	0.8963	0.3049	0.8955	0.3060	0.0027	0.0027
Number in WIC	0.9083	0.2886	0.9048	0.2936	0.0122	0.0122
Average Standardized Absolute Mean Difference						0.0122

	Innovation at T1		Comparison at T1			
Twin Status: Multiple	0.0359	0.1861	0.0452	0.2077	-0.0469	0.0469
Race: American Indian/Alaska Native	0.0276	0.1638	0.0339	0.1811	-0.0368	0.0368
Race: Asian	0.0833	0.2765	0.0956	0.2941	-0.0429	0.0429
Race: Black	0.0564	0.2308	0.0605	0.2384	-0.0173	0.0173
Race: Native Hawaiian/Pacific Islander	0.0058	0.0758	0.0087	0.0928	-0.0343	0.0343
Race: White	0.8353	0.3711	0.8144	0.3889	0.0549	0.0549
Hispanic	0.5154	0.4999	0.4767	0.4996	0.0773	0.0773
Multiracial	0.0083	0.0909	0.0130	0.1134	-0.0456	0.0456
Primary language other than English	0.6718	0.4697	0.6225	0.4849	0.1033	0.1033
Ever Breastfed	0.8963	0.3049	0.9198	0.2717	-0.0814	0.0814
Number in WIC	0.9083	0.2886	0.9100	0.2863	-0.0057	0.0057
Average Standardized Absolute Mean Difference						0.0497
	Innovation at T1		Comparison at T2			
Twin Status: Multiple	0.0359	0.1861	0.0406	0.1975	-0.0246	0.0246
Race: American Indian/Alaska Native	0.0276	0.1638	0.0320	0.1760	-0.0260	0.0260
Race: Asian	0.0833	0.2765	0.0930	0.2906	-0.0342	0.0342
Race: Black	0.0564	0.2308	0.0583	0.2344	-0.0081	0.0081
Race: Native Hawaiian/Pacific Islander	0.0058	0.0758	0.0092	0.0956	-0.0401	0.0401
Race: White	0.8353	0.3711	0.8189	0.3852	0.0432	0.0432
Hispanic	0.5154	0.4999	0.4718	0.4994	0.0871	0.0871
Multiracial	0.0083	0.0909	0.0114	0.1064	-0.0314	0.0314
Primary language other than English	0.6718	0.4697	0.6167	0.4864	0.1151	0.1151
Ever Breastfed	0.8963	0.3049	0.8999	0.3003	-0.0117	0.0117
Number in WIC	0.9083	0.2886	0.9097	0.2867	-0.0047	0.0047
Average Standardized Absolute Mean Difference						0.0388
Children: Unweighted						
	Mean	Standard Deviation	Mean	Standard Deviation	Difference in Standard Deviations	Absolute Value of Difference
	Innovation at T1		Innovation at T2			
Twin Status: Multiple	0.0221	0.1469	0.0349	0.1837	-0.0774	0.0774
Race: American Indian/Alaska Native	0.0647	0.2461	0.0245	0.1545	0.1959	0.1959
Race: Asian	0.0794	0.2705	0.0961	0.2948	-0.0589	0.0589
Race: Black	0.0426	0.2021	0.0664	0.2490	-0.1046	0.1046

Race: Native Hawaiian/Pacific Islander	0.0044	0.0663	0.0061	0.0780	-0.0235	0.0235
Race: White	0.8206	0.3838	0.8131	0.3900	0.0194	0.0194
Hispanic	0.6103	0.4879	0.5424	0.4984	0.1378	0.1378
Multiracial	0.0118	0.1079	0.0061	0.0780	0.0600	0.0600
Primary language other than English	0.7441	0.4365	0.6891	0.4631	0.1223	0.1223
Ever Breastfed	0.9034	0.2955	0.8875	0.3161	0.0519	0.0519
Number in WIC	0.3838	0.4865	0.4279	0.4950	-0.0899	0.0899
Average Standardized Absolute Mean Difference						0.0856
	Innovation at T1		Comparison at T1			
Twin Status: Multiple	0.0221	0.1469	0.0431	0.2033	-0.1189	0.1189
Race: American Indian/Alaska Native	0.0647	0.2461	0.2235	0.4168	-0.4640	0.4640
Race: Asian	0.0794	0.2705	0.1618	0.3684	-0.2548	0.2548
Race: Black	0.0426	0.2021	0.2333	0.4232	-0.5750	0.5750
Race: Native Hawaiian/Pacific Islander	0.0044	0.0663	0.0235	0.1517	-0.1634	0.1634
Race: White	0.8206	0.3838	0.3657	0.4819	1.0443	1.0443
Hispanic	0.6103	0.4879	0.3882	0.4876	0.4553	0.4553
Multiracial	0.0118	0.1079	0.0078	0.0883	0.0398	0.0398
Primary language other than English	0.7441	0.4365	0.5294	0.4994	0.4578	0.4578
Ever Breastfed	0.9034	0.2955	0.8823	0.3224	0.0682	0.0682
Number in WIC	0.3838	0.4865	0.3931	0.4887	-0.0191	0.0191
Average Standardized Absolute Mean Difference						0.3328
	Innovation at T1		Comparison at T2			
Twin Status: Multiple	0.0221	0.1469	0.0319	0.1758	-0.0606	0.0606
Race: American Indian/Alaska Native	0.0647	0.2461	0.2147	0.4108	-0.4429	0.4429
Race: Asian	0.0794	0.2705	0.1690	0.3749	-0.2740	0.2740
Race: Black	0.0426	0.2021	0.2678	0.4430	-0.6539	0.6539
Race: Native Hawaiian/Pacific Islander	0.0044	0.0663	0.0436	0.2042	-0.2579	0.2579
Race: White	0.8206	0.3838	0.3241	0.4683	1.1595	1.1595
Hispanic	0.6103	0.4879	0.4368	0.4962	0.3526	0.3526
Multiracial	0.0118	0.1079	0.0191	0.1370	-0.0597	0.0597
Primary language other than English	0.7441	0.4365	0.5112	0.5001	0.4963	0.4963
Ever Breastfed	0.9034	0.2955	0.9293	0.2565	-0.0935	0.0935
Number in WIC	0.3838	0.4865	0.3943	0.4890	-0.0214	0.0214
Average Standardized Absolute Mean Difference						0.3520

Children: Weighted						
	Mean	Standard Deviation	Mean	Standard Deviation	Difference in Standard Deviations	Absolute Value of Difference
	Innovation at T1		Innovation at T2			
Twin Status: Multiple	0.0221	0.1469	0.0229	0.1497	-0.0058	0.0058
Race: American Indian/Alaska Native	0.0647	0.2461	0.0613	0.2399	0.0142	0.0142
Race: Asian	0.0794	0.2705	0.0769	0.2665	0.0095	0.0095
Race: Black	0.0426	0.2021	0.0435	0.2041	-0.0043	0.0043
Race: Native Hawaiian/Pacific Islander	0.0044	0.0663	0.0071	0.0839	-0.0353	0.0353
Race: White	0.8206	0.3838	0.8204	0.3840	0.0004	0.0004
Hispanic	0.6103	0.4879	0.6116	0.4876	-0.0028	0.0028
Multiracial	0.0118	0.1079	0.0092	0.0954	0.0254	0.0254
Primary language other than English	0.7441	0.4365	0.7407	0.4384	0.0078	0.0078
Ever Breastfed	0.9034	0.2955	0.8984	0.3022	0.0166	0.0166
Participates in TANF	0.3838	0.4865	0.3914	0.4883	-0.0156	0.0156
Average Standardized Absolute Mean Difference						0.0125
	Innovation at T1		Comparison at T1			
Twin Status: Multiple	0.0221	0.1469	0.0215	0.1450	0.0041	0.0041
Race: American Indian/Alaska Native	0.0647	0.2461	0.0691	0.2538	-0.0177	0.0177
Race: Asian	0.0794	0.2705	0.0865	0.2813	-0.0258	0.0258
Race: Black	0.0426	0.2021	0.0410	0.1983	0.0084	0.0084
Race: Native Hawaiian/Pacific Islander	0.0044	0.0663	0.0053	0.0723	-0.0122	0.0122
Race: White	0.8206	0.3838	0.8114	0.3913	0.0236	0.0236
Hispanic	0.6103	0.4879	0.5924	0.4916	0.0366	0.0366
Multiracial	0.0118	0.1079	0.0133	0.1147	-0.0141	0.0141
Primary language other than English	0.7441	0.4365	0.6979	0.4594	0.1030	0.1030
Ever Breastfed	0.9034	0.2955	0.9157	0.2780	-0.0428	0.0428
Number in WIC	0.3838	0.4865	0.3850	0.4868	-0.0025	0.0025
Average Standardized Absolute Mean Difference						0.0264
	Innovation at T1		Comparison at T2			
Twin Status: Multiple	0.0221	0.1469	0.0282	0.1656	-0.0393	0.0393
Race: American Indian/Alaska Native	0.0647	0.2461	0.0806	0.2723	-0.0611	0.0611
Race: Asian	0.0794	0.2705	0.0909	0.2877	-0.0412	0.0412
Race: Black	0.0426	0.2021	0.0496	0.2173	-0.0332	0.0332

Race: Native Hawaiian/Pacific Islander	0.0044	0.0663	0.0059	0.0764	-0.0203	0.0203
Race: White	0.8206	0.3838	0.7932	0.4052	0.0693	0.0693
Hispanic	0.6103	0.4879	0.5353	0.4990	0.1521	0.1521
Multiracial	0.0118	0.1079	0.0202	0.1407	-0.0672	0.0672
Primary language other than English	0.7441	0.4365	0.6644	0.4724	0.1752	0.1752
Ever Breastfed	0.9034	0.2955	0.9022	0.2972	0.0040	0.0040
Number in WIC	0.3838	0.4865	0.4229	0.4943	-0.0797	0.0797
Average Standardized Absolute Mean Difference						0.0675

HPRIL Table A.2. Sample sizes for DID analyses in Public Health Solutions Innovation and Comparison Groups (Subset)

	Overall	Infants	Children
Crude, unweighted – Recert	10,189	5,723	4,466
Crude, unweighted – Retention	10,189	5,723	4,466
Crude, unweighted – Benefit issuance	10,189	5,723	4,466
Recertification Model A1	10,114	5,676	4,438
Recertification Model A2	10,131	5,686	4,445
Retention Model A1	10,114	5,676	4,438
Retention Model A2	10,131	5,686	4,445
Benefit issuance Model A1	10,114	5,676	4,438
Benefit issuance Model A2	10,131	5,686	4,445