WIC Special Project Innovation Grant

Pennsylvania WIC & West Virginia Women, Infants and Children

Final Report to the U.S. Department of Agriculture Food and Nutrition Service

2019 - 2022 WIC Special Project Innovation Grant

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Table of Contents

Executive Summary

Introduction and Background

Pennsylvania (PA) Department of Health (DOH), Special Supplemental Program for Women, Infants and Children (WIC) and West Virginia (WV), Department of Health and Human Resources (DHHR) proposed implementing technology to administer participant support more expeditiously by accessing participant medical data electronically and by utilizing a participant portal for receipt of certification documentation.

Many communities within the WIC target population face challenges associated with accessing healthcare and related services such as transportation and appointment scheduling limitations. The major barriers to experiencing an efficient certification appointment were transportation, appointment logistics and long wait times for initial certification appointments.

In Pennsylvania, the project focused on certification appointments for pregnant and breastfeeding participants.

This grant project focused on increasing the efficiency of the certification process as well as on increasing the applicant and provider WIC awareness and referral/certification satisfaction.

The main component of the grant project reduced the time for in-person certification by local WIC agency staff by implementing a participant document submission and health care provider referral portal.

Project Overview

PA WIC's goal was to improve relationships between WIC and Primary Care Providers. This goal was accomplished by utilizing Medical Liaisons to enhance program outreach to PCPS.

The certification process was enhanced by utilizing referral data from PCPs to streamline the certification process and decrease the frequency of which anthropometric and hemoglobin measurements would need to be completed in the WIC clinic.

The project timeline began with a Medical Liaison training on December 2, 2021, which lead into the project and data collection activities spanning from January 3, 2022, through September 30, 2022.

Key Findings

Over the grant period, 2,308 anthropometrical measurements and hemoglobin tests were not performed in the clinic because the PCP provided this information to the agencies.

It is likely there were other factors besides outreach efforts that influenced the number of first-time certification appointment referrals from a PCP.

Staff generally felt that the data provided by the PCPs was easy to use and made certification appointments more efficient. However, the process for outreach with PCPs was not streamlined and overall, only about half were satisfied with the process for connecting with PCPs and using their referral data.

Medical Liaisons attempted to reach PCPs 572 times over the course of the grant period, and only 28% of those times they were unable to meet nor provide training materials to PCPs.

Generally, PCPs were satisfied with the process for referring patients to WIC and PA WIC's outreach around referrals. However, they were relatively less satisfied with the process for providing patients' recent height, weight, and hemoglobin data to WIC and PA WIC's outreach efforts around this process.

Following ML outreach, PCPs referred 17% of all first-time certification appointments (n=821), and 21% of first-time certification appointments for pregnant and breastfeeding women (n=663). The proportion of first-time referrals for pregnant and breastfeeding women remained stable throughout the grant period.

Usable anthropometrical data was provided from PCP for 23% of WIC-eligible participants (n=1771), and usable hemoglobin data was provided for 7% of WIC-eligible participants (n=537).

Project Conclusions and Lessons Learned

As PA was working on this project, there were many lessons learned along the way. PA first learned that it is important to understand the project protocols and parameters before applying.

The second lesson learned, although inevitable with constant turnover, was that consistent leadership throughout the project would have eliminated implementation and communication difficulties and barriers with getting the project off the ground.

The third lesson learned is that it is important to have agreements executed at the start of the project to assure consistency and understand expectations throughout the project.

As PA was working on this project, there were several best practices identified. First, PA WIC recommends that, from the start, all required subject matter experts are part of the team to help develop the application.

The second-best practice PA recommends is procuring and having staff familiar with using a secure document portal before the start of the grant period.

The third best practice PA recommends is to hire existing WIC staff as MLs.

Looking back and to make this project more successful, it would have been beneficial to request more input from local agencies, especially regarding the targeted audience.

Additionally, the PHE also impacted the outcome of the project. The PHE was unpredictable and played a large part in requiring states to revise initial parameters and procedures dictated as part of this grant.

Lastly, it would have been beneficial to have all outreach materials developed and available prior to the start of the grant period.

This project was supported by the U.S. Department of Agriculture, Food, and Nutrition Service (USDA, FNS)

SECTION 1: INTRODUCTION

1.1 Background

Pennsylvania (PA) Department of Health (DOH), Special Supplemental Program for Women, Infants and Children (WIC) and West Virginia (WV), Department of Health and Human Resources (DHHR) proposed implementing technology to administer participant support more expeditiously by accessing participant medical data electronically and by utilizing a participant portal for receipt of certification documentation.

As a consortium, PA and WV provided WIC services at 260 WIC clinic locations spanning across 70,285 square miles. Data from the PA DOH Division of Health Informatics indicated approximately 68% of the state's eligible target population received WIC services in 2017, while data from WV DHHR Health Statistics Center indicated approximately 68% of the state's eligible population received WIC services in 2015. According to the 2014 WIC Coverage Rates by State (fns.usda.gov), the coverage rate for the state of PA was 51.9% and the coverage rate for WV was also 51.9%.

Many communities within the WIC target population face challenges associated with accessing healthcare and related services such as transportation and appointment scheduling limitations. For this reason, it was crucial that PA and WV WIC services reach these communities. In reviewing health information exchange membership data, 39 out of the 67 counties in PA had fifty percent or less licensed hospital memberships with one of the six regional Health Information Organizations (HIO). Most of these are identified as rural, less populated counties. Suburban and urban communities face challenges as well with long durations of appointments.

The routine certification process in PA WIC, which is similar to WV's certification process, consisted of the applicant calling the local WIC agency to schedule an initial appointment. Applicants had to wait several days to a few weeks for an opening in the schedule. Applicants were made aware of the required documents that is needed at the time of appointment such as proof of ID, proof of income, proof of residency, proof of pregnancy (if applicable), referral data (if applicable) and formula authorization forms (if applicable). When the applicant came in for the appointment, they had to check in with the front desk staff and were taken to an exam room within 15 minutes, ideally. Once the applicant was in the exam room, a nutritionist would complete necessary lab work, complete the assessment, load the benefit card and schedule the next appointment. The complete initial certification appointment typically ranged from 45 minutes to one hour.

This grant project focused on increasing the efficiency of the certification process as well as on increasing the applicant and provider WIC awareness and referral/certification satisfaction. The major barriers to experiencing an efficient certification appointment were transportation, appointment logistics and long wait times for initial certification appointments. The main component of the grant project reduced the time for in-person certification by local WIC agency staff by implementing a participant document submission and health care provider referral portal.

PA WIC and WV DHHR pursued access to the PA Department of Human Services' (DHS) HIE network, or PA Patient & Provider Network (P3N) and the West Virginia Health Information Network (HIN), respectively. The HIE and HIN provided local WIC agency WIC nutritionists a safe, secure and reliable pathway for accessing clinical data needed to pre-screen nutritional status as well as provided consistent and coordinated participant-centered care and follow-up services. As a result of this partnership, local WIC agency nutritionists had a vital avenue to access required health and medical data (i.e., anthropometrics, growth charts, and hemoglobin values) required for nutrition assessments, determination of risk factors and food packages in advance of the initial certification appointment, thereby expediting the certification process. The participant document portal allowed for submission and pre-review of documents by applicants and participants, as well as health care providers, decreasing the amount of paperwork required to be reviewed at the initial certification appointment.

As described above, two enhancement opportunities were employed to impact the certification process and customer service experience:

- Enhancement Opportunity 1: Adopt policies, practices, and/or technologies that enable participants to initiate and complete allowable portions of certification procedures online.
- Enhancement Opportunity 4: WIC agency led innovative strategies to improve the WIC certification process that are not captured by Enhancement Opportunities 1-3.

It should be noted that WV WIC was able to obtain access to their HIE for the purpose of the grant, but due to time constraints and barriers encountered, PA WIC could not execute access to the PA Health Information Exchange (P3N). Ultimately PA decided to utilize Medical Liaisons to improve PCP relationships and increase referrals to WIC.

1.2 Goals and Objectives

1) Streamline Certification Process: During this project period, the Certification Process was intended to be streamlined by having access to electronic medical information prior to the appointment. Additionally, documentation such as proof of income was to be pre-verified using the document sharing portal. These process changes were proposed to decrease the amount of time required for a certification appointment.

2) Improve relationships between WIC and PCPs: During this project period, the medical liaisons were intended to maintain/establish relationships with PCPs in order to educate on the WIC program, the HIE in Pennsylvania or HIN in West Virginia, and outline the benefit to their programs. It was hypothesized that the more PCPs participating in the HIE/HIN, the more electronic medical data that would be available for pre-certification review.

3) Reduce redundancy of tasks, barriers and overall cost: During this project period, the need to take anthropometrics in the clinic was intended to be reduced due to the access to the health information exchange. It was thought that participants would also not feel as if they were having to get basic health screenings at their physician as well as at the local WIC agency. This would cut down on the amount of supplies needed on a clinic level and ultimately decrease the overall cost. Similarly, documentation required for the certification appointment was to be provided

prior to the appointment and errors or questions will be corrected and addressed before the in-person appointment. This alone was to prevent individuals from being asked to return at another time to bring required documentation or to provide accurate documentation.

4) Increase WIC applicant/participant and physician awareness of WIC: During this project period, this grant project was to provide an enhanced level of outreach regarding the availability of the WIC programs in PA and WV. It was thought to increase the participant's continuity of care and the physician's understanding of WIC.

5) Increase WIC applicant/participant and physician awareness of WIC: During this project period, streamlining the initial certification process for WIC applicants and making it easier for applicants, participants, and PCPs to provide WIC-relevant documents via a participant portal was expected to increase overall satisfaction with the WIC program among these groups.

6) Continuing to implement technology into WIC service provision: During this project period, remaining on pace with changes in healthcare technology and service delivery would ensure WIC services as a relevant part of the medical home. Furthermore, millennials and Gen Z mothers were understood to have a reliance, preference and expectation for technology.

SECTION 2: PROJECT IMPLEMENTATION

2.1 Project Timeline

All Medical Liaisons received training prior to the start of the grant period on December 2, 2021. The training was recorded so that anyone who could not attend could view the training at a later date.

Pennsylvania WIC provided training on the following topics:

- Development and training on clinical nutrition outreach protocol in the medical community and marketing materials to be used (Stickers, Fast Fact Sheet, Physician packet, etc.)
- SOP for processing participants and completion of tracking documents
- Collection and submission of data (MIS, tracking forms, SharePoint, etc.)

Local Agencies' training included but not limited to:

- PA PENN MIS training
- CPA training (if appropriate)
- Required trainings for new employees

The project grant period and data collection activities spanned from January 3, 2022, through September 30, 2022.

2.2 Key Actions Taken to Implement Project

As was previously mentioned, PA WIC's goal was to improve relationships between WIC and Primary Care Providers. This goal was accomplished by utilizing Medical Liaisons to enhance program outreach to PCPS with the goal of:

- Increasing WIC program participation through PCPs referring their patients to WIC.

- Increasing referral data from PCPs such as anthropometric and hemoglobin data.

PA enhanced the certification process by:

- Utilizing referral data from PCPs to streamline the certification process and reduce appointment time.
- Decreasing the frequency of which anthropometrics and hemoglobin values would need to be completed in the WIC clinic.

PA hired 12 Medical Liaison positions within the 12 participating local agencies. The Medical Liaison had to be a minimum of a CPA/Nutritionist so they could assist with processing targeted participants. The positions were funded through the end of the grant period, which was September 30, 2022.

Some of the Medical Liaison job requirements were as follows:

- Develop and maintain ongoing relationships with PCPs.
- Present WIC Program benefits to groups and/or individuals using verbal, visual and written formats.
- Track and maintain a record of all activities and contacts.
- Utilize tracking and evaluation tools to analyze the effectiveness of all activities.
- Upload reporting forms/tracking documents to SharePoint on a monthly basis.
- Attend bi-weekly virtual Innovation Grant Medical Liaison Workgroup Meetings.
- Perform the duties of a WIC Nutritionist as needed to process grant participants.
- Perform other job-related duties as assigned by supervisor(s).

Pennsylvania took several steps to maintain consistency throughout the project.

- State Agency developed SOPs and trained on various aspects to assure consistency with processing grant participants.
- State Agency directed grant participants to websites with relevant information on OB/GYN offices.
- Weekly meetings to keep grant participants informed of status of the grant, as well as discuss and resolve issues.
- Meeting minutes and recordings forwarded to all participating local agencies to assure all were informed.
- Feedback from local agencies to assure “Buy In” throughout the grant and that goals were realistic.

Outreach materials were developed to aid in the promotion of the WIC program. The Physician’s Packet is a folder that medical liaisons provided to PCPs as part of their outreach efforts. The packet provided a detailed overview of the Pennsylvania WIC Program and included information on: WIC Facts, Eligibility and Applying for WIC, Benefits and Services, Nutrition Services, Breastfeeding Promotion and Support, Health Outcomes and Research, Frequently Asked Questions, Advancing WIC Services (future of WIC), and Pennsylvania Local WIC Agencies and their contact information.

In the pockets of the folder, PA included sticker labels, referral forms, income guidelines, Fast Facts Sheet and any pertinent local agency information that they wished to include. The folder also included a place for the medical liaison to include their business card.

2.3 Project Budget and Expenses

Pennsylvania WIC and West Virginia WIC were selected for funding for the WIC Special Project Innovation Grant for a total award amount of $2,000,000. As of the date of submission for this final report, the total cost of implementing this project was $741,469.97. Of these costs, $70,629 was spent by West Virginia and the remaining $670,840.97 was spent by local agency grantees in Pennsylvania.

Most expenses from Pennsylvania were personnel and fringe benefits from local agency employment of medical liaisons.

Several proposed interventions (e.g., costs to connect to the health information exchange and to develop a participant portal) were never realized which resulted in fewer project expenses overall.

2.4 Project Transferability

For other WIC programs across the country, access to the HIE could be a sustainable avenue to acquire relevant Protected Health Information (PHI). The possible use of an Authorization for Release of Health Information document signed by the participant via a secure document portal could provide an avenue to gain access. However, until access is obtained, the continued use of outreach resources developed for this project are inexpensive and sustainable tools. The use of referral forms resulted in an increase in referrals for 26 participating WIC clinics, and for this reason they will continue to be utilized to facilitate and increase referrals.

The Physician Packets developed for PCPs was an effective educational tool explaining WIC resources and are sustainable for continued use.

Finally, most Local Agencies were not able to sustain the Medical Liaison position, specifically for outreach, due to lack of continued funding and ongoing staff shortages. However, since PA WIC took more of an outreach approach to improving relationships with physicians while increasing their awareness of WIC, local agency Outreach Coordinator positions offer more flexibility and therefore can continue to provide outreach to build upon PCP relationships.
The first best practice PA WIC recommends is that, from the start, all required subject matter experts are part of the team to help develop the application. In addition to State Agency WIC staff, it is important to include IT, the Office of Legal Counsel, Procurement, and local agencies for vital input. This ensures the project includes the necessary components to be successful.
The second-best practice PA recommends is procuring and having staff familiar with using a secure document portal before the start of the grant period. This will help assure WIC HIPPA requirements are maintained throughout the project and provide a way to receive referral information digitally rather than using paper forms. Part of the procurement process would also

include becoming knowledgeable on procurement requirements and understanding the time frames needed to procure the HIE and document portal.

The third best practice PA recommends is to hire or promote existing WIC staff as MLs. This is beneficial because they already understand WIC policies and procedures and only need to be trained on the HIE.

As PA was working on this project, there were many lessons learned along the way. PA first learned that it is important to understand the project protocols and parameters before applying. The success of this project would be enhanced by involving Procurement and the Office of Legal Counsel during the initial application process to eliminate barriers and better understand potential limitations.

The second lesson learned, although inevitable with constant turnover, was that consistent leadership throughout the project would have eliminated implementation and communication difficulties and barriers with getting the project off the ground. For example, it took time to update new staff on the parameters of the project and educate them on extensive research already performed regarding the pursuit of access to the HIE. It also took time for new leadership to understand WIC local agency operations such as applicant processing procedures, anthropometric and hemoglobin requirements and how it would relate to this project.

The third lesson learned is that it is important to have agreements executed at the start of the project to assure consistency and understand expectations throughout the project. Many of the agreements were not executed until well into the grant period, which made the project difficult to navigate and manage.

SECTION 3 EVALUATION DESIGN AND METHODS

3.1. Evaluation Design and Setting

PA WIC's initial certification enhancement innovation involved conducting outreach with local primary care providers (PCP) to promote and provide materials to support increased referrals of potential WIC participants to WIC and sharing PCP-collected anthropometric and hemoglobin data with WIC to reduce redundancies of performing these tasks during WIC initial certification appointments. The focus group of PA WIC's innovation were pregnant and breastfeeding mothers (henceforth, when the term "WIC participants" is used, we are referring to pregnant and breastfeeding WIC participants only).

This was a cross-sectional evaluation study, including both quantitative and qualitative data analysis, guided by the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework. RE-AIM is a program planning and evaluation framework that can be used to determine effectiveness of an initiative, and considers factors associated with external validity such as reach, adoption, implementation, and maintenance of an innovation or intervention. Following this sub-section, the remaining times RE-AIM is used in section/sub-section framing, the order A, I, R, E, and M, will be followed for a more linear description of the findings.

- Reach: breadth and representativeness of the innovation's exposure to a target population.
- Effectiveness: the degree to which the innovation achieved its intended effect(s).

- Adoption: the number of targeted sites/settings/staff that utilized the innovation, and barriers/facilitators.
- Implementation: Consistency, cost, and fidelity of the delivery of the innovation.
- Maintenance: Sustainability (or perceived sustainability) or innovation effects over time.

The final evaluation metrics were developed in an iterative co-design process between PA-WIC and the Gretchen Swanson Center for Nutrition (GSCN). All components of RE-AIM had at least one corresponding metric. Assessing maintenance was beyond the scope of this evaluation, but perceived feasibility of maintenance was assessed qualitatively.

3.2. Data Sources and Measurement Tools

Data was collected from December 2, 2021, to September 30, 2022. Data sources included tracking forms, administrative records, surveys, and interviews. Table A, below, displays the RE-AIM metrics and data sources assessed for this evaluation.

Table A.

RE-AIM Component	Metric	Data Source
Adoption	Proportion of PA local agencies and clinics participating in the innovation	Administrative Records
Implementation	Decrease in anthropometric and hemoglobin measuring tasks being performed by clinic staff	PA Participant Tracking Form
Implementation	Increase in new referrals as outreach activities increase	PA Participant Tracking Form; PA ML Outreach Form
Implementation	Number of PA clinic staff trained on outreach approach	Administrative Records
Implementation	Number of outreach efforts to PCPs by medical liaison	PA ML Outreach Form
Implementation	Satisfaction with referral process	PCP survey
Implementation	Staff satisfaction with innovation	PA WIC Staff survey
Reach	Increased number of new referrals from a PCP during the study period	PA Participant Tracking Form
Reach	Number of participants with usable anthropometric and hemoglobin data from a PCP	PA Participant Tracking Form
Effectiveness	Reported client satisfaction	PA Participant Survey
Maintenance	Number of hired/assigned staff continuing with grant components after grant period ends	Administrative Records

3.2.1. Data Sources

PA Participant Tracking Form. This form was completed by WIC front desk clerks, WIC CPAs, and medical liaisons (ML) daily to track the utilization of anthropometric and hemoglobin

data provided by PCPs and to track referrals of new WIC participants from PCPs. Anthropometric and hemoglobin data was coded if available from PCPs and if usable (i.e., was measured within the last 60 days and 45 days, respectively). These forms were completed at the local agency level monthly and sent to the evaluation team.

PA ML Outreach Form. This form was completed by MLs daily to track outreach attempts by MLs to PCPs. The date, PCP name, success (scheduling a meeting or not) of outreach attempts, the type of outreach (e.g., telephone or in-person), and if outreach materials (e.g., detailed packet explaining WIC, eligibility, and the referral/data sharing process) were provided was tracked. These forms were completed at the local agency level monthly and sent to the evaluation team.

PA Participant Survey. Pregnant or breastfeeding WIC participants that certified or recertified during the study period were sent the online survey the month after certification occurred. The survey asked about demographics, their satisfaction with the certification process, if the appointment was in-person or remote, if they or a child had height, weight, and/or hemoglobin measured during their visit, and if they previously had height, weight, and hemoglobin measured at WIC during a certification appointment prior to March 2020.

WIC Staff survey. This online survey was provided to MLs and other "front line" WIC staff that were responsible for completing the day-to-day tasks related to the innovation such as conducting PCP outreach and reviewing and utilizing data sent by PCPs for certification appointments. The survey asked about their perceptions of, and satisfaction with, the innovation as it related to their duties with WIC.

PCP survey. This online survey was sent to PCPs at least three months following a successful outreach attempt. Three months was chosen because it would give the PCP enough time to implement the recommended referral and data sharing process described during the outreach meeting. The survey asked about the PCPs WIC referral and data sharing activity and satisfaction with and perceptions of that process.

Administrative records. Records were kept tracking the local agencies and clinics that participated in the innovation, WIC staff trained to perform ML duties, and the number of staff hired for the grant and continuing after the grant period.

Staff interviews. PA WIC staff were interviewed about the project. Key insights are included in relevant sections within sections 4 and 5. Formal qualitative analysis and findings are included in the overarching evaluation report that describes findings from all projects included in this Food and Nutrition Service funded initiative.

3.3. Participants and Recruitment

3.3.1. WIC Participants

As mentioned above, the prioritized beneficiaries of PA WIC's innovation were households with pregnant and breastfeeding mothers. This sub population was selected for feasibility (e.g., to limit the pool of participants tracked for data collection purposes) and because this sub-population utilizes PCPs at higher rates than other WIC sub-populations, and so were considered more likely to benefit from the innovation. When WIC participants that met inclusion criteria

attended (virtually or in-person) certification appointments during the grant period, they were sent follow-up survey links for the PA Participant Survey. Those who wished to participate completed the survey. Incentives for survey completion were provided in the form of a gift card raffle. The survey was sent to a total of 5,430 WIC participants with 1,177 clicking the link and completing at least 80% of survey questions. However, 1,177 includes participants who simply said "No" to the question about agreeing to take the survey. Of the 1,177 that clicked the link, 610 completed the survey and were part of our analytic sample. WIC participants also provided data indirectly through the PA Participant Tracking Form described above.

3.3.2. WIC staff

All staff that conducted outreach activities, utilized the PCP-provided data, and/or processed new PCP referrals were asked to complete the WIC Staff survey. A total of 60 surveys were sent and 30 completed at least 80% of the questions. No incentives were provided. MLs also completed the PA ML Outreach Form to document their outreach activities.

3.3.3. PCPs

PCP contact information was collected from PA ML Outreach Forms. Those with emails were sent the survey. A total of 227 surveys were sent and 39 completed at least 80% of the questions.

3.4. Evaluation Variables

3.4.1. Adoption

For adoption, the number and proportion of local agencies and clinics that participated in the innovation was documented.

3.4.2. Implementation

There were several implementation metrics including quantifying reduced anthropometric and hemoglobin measuring tasks being performed by clinic staff, assessing PCP referral rate as related to the number of PCP outreach attempts, the number of WIC staff trained for ML tasks, as well as staff, and PCP satisfaction with the innovation from their perspective regarding the process.

3.4.3. Reach

The primary reach metrics included the number and proportion of new WIC referrals from a PCP during the study period and the number and proportion of WIC participants that had usable anthropometric and hemoglobin data provided by a PCP.

3.4.4. Effectiveness

The primary effectiveness metric was participant satisfaction with in-person clinic visits for certification, comparing those who did not have to perform height, weight, and hemoglobin to those who did.

3.4.5. Maintenance

Maintenance was assessed by documenting the number of staff hired for the grant as well as sustainability following the grant period. Also, during qualitative interviews, leadership described the long-term feasibility of the innovation within PA WIC.

3.5. Analysis Approach

The statistical analyses were largely descriptive including means, counts, proportions, and trends over time. Independent samples t-tests were used to compare satisfaction scores between the group that had measurements taken versus the group that did not (Welch's t-test was used when variances were unequal). Appointment satisfaction metrics (i.e., "staff helpfulness," length of appointment," and "general satisfaction") were scored 1-5 (Strongly disagree/Very dissatisfied = 1 to strongly agree/very satisfied = 5) for perceived staff helpfulness and general satisfaction with their appointment. For length of appointment, scores were 1 for "way too long"/"way too short," 2 for "a little too long"/"a little too short," and 3 for "about right." Using the local agency as the unit of analysis, Spearman's correlation coefficient was assessed to determine if increased new referrals at the local agency level are associated with that local agency's number of outreach attempts.

SECTION 4: PROJECT FINDINGS

4.1. Sample Characteristics

4.1.1. WIC Participants

WIC participants (n=610) who completed an in-person certification appointment during the evaluation period were 28.2 (SD=6.6) years old on average (median = 27, range = 18-90). Approximately two-thirds were pregnant, and one-third were breastfeeding a child under 11-months old. The sample was mostly non-Hispanic white (62.1%) with some representation from other racial-ethnic groups including Latino/Hispanic (12.8%), non-Hispanic black (9.2%), Asian and Middle Eastern (7.4%), multi-racial/-ethnic (7.1%), and tribal/indigenous groups (1.5%). WIC participants' highest educational attainment included bachelor's degrees or higher (15.1%), associates degrees, trade schools, or some college/in-college (29.1%), high school diplomas or equivalent (42.6%), and less than high school education (13.2%).

4.1.2. WIC Staff

WIC Staff were Nutritionists/CPAs/MLs/Breastfeeding Peer Counselors (n=25) and Directors/Supervisors (n=4). Staff had been employed at WIC for less than a year (7%), 1-2 years (28%), 3-5 years (10%), 6-10 years (24%), and over 10 years (31%).

4.1.3. Primary Care Providers

PCP survey respondents were clinical managers/directors/supervisors/coordinators (n=20), non-supervisory physicians/physician assistants/nurse practitioners/nurses/nurse's aides (n=17), and office/clerical staff (n=2). The vast majority (79.5%) of practices reported referring patients to WIC several times a month or more. The remined referred patients to WIC a few times a year to once or twice a month.

4.2. Adoption

A total of 12 local agencies (out of 22) and 42 clinics (out of 226) ultimately participated in the innovation project. Based on staff interviews, the primary reported reason for participating in the innovation project was local agency leadership buy-in to innovation within WIC in general, and projects that may streamline and improve participant and staff experiences. The main reported reason for not participating was limited staffing capacity and bandwidth to take on additional tasks associated with the innovation project.

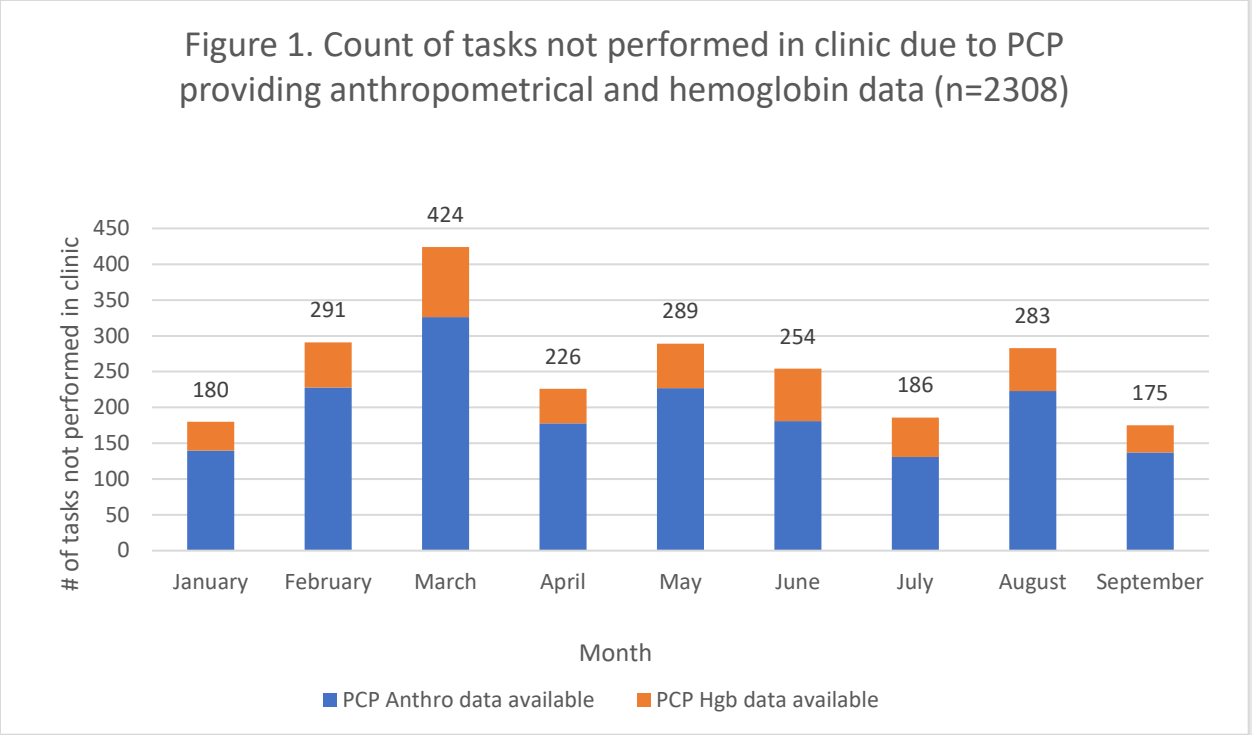
4.3. Implementation

4.3.1. Staff training

There was one staff training held which covered the MLs' role and tasks. There were also recurring ML meetings in which issues that emerged could be troubleshooted.

- Training: HIN issues and tasks (December 2, 2021).
    - Topics: PA 1) ML Outreach Marketing, 2) ML Responsibilities and 3) Data Collection, WIC 101 Resource trainings
    - Attendees: 12 MLs, four CPAs, 3 Directors, one Public Health Nutrition Consultant, one Nutrition Education and Program Manager, one Chief; Planning & Review, one Public Health Program Administrator, one Nutrition Program Manager, four Staff
    - Format: Virtual (and recorded for future staff to view), two hours
    - Challenges: Due to the operational needs of each WIC clinic, not all staff were available for the virtual training on December 2, 2021. For staff who could not attend the virtual training, it was recorded and put on TRAIN so that everyone would receive the mandatory training.
- Recurring ML meetings:
    - Topics: ML/innovation grant troubleshooting
    - Attendees: five Breastfeeding Peer Counselors, one Chief Planning & Review, 45 CPAs, four Directors, two Director/CPAs, 15 MLs, one Nutrition Program Manager, one Senior Manager of Nutrition Services, one Public Health Nutrition Consultant, one Public Health Program Administrator, one Nutrition Education and Program Manager.
    - Format: Virtual (18 meetings), two hours each

4.3.2. Decrease in tasks being performed by clinic staff



Over the grant period, 2,308 anthropometrical measurements and hemoglobin tests were not performed in the clinic because the PCP provided this information to the agencies, as shown above in Figure 1.

4.3.3. Increase in referral data (as outreach increases, referral data increased)

Over the course of the grant, clinics had different rates of success reaching out to PCPs; there were clinics with 100% of successful outreach (i.e., met with PCP) and others met with PCP in 21% of their attempts. There was no correlation between the number of outreach efforts and PCP referrals, as shown in Figures 2, 3 and 4. Thus, it is likely there were other factors besides outreach efforts that influenced the number of first-time certification appointment referrals from a PCP.

Figure 2. Comparison of successful outreach attempts and PCP referrals by local agency (PA WIC, 2022)

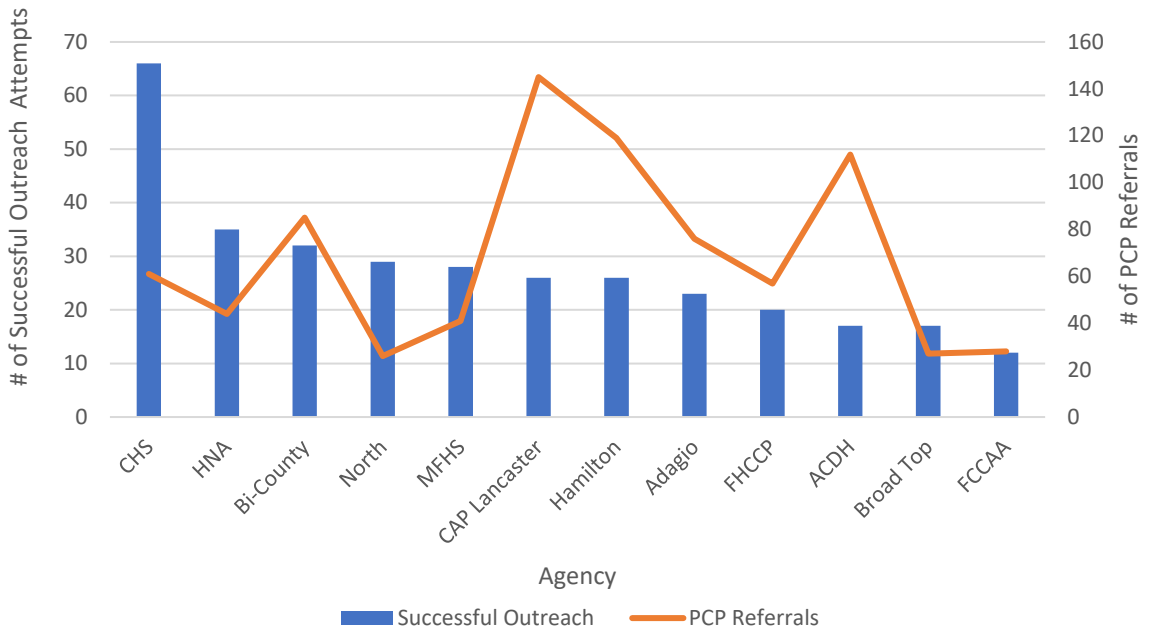
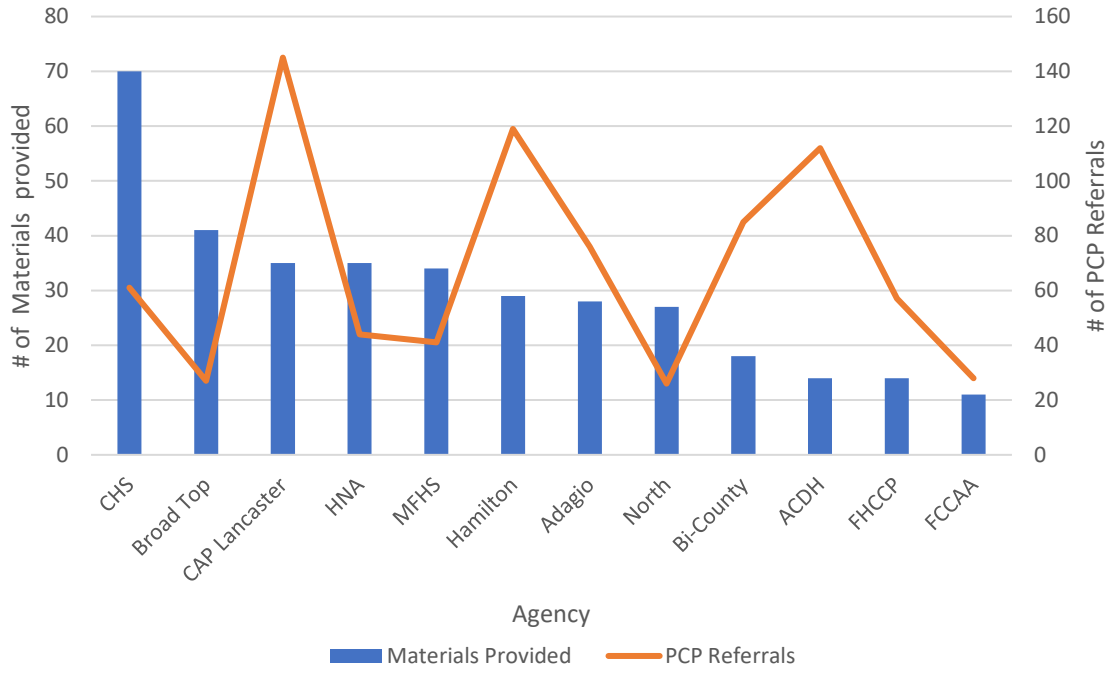
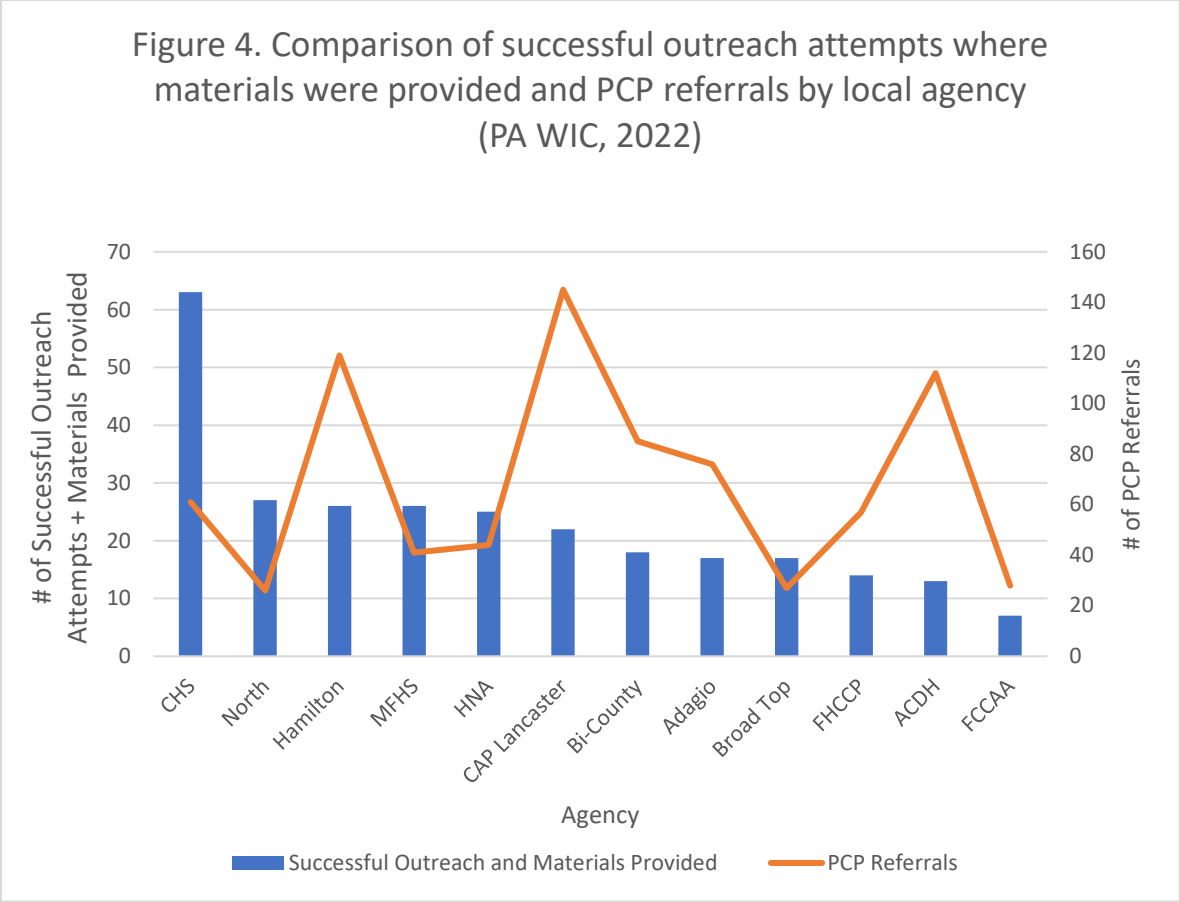


Figure 3. Comparison of providing materials and PCP referrals by local agency (PA WIC, 2022)





4.3.4. Staff satisfaction

Staff who conducted outreach with PCPs and/or utilized referral data from PCPs (n=30) were asked about their satisfaction with the process for connecting with PCPs and using the data they provide for certification appointments.

- "The process for connecting with Primary Care Providers to request medical data for certification appointments is easy and streamlined.": 25% somewhat agreed or strongly agreed (note: 2 of 30 did not provide an answer).
- "The data provided by a WIC participant's Primary Care Provider is easy to use to record medical data for certification appointments.": 70% somewhat agreed or strongly agreed
- "The data provided by a WIC participant's Primary Care Provider makes certification appointments more efficient.": 73% somewhat agreed or strongly agreed
- "Overall, how satisfied were you with the process for connecting with Primary Care Providers and using the data they provide for certification appointments?": 48% were somewhat satisfied or very satisfied (note: 1 of 30 did not provide an answer)

Although the sample is small, it seems staff generally felt that the data provided by the PCPs was easy to use and made certification appointments more efficient. However, the process for outreach with PCPs was not streamlined and overall, only about half were satisfied with the process for connecting with PCPs and using their referral data. The staff were asked for their

recommendations for improvement, and 28 of 30 provided responses. Responses mainly centered around ways to more consistently get accurate data from PCPs.

The current process involves PCPs entering height, weight, and hemoglobin onto a form that is then either faxed to the WIC clinic on request or brought by the WIC participant to their in-person appointment. Staff described that often WIC participants fail to bring the referral forms to their appointment. WIC staff are then required to contact PCPs to have them fax over the forms, which was described as time-consuming. Furthermore, PCPs may not have recently collected height, weight, and or hemoglobin data, so there no current data to send.

Staff recommendations:

- Conduct more outreach with PCPs to get them to understand the importance of the data for WIC and the participants. Institute a single process whereby PCPs routinely collect the height, weight, and hemoglobin data and proactively send it to WIC. This would need more funding and a dedicated role for someone to oversee.
- Use digital approaches to send data. While fax and email can work, staff suggested the referral data by entering directly into PENN/WIC portal, so it is available easily. One specific barrier that was noted was the requirement to enter race and education data into PENN to open a new family ID, which may not be known for new WIC applicants.

4.3.5. Outreach efforts to primary care providers by medical liaison

MLs attempted to reach PCPs 572 times over the course of the grant period, and only 28% of those times they were unable to meet nor provide training materials to PCPs. In almost half of the instances, MLs were able to meet and provide training materials to PCPs (48%). In a few instances they were only able to meet but not provide materials (10%) or vice versa (14%).

Table 3. Count and percentage of outreach efforts to primary care providers by medical liaison (n=572)

Type of outreach effort	n (%)
Meeting and materials provided	275 (48.0%)
Unable to meet nor provide materials	160 (28.0%)
Materials only (no meeting)	81 (14.1%)
Meeting only (no materials provided)	56 (9.9%)

4.3.6. Primary care provider satisfaction with process

The PCP satisfaction survey was sent to practices that had been reached out to as part of this innovation project and had at least three months from the time of outreach to have begun implementing the described WIC referral and data sharing process.

- "How satisfied are you with the current process for referring potentially eligible patients to the WIC program?": 85% were somewhat satisfied or very satisfied, with 0% being dissatisfied.
- "How satisfied are you with Pennsylvania WIC's outreach efforts to promote WIC referrals?": 74% were somewhat satisfied or very satisfied, with 3% being dissatisfied.
- "How satisfied are you with the current process for providing patients' recent height, weight, and hemoglobin data to the WIC program?": 55% were somewhat satisfied or very satisfied, with 14% being dissatisfied.
- "How satisfied are you with Pennsylvania WIC's outreach efforts to collect patients' recent height, weight, and hemoglobin data?": 59% were somewhat satisfied or very satisfied, with 5% dissatisfied.

Generally, PCPs were satisfied with the process for referring patients to WIC and PA WIC's outreach around referrals. However, they were relatively less satisfied with the process for providing patients' recent height, weight, and hemoglobin data to WIC and PA WIC's outreach efforts around this process.

Ten PCP survey respondents who were dissatisfied or neutral provided advice for improvement. The primary piece of advice was to utilize electronic forms instead of paper. Also, PCP survey respondents mentioned they were sometimes unsure of what data potential WIC clients need for appointments, which makes it difficult for them to know how to facilitate the process and communicate with patients about WIC data needs. Also, PCP survey respondents mentioned that they may only run some of the labs at certain timepoints (e.g., prenatally) and so may not collect this data at other time points or might order hemoglobin labs at the time of referral to WIC but there is a lag in time to when the data is available compared to when the referral to WIC is made.

4.4. Reach

4.4.1. Increased number of referrals from primary care providers

Following ML outreach, PCPs referred 17% of all first-time certification appointments (n=821), and 21% of first-time certification appointments for pregnant and breastfeeding women (n=663). The proportion of first-time referrals for pregnant and breastfeeding women remained stable throughout the grant period.

Table 1. Number and percentage of all first-time certification appointment identified as referrals from PCP by month (PA WIC)

All certification categories (n=4128)

Month	PCP Referral	Not an PCP Referral
January	114 (30%)	265 (70%)
February	106 (20%)	421 (80%)
March	137 (19%)	581 (81%)
April	82 (17%)	401 (83%)
May	85 (16%)	441 (84%)
June	73 (14%)	432 (86%)
July	70 (14%)	444 (86%)
August	88 (16%)	478 (84%)
September	66 (12%)	474 (88%)
TOTAL	**821 (17%)**	**3937 (83%)**

Pregnant and breastfeeding women (n=3143)

Month	PCP Referral	Not an PCP Referral
January	94 (33%)	194 (67%)
February	79 (22%)	287 (78%)
March	101 (22%)	365 (78%)
April	74 (25%)	224 (75%)
May	66 (20%)	270 (80%)
June	56 (18%)	261 (82%)
July	59 (17%)	286 (83%)
August	79 (22%)	274 (78%)
September	55 (15%)	319 (85%)
TOTAL	**663 (21%)**	**2480 (79%)**

4.4.2. Participants having anthropometric and hemoglobin data provided from their primary care providers

Usable anthropometrical data was provided from PCP for 23% of WIC-eligible participants (n=1771), and usable hemoglobin data was provided for 7% of WIC-eligible participants (n=537). In a few instances anthropometrical data was provided but it was older than 60 days from the certification and thus not usable (n=19).

Table 2. Count and percentage of participants with anthropometrical data provided by PCP each month (PA WIC, n=7663)

Month	PCP data provided [n (%)]	PCP data not provided [n (%)]	PCP data provided, but not usable [n (%)]
January	140 (19.2%)	581 (79.8%)	7 (0.9%)
February	228 (25.4%)	670 (74.5%)	1 (0.1%)
March	326 (27.0%)	876 (72.6%)	4 (0.3%)

April	178 (22.7%)	605 (77.2%)	1 (0.1%)
May	227 (26.3%)	637 (73.7%)	0 (0.0%)
June	181 (21.5%)	657 (78.2%)	2 (0.2%)
July	131 (18.0%)	593 (81.7%)	2 (0.3%)
August	223 (23.8%)	711 (76.0%)	2 (0.2%)
September	137 (20.1%)	543 (79.9%)	0 (0.0%)
TOTAL	**1771 (23.1%)**	**5873 (76.6%)**	**19 (0.2%)**

4.5. Effectiveness

WIC participants who have HT/WT/Hgb data provided by their primary care provider do not have to complete HT/WT/Hgb measurements in the WIC clinic during their certification appointment. WIC participants (n=610) who completed in-person certification appointments during the evaluation period were asked if they had their own (or their spouse's) height, weight, or hemoglobin (HT/WT/Hgb) measured (47.5% "Yes") or their child's HT/WT/Hgb measured (21.6% "Yes"). For 55.3% of visits, either an adult or child, or both, reported having HT/WT/Hgb measured. We compared metrics of appointment satisfaction (i.e., "staff helpfulness," length of appointment," and "general satisfaction") between the groups that had HT/WT/Hgb measured versus those that did not.

It is important to note that it is not known if all who reported completing an in-person certification appointment without having HT/WT/Hgb measured were able to avoid these measurements because their data was obtained from their PCP. However, from a WIC participant's point of view, the administrative processes that allowed the measurements to be avoided are likely not apparent and the salient element of the appointment that might affect satisfaction between the two groups is undergoing, or not, the HT/WT/Hgb measurements.

Table 3 shows the association between appointment satisfaction metrics and having to undergo HT/WT/Hgb measurement. There were no statistical relationships between undergoing HT/WT/Hgb measurement during a certification appointment and satisfaction with the appointment.

Table 3. Relationship between undergoing height, weight, and/or hemoglobin (HT/WT/Hgb) measurements and appointment satisfaction (n=610)

Variable	**Response**	**N**	**Staff Helpfulness[A]**	**Length of Appointment[B]**	**General Satisfaction[C]**	
Child HT/WT/Hgb Measured	No	478	4.38 (0.88)	2.86 (0.44)	4.60 (0.92)	
Child HT/WT/Hgb Measured	Yes	132	4.45 (0.87)	2.86 (0.41)	4.60 (0.93)	

Adult HT/WT/Hgb Measured	No	320	4.33 (0.95)	2.85 (0.45)	4.56 (0.96)	
Adult HT/WT/Hgb Measured	Yes	290	4.48 (0.79)	2.87 (0.42)	4.64 (0.88)	
Any HT/WT/Hgb Measured	No	273	4.33 (0.96)	2.85 (0.45)	4.55 (0.98)	
Any HT/WT/Hgb Measured	Yes	337	4.45 (0.80)	2.86 (0.42)	4.64 (0.88)	

B: Score range 1-3, 1 = "Way too long" or "Way too short," 2 = "A little too long" or "A little too short," 3 = "About right"
C: Score range 1-5, 1 = "Very dissatisfied" to 5 = "Very satisfied"

4.6. Maintenance

PA WIC will not continue the ML outreach program beyond the grant period because there are not continuing funds to support the effort. They are still interested in ways to increase connections between the medical community and WIC and improve clinical data sharing and continuity of care. They are investigating other opportunities to further such efforts.

SECTION 5: PROJECT CONCLUSIONS AND LESSONS LEARNED

5.1. Conclusions and Next Steps

5.1.1. Opportunities to refine this innovation project or similar innovations

PA WIC goals were to improve Primary Care Physician (PCP) relationships and increase physician awareness of the WIC Program utilizing Medical Liaisons (ML) as well as elimination of repetitive tasks being performed by WIC clinics. Awareness relationships appear to have improved amongst PCPs; however, this could have been more viable if PA WIC were able to utilize funds to provide incentives (lunch during educational session, physician's pads, etc.) to encourage more PCPs to accept our outreach invitations. PCP offices were issued Physician's Packets which provided information on the WIC Program and included WIC referral forms. However, a secure document portal might have eased the referral process and been utilized more readily by PCP offices. Although the use of MLs to improve relationships appeared viable initially, it did not seem sustainable based on the cost versus outcomes from hiring these positions to perform this outreach function.

Surveys provided valuable insight on ways to better refine this innovation. During this project, anthropometric and hemoglobin data was provided by PCPs, which accounted for over 2,300 measurements, as shown in Figure 1. Under normal circumstances and when not dealing with a declared Public Health Emergency, having these measurements would avoid the need to duplicate performing these tasks in the WIC clinic. WIC staff felt it was easy to utilize PCP data provided, which ultimately made appointments more efficient. However, the process for outreach

with PCPs was not streamlined, and for that reason, survey responses reflected only approximately half appeared satisfied. Staff concluded that not only was more PCP outreach and education required but that it would be more beneficial if future avenues for outreach and education to PCPs utilized electronic approaches rather than hard copy forms to obtain data.

According to survey responses, PCPs appeared satisfied with the current WIC referral and outreach efforts but were less satisfied with the vehicle for providing anthropometric and hemoglobin data to WIC. Both WIC staff and PCP responses advocated for use of electronic forms and therefore use of a secure document portal. PCP respondents also pointed out that some of their data collection processes (e.g., timing of requesting lab measurements) made it difficult for them to provide current data to WIC in a timely and consistent manner. WIC participant surveys indicated that not having to complete anthropometric and hemoglobin measurements in-person did not have an apparent impact on their satisfaction of certification appointments. While the innovation may not impact WIC participant satisfaction, it may still contribute to WIC staff serving WIC participants more efficiently.

Lastly, obtaining access to the Health Information Exchange (HIE) would have provided an opportunity to better refine this project. We learned that Pennsylvania is considered an "opt in" state and therefore would allow Commonwealth WIC staff who are considered a "covered entity" access to the HIE. However, many PA local WIC agency staff are considered "non-covered" (contracted staff) entities and therefore not eligible to allow easy access utilizing the current agreement in place between state agencies. For this reason, an agreement for authorized release of health information would be necessary to allow access for most PA WIC staff as well as a monitoring system to eliminate any potential for unacceptable use. Due to time constraints, PA WIC did not pursue "one-way access" to the HIE; however, continues to research possibilities to obtain access in the future. This would allow an additional avenue to access WIC participant's pertinent health information making WIC appointments more efficient and streamlined for both staff and participants by eliminating the need to repeat tasks being performed in the WIC clinic to obtain required health data. Additionally, other uses for health information networks to provide referrals and connections to community resources like WIC could be beneficial. Allowing PCPs to directly make referrals to WIC through this network would facilitate the referral process for PCPs and eliminate the need to complete and submit paper referral forms or upload documents to a secure document portal. Most importantly, PA WIC believes that access to the HIE would assure better overall continuity of care for WIC participants.

5.1.2. Sustainable and unsustainable aspects of the innovation project

PA feels that access to the HIE could be a sustainable avenue for accessing relevant Protected Health Information (PHI). The possible use of an Authorization for Release of Health Information document signed by the participant via a secure document portal could provide an avenue to gain access. However, until access is obtained, the continued use of outreach resources developed for this project are inexpensive and sustainable tools. The use of referral forms resulted in an increase in referrals for 26 participating WIC clinics, and for this reason they will continue to be utilized to facilitate and increase referrals. According to the Referral Detail Report in our Management Information System, 26 of the 42 participating clinics saw an increase in referrals from medical care providers when compared to the same period of the previous year.

For those 26 clinics, the percent increase in referrals from medical care providers ranged from 5% to 650%, with an average percent increase of 117% during the entire grant period.

The Physician Packets developed for PCPs was an effective educational tool explaining WIC resources and are sustainable for continued use. Although, WIC education sessions could be personalized and enhanced by providing lunch to PCP offices, if considered an allowable expense. PCP offices have busy schedules, and this would allow them to attend a WIC education session during their lunch break.

Finally, most local agencies were not able to sustain the ML position, specifically for outreach, due to lack of continued funding and ongoing staff shortages. However, since PA WIC took more of an outreach approach to improving relationships with physicians while increasing their awareness of WIC, local agency Outreach Coordinator positions offer more flexibility and therefore can continue to provide outreach to build upon PCP relationships.

5.1.3. Next steps for the innovation project

PA WIC is encouraged by the advantageous outcomes seen by West Virginia WIC's access to the West Virginia Health Information Network. For this reason, consideration is underway to pursue this avenue in PA. This would facilitate the certification process and eliminate redundancy of tasks by accessing required health information needed for the applicant's WIC certification. PA WIC is also interested in pursuing a secure document portal to be utilized by PCP offices to provide referrals and pertinent PHI needed for certification. This would also ease the certification process by eliminating the need for WIC staff to repeat anthropometric and hemoglobin screenings during WIC appointments, if they were recently completed by the PCP.

5.1.4. Future adaptions or changes

PA WIC will be implementing a secure participant portal where participants can upload documents needed for their appointment. This will streamline the WIC appointment process by eliminating extensive time currently spent on review during the actual appointment. A secure document portal will also be considered as a viable avenue which can be utilized by PCP offices to refer patients and submit pertinent PHI. Lastly, although we were not able to get access to the HIE for this project, it is something we would like to pursue in the future.

5.2 Lessons Learned

5.2.1. What were the top three lessons learned from this project?

As we were working on this project, there were many lessons learned along the way. We first learned that it is important to understand the project protocols and parameters before applying. The success of this project would be enhanced by involving Procurement and the Office of Legal Counsel during the initial application process to eliminate barriers and better understand potential limitations. The second lesson learned, although inevitable with constant turnover, was that consistent leadership throughout the project would have eliminated implementation and communication difficulties and barriers with getting the project off the ground. For example, it took time to update new staff on the parameters of the project and educate them on extensive research already performed regarding the pursuit of access to the HIE. It also took time for new

leadership to understand WIC local agency operations such as applicant processing procedures, anthropometric and hemoglobin requirements and how it would relate to this project. The third lesson learned is that it is important to have agreements executed at the start of the project to assure consistency and understand expectations throughout the project. Many of our agreements were not executed until we were well into the grant period, which made the project difficult to navigate and manage.

Lastly, it should be noted that the initial intent was to measure the actual time to perform certification appointments with and without required anthropometric and hemoglobin referral data. The unexpected Public Health Emergency (PHE) halted that parameter when clinics closed due to COVID-19 and proceeded to conduct WIC certifications virtually or over the phone. For this reason, the in-person parameter had to be altered at the last minute to meet circumstances surrounding the physical presence waiver, which included the ability to defer certain anthropometric and bloodwork requirements.

5.2.2. What are the top three best practices you would give to other WIC agencies seeking to implement similar enhancements to improve the certification process?

First, PA WIC recommends that, from the start, all required subject matter experts are part of the team to help develop the application. In addition to State Agency WIC staff, it is important to include IT, the Office of Legal Counsel, Procurement, and local agencies for vital input. This ensures the project includes the necessary components to be successful. In the case of the HIE, the Office of Legal Counsel's research determined that an agreement was already established between state agencies to allow access to the HIE. However, since local agencies in PA are contracted and considered "non-covered" entities, PA needed to define a way that designated local agency staff could also access the HIE and establish a monitoring tool to prevent and detect unauthorized use. The second-best practice we recommend is procuring and having staff familiar with using a secure document portal before the start of the grant period. This will help assure WIC HIPPA requirements are maintained throughout the project and provide a way to receive referral information digitally rather than using paper forms. On surveys conducted at the end of the project, both WIC staff and PCP survey respondents advocated for electronic forms to send data rather than paper forms. The third best practice we would recommend is to hire existing WIC staff as MLs. This is beneficial because they already understand WIC policies and procedures and only need to be trained on the HIE.

5.2.3. What do you wish you knew before working on the project? How would you have done anything differently?

To make this project more successful, it would have been beneficial to request more input from local agencies, especially regarding the targeted audience. Local agencies are more familiar with the daily operations of a WIC clinic and can provide valuable input on how to connect with the targeted audience and what will improve the WIC experience for both staff and participants. The PHE also impacted the outcome of the project. The PHE was unpredictable and played a large part in requiring states to revise initial parameters and procedures dictated as part of this grant. For example, it was difficult to measure time since most appointments were being completed virtually or over the phone, and anthropometric measurements and hemoglobin tests were not being conducted in the clinic due to physical presence waivers. Staffing shortages across WIC was also a challenge we encountered. Some local agencies could not participate in the project

due to limited staffing capacity. Lastly, it would have been beneficial to have all outreach materials developed and available prior to the start of the grant period. It is important to plan for the time it may take to have outreach materials developed, approved, and printed. For example, our Physician's Packet encountered several delays and was not available until the second half of the grant period. This impacted ML outreach efforts.