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WIC Nutrition Assessment and Tailoring Study: Final Report Part 2

U.S. Department of Agriculture | Food and Nutrition Service | Office of Policy Support

WIC Nutrition Assessment and Tailoring Study: Final Report Part 2

Submitted to

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Executive Summary

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was established to safeguard the health of low-income pregnant and postpartum women, infants, and children under age 5 who are at nutritional risk by providing supplemental foods, nutrition education, breastfeeding support, and referrals to healthcare and other social services. The program is administered by the U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS).

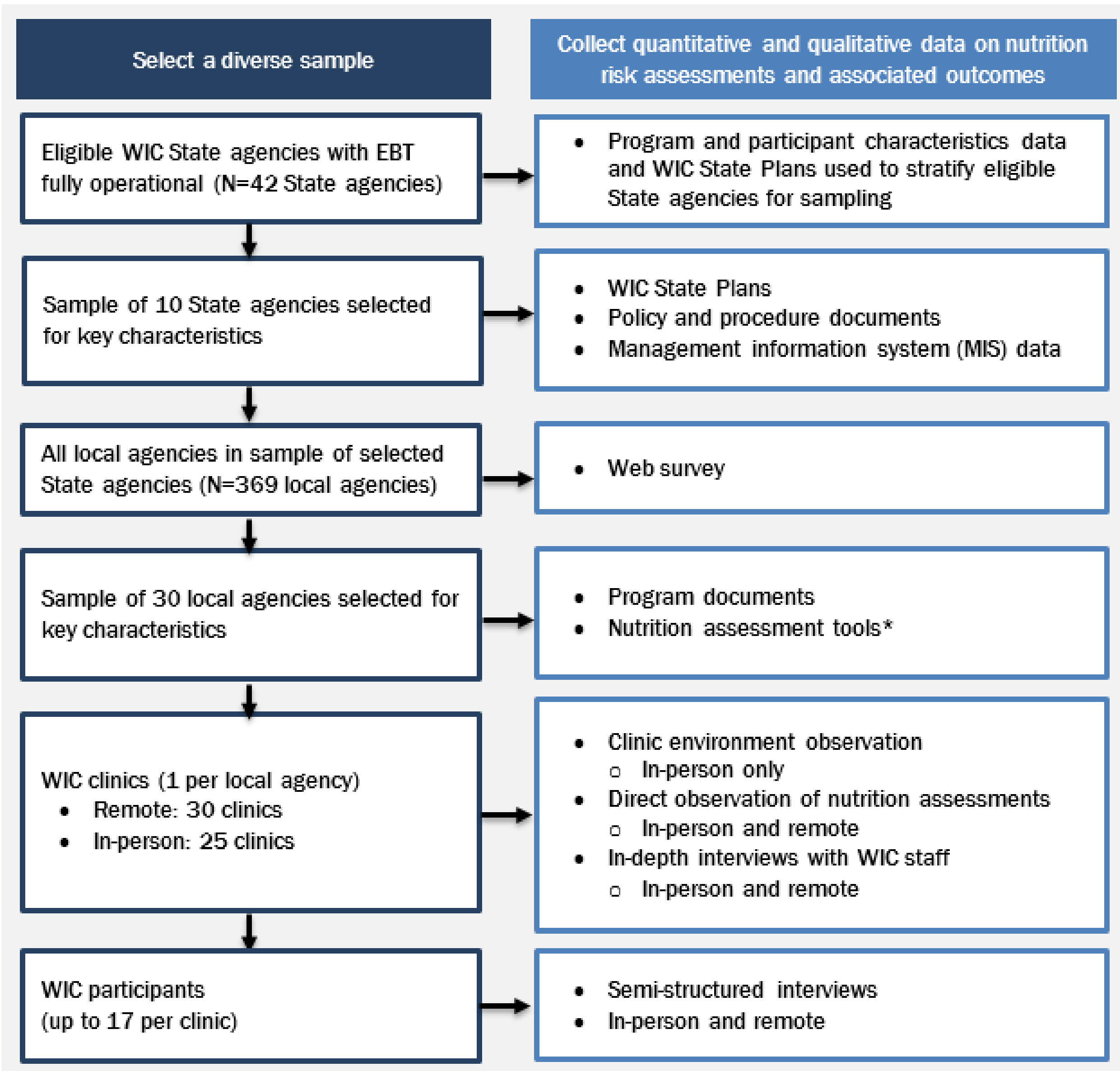
The nutrition assessment, a key part of WIC nutrition services, is the process by which WIC staff gather and synthesize information from participants to determine their nutritional risks. The nutrition assessment process is critical to the delivery of individualized nutrition services and to meeting WIC's mission. The WIC Nutrition Assessment and Tailoring Study (WIC NATS) is the first study to provide a comprehensive account of the WIC nutrition assessment and tailoring processes, including interview and survey data collected from staff and participants, observations of nutrition assessments, and analysis of MIS data. Study findings are intended to inform guidance for WIC staff to enhance service delivery and improve program satisfaction and retention with the goal of improving the nutrition and health of WIC participants. WIC NATS was fielded in the midst of the COVID-19 pandemic while many clinic sites were offering WIC services remotely. The study was adapted to allow for timely comparisons of in-person and remote service delivery that will help inform the modernization of WIC services.

Approach

WIC NATS uses a tiered study design that has yielded a diverse nonprobability sample of State agencies, local agencies, WIC clinics, and WIC participants. Within this structure (see Figure ES-1), the study collects data at each level, allowing the study team to profile the nutrition assessment process and provide insights into staff and participant satisfaction with the assessment process and benefit tailoring. The goal of the purposive sample design was to achieve the maximum variation in nutrition assessment processes; the data presented in this report are not representative of the nation as a whole.

The study's Final Report has been divided into two parts. The Part 1 Report examines how the pre-pandemic nutrition assessment and tailoring processes are described at the State agency level, identifies variation in the implementation of these processes at the local agency level, and uses State agency management information system (MIS) data to characterize actual WIC program tailoring practices. This report (Part 2) provides comparisons of remote to in-person nutrition assessment processes and benefit tailoring services and includes information on the perceptions of and satisfaction with services of both staff and participants. Observation and interviews were conducted between fall 2021 and spring 2022 for remote appointments and between summer and fall 2022 for in-person appointments.

Figure ES-1. Overview of sampling and data collection activities



*Nutrition assessment tools include such items as State or local agency-developed health and nutrition questionnaires and guidance documents on assigning risk codes.

How Staff Conduct the Nutrition Assessment

As part of the certification and recertification process, WIC staff perform a comprehensive nutrition assessment based on Value Enhanced Nutrition Assessment (VENA) guidance. VENA guidance defines the WIC nutrition assessment process as follows:

> … the process of collecting and synthesizing nutrition and health information in order to assess an applicant's nutrition and breastfeeding status, strengths, and needs. It is used to determine eligibility, through the identification of nutrition risks, and to personalize WIC nutrition services.[1]

While the assessment is often described as having several distinct steps, observers found that in practice a WIC clinic visit does not have distinct "sessions" for different activities. As Competent Professional Authorities (CPAs)—the clinic staff who conduct the nutrition assessment—asked assessment questions, they often followed up individual questions with education or a referral related to the topic at hand. In this way, the nutrition assessment, education, referrals, the food package prescription, and sometimes anthropometric measurements and lab work were woven together into one seamless session.

The nutrition assessment was conducted in a similar manner in both remote and in-person appointments. Staff used the MIS to guide the assessment, which ensured that they asked the same questions, regardless of the mode of the appointment. The overall processes for determining and documenting risk criteria, prioritizing risks, clarifying information, and determining high-risk status did not vary greatly between remote and in-person appointments. Though staff asked similar questions in remote appointments, they typically were not able to collect all the required anthropometric and blood work information from participants.[2] The availability of height/weight measurements and hemoglobin/hematocrit test results varied significantly between in-person and remote appointments. For the majority of in-person appointments, height and weight measurements and blood tests were obtained by WIC staff on the day of the visit (87% and 66%, respectively). In contrast, for most remote observations, height and weight measurements were either self-reported by the participant (48%) or not available (36%) and blood tests were typically not available at the time of the visit (87%).

Clinics received limited information from healthcare providers for use in the nutrition assessment. According to observation data, WIC staff referred to medical information provided directly by a healthcare provider in only 4.3 percent of observed remote appointments and 14.3 percent of observed in-person appointments, a statistically significant difference. The types of medical information received include height/length and weight measurements, hematocrit/hemoglobin test results, medical history or other clinical information, pregnancy confirmation, immunizations, and formula prescriptions.

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[1] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) – Updated guidance* (p. 1). Alexandria, VA: Authors. Available at: https://wicworks.fns.usda.gov/sites/default/files/media/document/vena-guidance.pdf

[2] The physical presence waiver enabled local agencies to defer certain anthropometric (i.e., height/length and weight) and bloodwork requirements used to determine nutritional risk.

WIC staff typically asked open-ended questions designed to learn about dietary habits and eating patterns. However, staff also acknowledged that they could be doing more to learn about the cultural preferences of their participants. Several staff suggested adding questions about cultural preferences to the MIS questionnaire. Staff in less than 9 percent of observed remote appointments and less than 5 percent of observed in-person appointments explored the participants' cultural behaviors and beliefs, suggesting that adding a question to the MIS could help staff to discuss this topic.

As part of the nutrition assessment, each WIC participant is assigned one or more nutritional risks. WIC site directors at 23 of the 25 clinics visited during in-person data collection noted in interviews that their MIS "always" or "sometimes" automatically determines the nutritional risks based on the nutrition assessment information entered by WIC staff. In about 30 percent of observations, CPAs added additional nutritional risks to a participant's case that were not generated by the MIS.

Staff shared that they typically only discuss two or three risks with participants to not overwhelm them with information. They noted that they did not want to discourage participants or caregivers or make them feel that they were doing something wrong. Other staff shared they prioritized risks because the length of the appointment did not allow for a longer discussion and to maintain clarity during the appointment. Some staff described using handouts for lower priority risks as a strategy to avoid overwhelming participants.

> *"I would say I select certain risks. There are some parents or some moms that they might have 10 risk codes. I don't want to discourage her from coming back or make her feel like she's doing all of these things wrong. I pick the top risks that I think are most important and then maybe give a handout on one that I didn't think was as bad or something like that. It really depends on the participant, but I don't want to overwhelm them or make them feel bad." – Clinic staff*

How Staff Tailor Nutrition Services

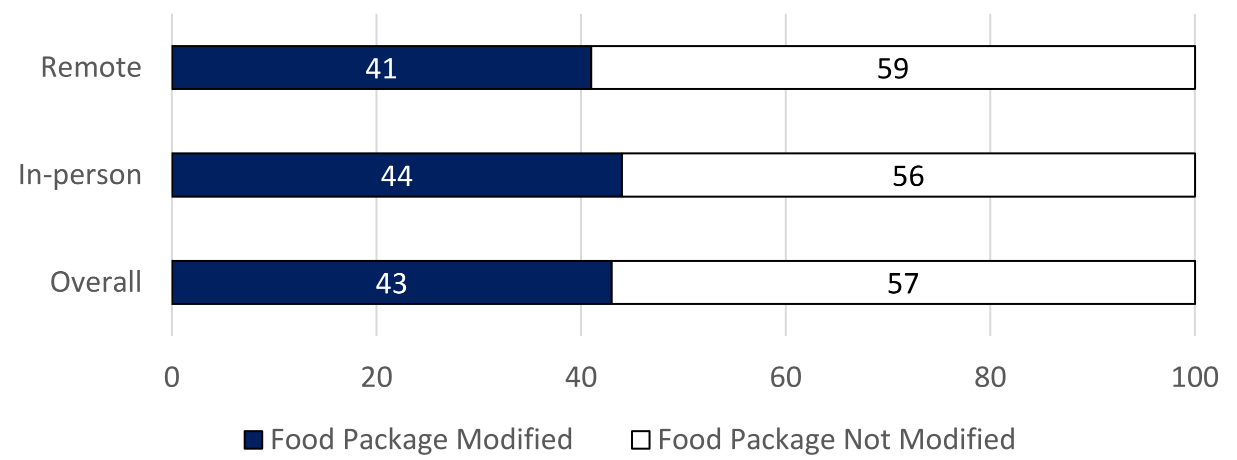
VENA guidance describes the three activities that make up benefit tailoring as follows:

- customizing counseling strategies (e.g., nutrition/breastfeeding education, guided goal setting, affirmations) that address a participant's needs and concerns;
- tailoring the food package to address nutrition needs, breastfeeding status, and preferences, including those based on the participant's culture; and
- making appropriate referrals.[3]

[3] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) – Updated guidance* (p. 25).

Staff interviews noted that food package tailoring was typically based on information collected during the dietary risk assessment about food consumption patterns, preferences, and nutritional needs. To obtain the needed information, staff asked follow-up questions to glean more information about dietary preferences. The majority of observed appointments did not result in a tailored food package[4] and food package tailoring did not vary between remote and in-person appointments (see Figure ES-2).

Figure ES-2. Reported modifications made to the standard food package prescription based on the information learned during the nutrition assessment among observed appointments, by assessment mode (percentage of observations)



* Indicates in-person versus remote differences that are significant at p≤0.05.

Notes: Tabulations are not weighted. Number of observations equals 258 for remote and 261 for in-person. Data from one State agency is not included in this analysis. Clinics in this State agency were observed only for remote data collection and staff at these clinics reported no tailored food packages, which may have been due to how they defined a tailored food package. Overall combines remote and in-person data.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021-spring 2022, and in-person observations were conducted summer and fall 2022. Questions to ask after the observation, question 3. See appendix E, Table 40.

Among WIC staff, there were contrasting viewpoints as to how much tailoring is possible within the WIC food package. Several staff expressed frustration that they could remove items from the WIC food package that families did not consume but could not add in replacements, particularly regarding cultural food preferences (although staff did not suggest alternative cultural foods as replacements).

A common modification to the food package was adjusting the type or amount of infant formula. This was usually based on the caregiver's preference, information from a healthcare provider about the recommended type of formula, or information about how much a caregiver is breastfeeding. A staff member described how tailoring the amount of formula for a caregiver

[4] This data is based on staff report at the time of each observed appointment.

who is partially breastfeeding requires extensive discussion and follow-up to get the amount correct:

> *”Breastfeeding moms… their food package takes a lot of discussion because sometimes you're going to have a mom that’s breastfeeding, but she’s also getting a little bit of formula. So we have to figure out how much formula [the mom] is offering the baby and make an adjustment. We put in [the amount of] baby formula for a day… and then we kind of have to go over that with mom. ‘This is how many ounces we can make. Do we think this is going to be enough?’ Maybe make a note and call mom in a month and see, ‘Do you have enough formula? Did you have too much formula? Maybe are you breastfeeding more now?’ So those are things we do kind of behind the scenes that aren’t necessarily scheduled as a WIC appointment or brought in for an appointment.” – Clinic staff*

The most common way that staff tailored nutrition education was by varying the topics discussed according to the individual’s interests, concerns, and identified nutrition risks. Nearly all interviewed WIC staff reported varying the topics discussed according to risk assessment findings (92 percent for remote appointments, 99 percent for in-person appointments). Most staff also varied the counseling methods they used when providing nutrition education (61 percent for remote appointments, 87 percent for in-person appointments). The most common modifications to counseling methods included adjusting their counseling approach based on a participant’s level of interest, comprehension, or experience.

Staff had conflicting perceptions about whether having remote visits facilitated or hindered tailoring of WIC services to meet participants’ needs. Some staff thought remote visits encouraged participants to share more information, particularly for sensitive or stigmatized issues. Others found it challenging to build rapport and trust with participants remotely.

Clinics vary widely in the amount of tailoring staff reported in both the remote and in-person environments. While overall 43 percent of clinic observations included a tailored food package, that value ranged from 0 to 100 percent for individual clinics when observing in-person appointments. The percentage of identified risks addressed by nutrition education and referrals also varied greatly across clinics.

Regression findings support the hypothesis that nutrition risks drive tailored food packages, nutrition education, and referrals. Participants with high-risk anthropometric codes were more likely to receive all three tailored benefits. Participants with high-risk clinical/health/medical risk codes or non-high-risk dietary risk codes were more likely to receive tailored nutrition education and referrals, but not tailored food packages, which may appropriately reflect WIC staff recognition of limitations inherent in food package tailoring to address the type of risk documented.

The Operationalization of VENA and Visit Time

To examine how observed nutrition assessments align with VENA principles, the study team used 10 items from the Observation Guide. Aspects of VENA guidance that were least likely to be observed include the following:

- The CPA provided a clear explanation of the WIC risk assessment process and its purpose—observed in only 11 percent of in-person appointments.
- The CPA successfully used the MIS to build rapport with the participant by inviting the participant to look at the computer screen during the assessment—observed in 19 percent of in-person appointments.
- When multiple risks were identified, topics for nutrition education were prioritized in discussion with participants to determine their priorities—observed in 33 percent of combined remote and in-person appointments.
- In a re-certification visit, the CPA follows-up on progress made—observed in 39 percent of combined remote and in-person re-certification appointments.

Other indicators of the operationalization of VENA guidance were almost universally observed across both remote and in-person appointments. A positive approach to the discussion of risk factors that focused on desirable health outcomes and not deficiencies was observed in 98 percent of appointments; WIC CPAs acknowledged and affirmed the participant's thoughts and concerns in 97 percent of appointments where the WIC CPA asked a participant or caregiver about their nutrition needs and interest; and CPAs directly discussed nutrition risks with the participant or caregiver in 81 percent of observed appointments.

According to VENA guidance, competency in multicultural intelligence/awareness includes having knowledge of the cultural groups in the WIC clinic, cultural eating patterns, and culturally based communication differences. While most of the WIC staff participating in the study had received training in cultural differences, data collectors rarely observed WIC staff exploring participants' cultural behaviors and beliefs about food during the nutrition assessment. Exploring a participant's cultural behaviors and beliefs was observed in just 8 percent of remote appointments and 4 percent of in-person appointments. The participant sample was racially and ethnically diverse, with 19 percent of study participants reporting Hispanic/Latino ethnicity and 29 percent reporting a race other than white (calculated from appendix E, Table 11).

Visit Time. The average length of an appointment was shorter for remote appointments than in-person appointments by almost 15 minutes (average time of 24.8 minutes for remote and 39.7 minutes for in-person). Remote appointments often included fewer activities conducted (most notably the lack of anthropometric measurements and bloodwork taken during remote appointments) than in-person appointments, which contributed to shorter appointments. Another issue for remote appointments that likely contributed to shorter appointments was that these appointments were sometimes scheduled during a break in the participant/caregiver's workday. Coming to the clinic to be certified requires participants to set more time aside for the appointment, allowing for longer appointments.

Staff Satisfaction and Perceptions

When asked about their perceptions of the assessment process, most staff members agreed that the nutrition assessment process was effective in identifying participants' nutritional risks. Many staff described the MIS as a useful, flexible tool that helped capture risk codes, prompted them to provide referrals, recorded information crucial to the participant's health and nutrition, and set the pace of the appointment. Staff believed that the assessment and its questions documented the full range of a participant's health and nutrition, and that it enabled staff to fulfill participant needs. In discussing how technology can improve the nutrition assessment process, sending text-based or email-based appointment reminders to participants was the most common staff suggestion.

Staff in both the in-person and remote environments generally agreed (i.e., responded strongly agree or agree) that the nutrition assessment process is effective in identifying participants' nutrition risks, although staff in the in-person environment were significantly more likely to agree with the statement than staff in the remote environment (97 percent vs. 88 percent for in-person and remote staff interviews, respectively). The one area where there was some disagreement between remote and in-person staff was in whether the nutrition assessment process results in an appropriately tailored food package. Only 61 percent of staff in the in-person environment agreed with the statement that the assessment results in an appropriately tailored food package compared to 87 percent of staff in the remote environment. This result aligns with the overall analysis of staff interviews which found that among WIC staff, there were contrasting viewpoints as to how much tailoring is possible within the WIC food package. It may be that regardless of how the nutrition assessment process is conducted, some staff believe it will not result in an appropriately tailored food package for some participants due to restricted options for food package tailoring.

Around three-quarters of staff in both the in-person and remote environments indicated that they had the resources they needed to perform a nutrition assessment. However, staff also identified many resource needs and ideas for improvements related to technology use and equipment, better communication with healthcare providers, updating information collection and dissemination, improving the cultural sensitivity of service provision, and increasing staffing.

Interviewed staff noted some unique challenges associated with remote appointments. Some staff noted that participants were more distracted during remote appointments, and it was more difficult to establish rapport. In particular, one staff member noted that it was more difficult to ask sensitive questions about domestic violence or food insecurity because of the challenges establishing rapport in the remote environment. Staff also missed the ability to see participants and visually assess their well-being. Lastly, missing anthropometric and bloodwork data was a challenge, and staff often felt they were not able to conduct a complete nutrition assessment without this information. However, staff also generally agreed that the remote nutrition assessment process was effective in identifying participants' nutritional risks. Staff may view more data as always being better, while also understanding that remote service delivery can adequately identify nutrition risks.

Participant Satisfaction and Perceptions

Participants felt very satisfied with the services they received, with many describing feelings of ease and comfort during their appointment. Participants appreciated the staff's gentleness and patience with children, as well as the staff's empathy and concern whenever sensitive topics surfaced. All participants (100 percent) in the in-person environment indicated they were very or somewhat satisfied with their appointment as a whole, as did 99.6 percent of participants in the remote environment.

Participants' perceptions of the nutrition assessment process were overwhelmingly positive. Almost all participants agreed that they were greeted warmly, made to feel at ease, listened to about their needs and concerns, and had things explained clearly to them in a way they could understand. As a result, 94 percent or more of participants in both the remote and in-person environments rated their satisfaction with each component of the certification appointment (i.e., the assessment, nutrition education, food package, and referrals) as highly or somewhat satisfied. There were no significant differences by assessment mode.

Promising Practices

Promising practices are activities, procedures, approaches, or policies that may lead to improved outcomes or increased efficiency. The study team investigated potential promising practices through qualitative analysis of site director and staff interviews. When discussing what their WIC clinics do well, staff and site directors focused on three important things across both in-person and remote environments—working as a team, being flexible, and treating people well. These attributes represent a real commitment to the VENA principles inherent in a participant-centered approach to service delivery. Clinics also identified effective use of technology and interpreter services to improve communication, building community partnerships to improve outreach, and creating an open dialogue with participants.

1. Study Introduction and Background

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was established to safeguard the health of low-income pregnant and postpartum women, infants, and children under age 5 who are at nutritional risk by providing supplemental foods, nutrition education, breastfeeding support, and referrals to healthcare and other social services. The program is administered by the U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS). The WIC Nutrition Assessment and Tailoring Study (WIC NATS; also known as the Process and Use of the Nutrition Risk Assessment Study) is intended to help FNS better understand how WIC local agencies and WIC clinic sites[5] conduct the nutrition assessment and use the information gathered to tailor benefits they provide to WIC participants.

1.1 Background of the WIC Nutrition Assessment

As part of the certification and recertification process, WIC staff perform a comprehensive nutrition assessment of WIC participants based on Value Enhanced Nutrition Assessment (VENA) Guidance.[6] This assessment has six steps: (1) set the agenda by explaining the assessment process; (2) collect the participant's relevant information including height and weight, blood iron levels, breastfeeding information, clinical data, dietary information, and environmental and family information; (3) clarify and synthesize the information; (4) use assessment data to guide nutrition services; (5) document the assessment; and (6) conduct the follow-up assessment at the next assessment appointment. Based on the nutrition assessment, WIC staff can tailor the benefits the participant receives to meet their nutritional needs. The specifics of the process can vary by WIC State agency and by WIC local agency.

As a part of a complete nutrition assessment, WIC staff identify and document nutritional risks for each participant. WIC regulations define nutritional risk as "(a) Detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements (i.e., measurements of the human body including height/length and weight); (b) Other documented nutritionally related medical conditions; (c) Dietary deficiencies that impair or endanger health; (d) Conditions that directly affect the nutritional health of a person, including alcoholism or drug abuse; or (e) Conditions that predispose persons to inadequate nutritional patterns or nutritionally

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5 Referred to throughout this report as "clinics."

6 U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) – Updated guidance* https://wicworks.fns.usda.gov/sites/default/files/media/document/vena-guidance.pdf.

related medical conditions, including, but not limited to, homelessness and migrancy."[7] To be certified as eligible for the WIC program, participants must be determined to be at nutritional risk.

WIC participants can receive several types of benefits during their appointment: food packages, nutrition education, breastfeeding support, and referrals. WIC staff have the ability to tailor all of these benefits, based on the findings of the nutrition assessment, to meet the needs of individual participants. Food packages are prescriptions for certain nutritious foods intended to supplement participants' diets with specific nutrients; participants use their benefits to purchase these foods at authorized vendors. WIC regulations determine the contents of the food packages, which vary with the individual's participant category, age, breastfeeding status, and whether the participant has documented medical conditions that require a WIC-eligible infant formula, exempt infant formula, or WIC-eligible nutritionals.[8] However, WIC staff can further tailor these packages to accommodate participants' preferences and health needs. For example, staff can reduce the amount of milk included in a food package for women or children to allow those participants to receive cheese, yogurt, soy-based beverage, or tofu instead, and/or to accommodate cultural preferences, vegan diets, lactose intolerance, or allergy.

Other types of food package tailoring include prescribing exempt formula for infants or nutritionals for children and women, issuing a cash value benefit (CVB) for fruits and vegetables in lieu of jarred foods for older infants, and prescribing amounts of food or beverages lower than the maximum monthly allowance (MMA). Infant feeding is a primary area for food package tailoring. Most clinics enrolling a newborn will conduct an extensive infant feeding assessment to determine how much breastfeeding and how much formula feeding is happening. The infant's food package is tailored based on the results of this assessment.

Nutrition education, which includes breastfeeding promotion and support, emphasizes the relationship between nutrition, physical activity, and health. It assists WIC participants in achieving positive change and maintaining healthy practices in diet and physical activity.[9] Topics covered in nutrition education may include breastfeeding or formula feeding, introduction of complementary foods, infant or child growth and development, or maintaining a healthy weight. As with food packages, WIC staff tailor nutrition education to meet an individual participant's needs through targeted education topics and the appropriate medium. For example, a new mother struggling with breastfeeding may receive one-on-one support from a

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[7] Definitions, 7 C.F.R. § 246.2. https://www.ecfr.gov/current/title-7/subtitle-B/chapter-II/subchapter-A/part-246/subpart-A/section-246.2.

[8] Supplemental foods, 7 C.F.R. § 246.10. https://www.ecfr.gov/current/title-7/subtitle-B/chapter-II/subchapter-A/part-246/subpart-D/section-246.10.

[9] Cates, S., Capogrossi, K., Sallack, L., Deehy, K., Eicheldinger, C., Karns, S., Bradley, S., Kosa, K., and Brophy, J. (2016, May). *WIC Nutrition Education Study: Phase I Report*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support.

Breastfeeding Peer Counselor (BFPC), while a group session may focus on more general infant feeding practices.

At some point during or at the conclusion of the nutrition assessment, staff may refer participants to other health, welfare, and social service programs to help meet any additional needs. These referrals may range from Government programs, such as Medicaid or Temporary Assistance for Needy Families (TANF), to Child Protective Services and domestic violence programs. They may also include community organizations such as child assessments, breastfeeding support groups, food pantries and housing assistance programs. Referrals may also be internal—to other staff within the WIC clinic such as breastfeeding support staff. When appropriate, WIC staff must make referrals for children younger than 24 months without current immunizations or mothers in need of drug and alcohol counseling and treatment.[10] WIC staff tailor referrals to their participants' specific situations and needs.

1.2 Need for the Study

WIC NATS is the first study to provide a comprehensive account of WIC nutrition assessment and tailoring processes. The nutrition assessment process is critical to the delivery of individualized nutrition services and to meeting WIC's mission. The goal of this study is to document the nutrition services process as it is conducted at local WIC clinics and how nutrition risks are identified, assigned, and used to tailor program benefits. Through this research, FNS will be able to share best practices related to the WIC nutrition assessment and the resulting benefits tailoring. Study findings are intended to inform guidance for WIC staff to enhance service delivery and improve program satisfaction and retention, with the goal of improving the nutrition and health of WIC participants.

1.3 Research Objectives

The primary purpose of this study is to provide a comprehensive, detailed description of the WIC nutrition assessment process in 10 WIC State agencies and explore the ways in which WIC clinics tailor participant benefits to address the results of the assessment. There are six research objectives for the study:

1. Provide in-depth descriptive information on how a diverse sample of local WIC agencies perform the WIC nutrition risk assessment. Describe the nutrition risk assessment process as carried out in practice in a variety of WIC clinics. Gather

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[10] U.S. Department of Agriculture, Food and Nutrition Service. (2001, August). *WIC policy memorandum #2001-7: Immunization screening and referral in WIC*. Alexandria, VA: Authors.

detailed information on staff and client experiences associated with nutrition risk assessment.

2. Provide in-depth information to systematically describe how a sample of diverse local WIC agencies across the nation use the collection of nutrition assessment information to tailor program benefits, including: food packages, nutrition education, breastfeeding promotion and support, and referrals to health and social services.

3. Investigate relationships between WIC nutrition services processes (to include the nutrition risk assessment and the associated tailoring of program benefit delivery) and the clinic experience, participant and staff perceptions, and overall clinic flow and efficiency.

4. Analyze study findings to identify specific practices or features of nutrition service processes that facilitate the use of nutrition assessment information for providing tailored program benefits and are associated with participant and staff satisfaction.

5. Describe the nutrition assessment and benefit tailoring processes when conducted remotely and compare these to the same processes as they occur in an in-person setting.

6. Investigate participant and staff perceptions of WIC nutrition services when provided remotely and compare these to perceptions observed during in-person WIC services.

The study research questions are presented in Appendix B.

1.4 Topics Covered and Analyses in Final Report Parts 1 and 2

The study analysis includes the review of WIC State Plans, State and local agency policy and procedure documents, and nutrition assessment tools; analysis of the Local Agency Director Survey and State management information system (MIS) administrative data; observations of the nutrition assessment and benefit tailoring process; and interviews with WIC staff and participants about their perceptions of the process. The study team collected observation and interview data for both remote and in-person service delivery. Data collection focusing on remote service delivery was completed from August 2021 through March of 2022; data collection focused on in-person service delivery was completed in the summer and fall of 2022.

As a result of delays in data collection caused by the COVID-19 pandemic, the Final Report was divided into two stand-alone parts:

- The Part 1 Report, dated May 2023, contains the synthesis of materials (e.g., policy and procedure documents for both remote and in-person services) obtained from State and local agencies to describe the nutrition assessment process and tailoring procedures at the State and local agency levels; the Local Agency Director Survey analysis; and the MIS data analysis. The report also includes an analysis of the impact of the COVID-19 pandemic on WIC service delivery.

Appendices include the data collection instruments (appendix A); a list of State and local agency documents reviewed (appendix B); descriptions of the nutrition assessment and tailoring process for each State agency garnered from State policy and procedure documents (appendix C); the analytic data tables from the Local Agency Director Survey (appendix D); nutritional risk code descriptions, crosswalks of State agency education and referral codes, and the MIS data logistic regression analysis methodology (appendix E); the MIS analytic data tables (appendix F); and the analysis of MIS data by State agency (appendix G).

- This report, the Part 2 Report, contains the remote and in-person analysis of nutrition assessment processes and benefit tailoring procedures between and within clinics, and analysis of participant and staff perceptions of, and satisfaction with, WIC nutrition services when provided remotely compared to in-person service provision.

The remainder of this report starts with a discussion of the study methodology in chapter 2. Reporting on the results of the analysis is divided into six topic areas: how staff conduct the nutrition assessment (chapter 3); how staff tailor nutrition services (chapter 4); the operationalization of VENA guidance (chapter 5); variation in clinic flow and total visit time (chapter 6); staff satisfaction and perceptions (chapter 7); and participant satisfaction and perceptions (chapter 8). Syntheses of study findings are summarized across two chapters that focus on promising practices (chapter 9) and a summary of remote vs. in-person findings (chapter 10). Conclusions, study limitations, and implications for future research are presented in chapter 11.

Report appendices include the data collection instruments highlighting remote and in-person differences (appendix A), additional methodology information (appendix B), data tables presenting the results from the Staff Interview Quantitative Database (appendix C), data tables presenting the quantitative results from the participant interviews (appendix D), data tables presenting results from the appointment observations (appendix E), flowcharts of clinic flow from the 25 clinics that were part of the in-person data collection (appendix F), the clinic environment observation data collected during in-person site visits (appendix G), an appendix with additional data tables and analysis not included in the report proper primarily for space reasons (appendix H), and a discussion of the regression methodology and regressions that were explored, but were not completed due to lack of variation in relevant data items (appendix I).

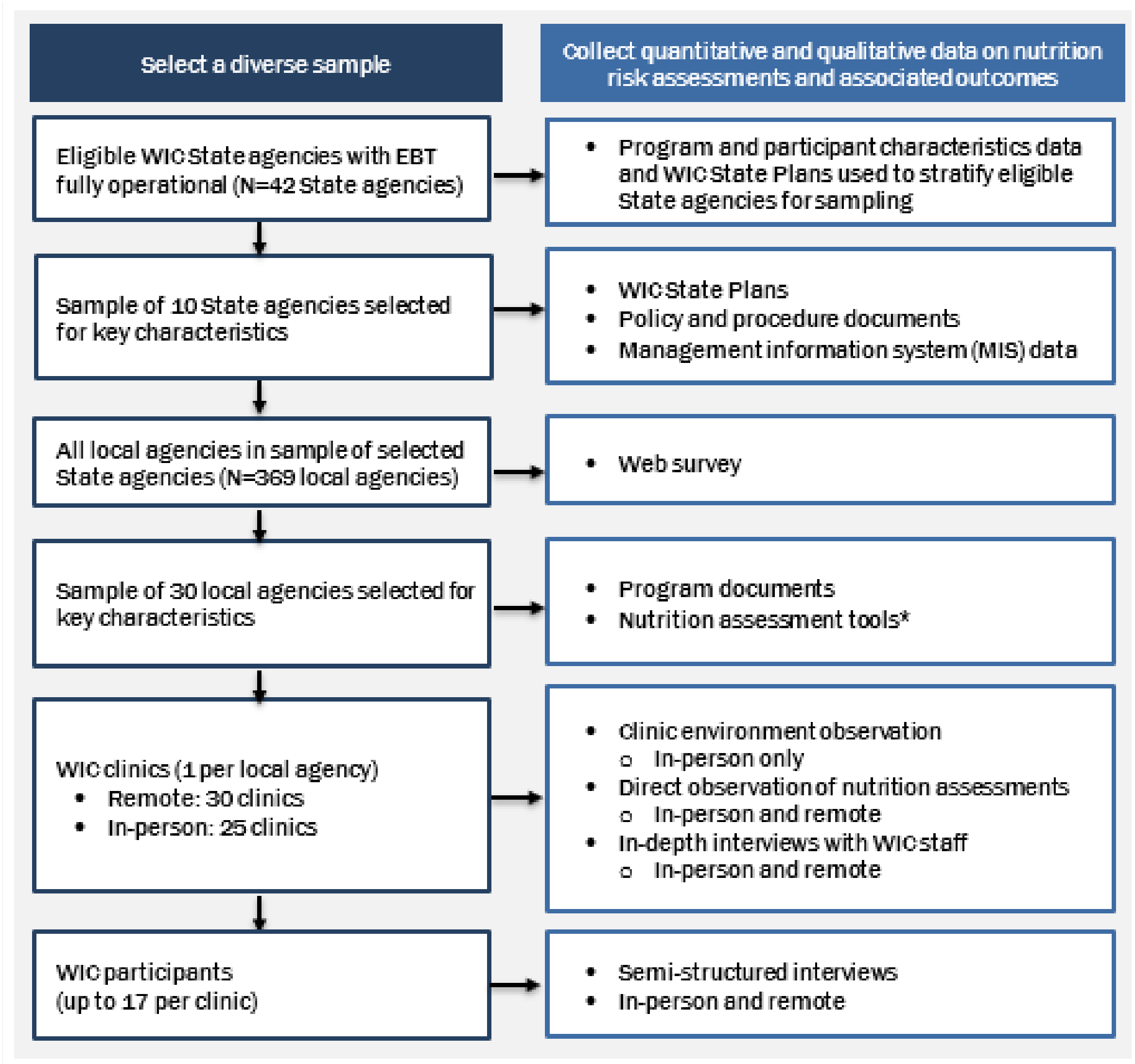
2. Study Methodology

To address the study objectives and answer the associated research questions, the study team used a tiered study design to identify a diverse sample of State agencies, local agencies, WIC clinics, and WIC participants. By collecting data at each level, the study team can profile the nutrition assessment process and provide insights into staff and participant satisfaction with both the assessment process and benefit tailoring. This chapter of the report provides a high-level description of the study methodology for those aspects of the analyses completed for the Part 2 Report. Further discussion of the methodology can be found in appendix B, including details on the sampling strategy for State and local agencies, local agency and clinic recruitment, data collection activities and challenges, and the analytic approach for the various types of analyses conducted.

2.1 Overview of the Study Design

WIC NATS uses a tiered study design that has yielded a diverse nonprobability sample of State agencies, local agencies, WIC clinics, and WIC participants. Within this structure (see Figure 2-1), the study collected data at each level allowing the study team to profile the nutrition assessment process and provide insights into staff and participant satisfaction with the assessment process and benefit tailoring. The goal of the purposive sample design was to achieve the maximum variation in nutrition assessment processes; the data presented in this report are not representative of the nation as a whole. Figure 2-1 presents an overview of the sampling strategy and the data collection activities associated with each stage of sampling. The study's Part 1 Report examined mainly how the pre-pandemic nutrition assessment and tailoring processes are described at the State agency level, identified variation in the implementation of these processes at the local agency level, and used State agency MIS data to characterize actual WIC program tailoring practices. This report (Part 2) compares remote to in-person nutrition assessment processes and benefit tailoring services and includes information on the perceptions of and satisfaction with services of both staff and participants.

Figure 2-1. Overview of sampling and data collection activities



*Nutrition assessment tools include such items as State or local agency-developed health and nutrition questionnaires and guidance documents on assigning risk codes.

2.2 Sampling Strategy and Recruitment for State and Local Agencies

To select a diverse set of 10 State agencies, the study team placed eligible agencies into strata based on participation, tailoring flexibility, and MIS complexity. To maintain geographic diversity, the study team selected one State agency from each FNS region plus a second from each of the three regions with the largest numbers of eligible State agencies.

Table 2-1. Selected State agencies

Selected State agencies	State agency FNS region
Vermont	Northeast
West Virginia	Mid-Atlantic
Choctaw Nation of Oklahoma	Southwest
Nebraska	Mountain Plains
Louisiana	Southwest
Indiana	Midwest
North Carolina	Southeast
Florida	Southeast
Ohio	Midwest
Nevada	Western

Table 2-1 lists the final selection results. The study team invited all 369 local agencies within these 10 State agencies to complete a web survey to capture important variation in the implementation of the nutrition assessment at the local agency level. Overall, 87 percent of local agencies completed the survey. The respondents to this survey made up the sampling frame for local agencies.

We used information from the survey and the WIC Participant and Program Characteristics 2020 data to select 30 local agencies that represent the variability observed in the following key characteristics:[11] local agency size (average monthly caseload); urbanicity (rural, urban, and suburban); language use (percentage of participants with Spanish or "other" as primary language); modes of nutrition education offered; and use of technology for nutrition education. Using the sampling plan described in appendix B, 30 local agencies were selected for remote data collection.

Of the original 30 selected local agencies, 4 were replaced as a result of the State agency review and 7 were replaced during the recruitment process for various reasons for an overall "response rate" of 63 percent for the remote data collection phase. Remote data collection occurred in the fall of 2021 through the spring of 2022.

At the time of their recruitment for remote data collection, clinics agreed to participate in both in-person and remote data collection, providing a starting point for in-person recruitment. However, as the COVID-19 public health emergency was still ongoing and the WIC physical presence waivers were still in effect at the time of in-person recruitment, not all sites had returned to in-person service delivery. Accordingly, 14 clinic sites that participated in remote data collection needed to be replaced. The study team was able to replace 9 clinics for a total of 25 clinics participating in in-person data collection. Data collectors visited these sites in person in the summer and fall of 2022.

[11] Average monthly caseload was obtained from the WIC Participant and Program Characteristics 2020 data. All other key characteristics were obtained from the survey data.

2.2c Local Agency and Clinic Sample Characteristics

As noted, sampling of local agencies for remote data collection resulted in the selection of 30 diverse local agencies for participation in the study. At the time of their recruitment for remote data collection, clinics agreed to participate in in-person data collection as well, providing a starting point for in-person local agency recruitment. However, as the COVID-19 public health emergency was still ongoing and the WIC physical presence waivers were still in effect at the time of in-person recruitment, not all sites had returned to in-person service delivery. Clinics providing only remote services could not take part in the in-person data collection.

The study team found that of the 30 recruited clinics, only 16 were providing in-person services at the time of recruitment for the in-person data collection. Replacements were found for nine of the 14 sites. In general, the study team tried to replace sites with another site with similar characteristics. Tables 2-2 and 2-3 present the key characteristics of local agencies and clinics that were included in the remote and in-person data collection phases, respectively.

Table 2-2 presents sample characteristics for the 30 WIC local agencies and clinics that participated in remote data collection. Local agencies and clinics are masked for confidentiality purposes. The key characteristic of the percentage of participants who speak a primary language other than English or Spanish has not been included in Table 2-2 to protect clinic identities, but selected clinics reported serving participants who spoke Nepali, Somali, Choctaw, Arabic, Creole, Vietnamese, French, Karen, Kurdish, Tagalog, Mandarin, Russian, Karenni, Kinyarwanda, and American Sign Language.

Table 2-3 presents sample characteristics of the 25 local agencies and clinics that participated in the in-person data collection. Again, local agencies and clinics are masked for confidentiality purposes. The final column of Table 2-3 indicates whether the clinic participated in both the remote and in-person data collection phases or just the in-person phase. Both Table 2-2 and Table 2-3 show substantial diversity in selected local agencies and clinics by key characteristics. In comparing the two sets of local agencies/clinics, we find that the set of local agencies/clinics that participated in the remote data collection is slightly more rural than those that participated in the in-person data collection (40 percent of remote local agencies and clinics were located in rural areas compared to 32 percent of in-person local agencies and clinics, calculated from Tables 2-2 and 2-3). The in-person clinics also appear slightly more diverse in terms of primary language spoken. For clinics that participated in remote data collection, the clinic percentage of Spanish speakers was more than 10 percent for 7 clinics (23 percent). It was more than 10 percent for 9 in-person clinics (36 percent).

Table 2-2. Key characteristics of final selected local agencies and clinics for remote data collection

Local agency/clinic	Local agency caseload	Urbanicity*	Local agency percentage of Spanish speakers	Local agency modes of education offered^	Local agency technology use in education	Number of associated clinic sites	Clinic caseload	Clinic percentage of Spanish speakers**	Number of days per week the clinic site is open
1	857	Rural	90%	4	Yes	3	577	46%	5
2	9,468	Urban	20%	5	Yes	5	7,300	20%	5
3	13,696	Urban	6%	4	Yes	5	3,559	3%	5
4	2,317	Suburban	0%	5	Yes	2	1,288	0.5%	5
5	4,749	Urban	2%	2	No	16	900	1%	5
6	8,137	Urban	0%	4	Yes	4	4,513	3%	5
7	3,300	Rural	10%	3	Yes	5	1,681	4%	4.5
8	1,360	Urban	11%	4	Yes	1	1,420	2%	4.5
9 (included 2 clinic sites)	2,702	Rural	10%	4	Yes	5	1,708 273	16% 2%	4 1.5
10	2,430	Suburban	20%	5	Yes	1	2,006	11%	5
11	2,077	Suburban	5%	4	Yes	1	1,833	3%	5
12	2,916	Suburban	10%	5	Yes	1	300	10%	5
13	717	Rural	0%	5	Yes	1	717	0%	5
14	4,109	Rural	2%	4	Yes	5	533	1%	3
15	2,647	Rural	5%	4	Yes	5	633	1%	5
16	893	Rural	0%	5	Yes	1	221	—	5
17	14,112	Urban	19%	6	Yes	5	4,246	75 - 80%	5
18	2,253	Urban	45%	4	No	1	n/a	n/a	5
19	3,992	Urban	15%	6	Yes	2	n/a	n/a	5
20	3,577	Suburban	40%	5	Yes	3	1,979	n/a	5
21	4,860	Urban	10%	5	Yes	3	2,288	5%	5

Table 2-2. Key characteristics of final selected local agencies and clinics for remote data collection (continued)

Local agency/Clinic	Local agency caseload	Urbanicity*	Local agency percentage of Spanish speakers	Local agency modes of education offered^	Local agency technology use in education	Number of associated clinic sites	Clinic caseload	Clinic percentage of Spanish speakers**	Number of days per week the clinic site is open
22	657	Rural	25%	5	Yes	1	536	50%	5
23	4,714	Urban	20%	5	Yes	4	2,210	n/a	5
24	867	Rural	0%	6	Yes	1	742	5%	4
25	694	Rural	1%	6	Yes	1	694	1%	5
26	1,750	Rural	1%	4	No	1	1,700	9%	5
27	2,238	Suburban	2%	4	No	2	2,000	1%	5
28	15,553	Urban	15%	5	Yes	10	3,585	20%	5
29	7,964	Suburban	15%	6	Yes	3	2,700	3%	5
30	880	Rural	1%	6	Yes	1	880	1%	5

* Primarily urban local agencies are those who answered the survey question about the location of the local agency's clinic sites as being "primarily urban" or "primarily urban and suburban." Primarily suburban local agencies are those who answered the survey question as "primarily suburban" or "primarily urban, rural, and suburban."
^ Modes of education include one-on-one counseling: face to face (in WIC site), one-on-one counseling: telephone, one-on-one counseling: video conferencing, group education sessions, technology-based nutrition education used by participants at site (e.g., computer, kiosk, tablet), technology-based nutrition education used by participants offsite via the internet (e.g., web-based nutrition education modules), and distribution of printed materials to participants.
**The most common language (other than English) spoken at home by the clinic site's WIC participants was Spanish for all clinics with reported data.
Note: n/a = not available.
Source: Local agency caseload data is from the WIC Participant and Program Characteristics 2020 dataset. The remaining local agency data elements are from the WIC NATS Local Agency Director Survey with the exception of number of associated clinic sites, which is from the Clinic Site Information Form completed by the local agencies. All clinic data are from the Clinic Site Information Form.

Table 2-3. Key characteristics of final selected local agencies and clinics for in-person data collection

Local agency/ clinic	Local agency Caseload	Urbanicity*	Local agency percentage of Spanish speakers	Local agency modes of education offered	Local agency technology use in education	Number of associated clinic sites	Clinic caseload	Clinic percentage of Spanish speakers**	Number of days per week the clinic site is open	Data collection phase for local agencies and clinics
1	8,137	Urban	0%	4	Yes	4	4,513	3%	5	Both
2	2,317	Suburban	0%	5	Yes	2	1,288	0.5%	5	Both
3	15,553	Urban	15%	5	Yes	10	3,585	20%	5	Both
4	9,468	Urban	20%	5	Yes	5	7,300	20%	5	Both
5	3,300	Rural	10%	3	Yes	5	1,681	4%	4.5	Both
6	14,112	Urban	19%	6	Yes	5	4,246	75–80%	5	Both
7	2,253	Urban	45%	4	No	1	n/a	n/a	5	Both
8	1,360	Urban	11%	4	Yes	1	1,420	2%	4.5	Both
9	4,109	Rural	2%	4	Yes	5	533	1%	3	Both
10	2,647	Rural	5%	4	Yes	5	633	1%	5	Both
11	657	Rural	25%	5	Yes	1	536	50%	5	Both
12 (includes 2 clinics)	2,702	Rural	10%	4	Yes	5	1,708 273	16% 2%	4 1.5	Both
13 (includes 2 clinics)	4,749	Urban	2%	2	No	16	900 700	1% 1%	5 5	Both, 1 clinic took part in in-person only
14 (includes 2 clinics)	867	Rural	0%	6	Yes	1	742 n/a	5% n/a	4 2	Both, 1 clinic took part in in-person only

Table 2-3. Key characteristics of final selected local agencies and clinics for in-person data collection (continued)

Local agency/ clinic	Local agency caseload	Urbanicity*	Local agency percentage of Spanish speakers	Local agency modes of education offered	Local agency technology use in education	Number of associated clinic sites	Clinic caseload	Clinic percentage of Spanish speakers**	Number of days per week clinic site is open	Data collection phase
15	893	Rural	0%	5	Yes	1	n/a	n/a	5	Both, same local agency but different clinic
16 (includes 2 clinics)	3,992	Urban	15%	6	Yes	2	n/a n/a	n/a n/a	5 4	Both, 1 clinic took part in in-person only
17	976	Suburban	5%	7	Yes	2	500	n/a	5	In-person
18	11,033	Urban	0%	5	Yes	5	n/a	15–20%	5	In-person
19	7,560	Suburban	10%	4	Yes	5	5,600	25%	5	In-person
20	1,981	Suburban	30%	5	Yes	5	n/a	n/a	3	In-person
21	1,169	Rural	40%	4	Yes	3	583	40%	5	In-person
22	1,745	Rural	5%	3	No	4	1,500	10%	5	In-person
23	14,158	Urban	20%	6	Yes	3	n/a	15%	5	In-person
24	2,193	Suburban	5%	4	No	2	n/a	10%	5	In-person
25	3,838	Suburban	30%	5	Yes	10	n/a	n/a	5	In-person

*Primarily urban local agencies are those who answered the survey question about the location of the local agency's clinic sites as being "primarily urban" or "primarily urban and suburban." Primarily suburban local agencies are those who answered the survey question as "primarily suburban" or "primarily urban, rural, and suburban."
**The most common language (other than English) spoken at home by the clinic site's WIC participants was Spanish for all clinics with reported data.
Notes: n/a = not available.
Local agency and clinic information were obtained from different sources. Where data conflicts, it is likely due to the different data sources for the information.
Source: Local agency caseload data is from the WIC Participant and Program Characteristics 2020 dataset. The remaining local agency data elements are from the WIC NATS Local Agency Director Survey with the exception of number of associated clinic sites, which is from the Clinic Site Information Form completed by the local agencies. All clinic data are from the Clinic Site Information Form.

2.2d Participant Sample Characteristics

To complete clinic data collection, the study team recruited up to 17 participants from each study clinic with the intention of achieving at least 10 completed observation/interview dyads per site in both the remote and in-person data collection phases.

Table 2-4 presents, by data collection phase, the characteristics of the WIC participants and caregivers for whom observation/interview dyads were completed. The participant sample for remote data collection was statistically significantly more likely to include participants with non-Hispanic or Latino ethnicity, which is in line with more in-person clinics having larger percentages of Spanish speakers as described in section 2.2c. Otherwise, the remote and in-person samples were similar in terms of age, race, and prior WIC experience.

Table 2-4. Characteristics of interviewed WIC participants/caregivers,[1] by data collection phase

Characteristics	Remote		In-person	
	Number of respondents	Percentage	Number of respondents	Percentage
Age		Years		Years
Lowest reported age		18		18
Highest reported age		65		67
Average age		29.0		28.4
Number of participants/caregivers	280		255	
Ethnicity				
Hispanic or Latino	45	16.1*	60	23.5
Not Hispanic or Latino	233	83.2*	194	76.1
Don’t know	1	0.4	1	0.4
Refused	1	0.4	0	0
Number of participants/caregivers	280		255	
Race[2]				
American Indian or Alaska Native	13	4.6	21	8.2
Asian	4	1.4	5	2.0
Black or African American	56	20.0	58	22.7
Native Hawaiian or Other Pacific Islander	3	1.1	3	1.2
White	192	68.6	161	62.9
Don't know	5	1.8	11	4.3
Refused	5	1.8	7	2.7
Missing	10	3.6	12	4.7
Number of participants/caregivers	280		256	

Table 2-4. Characteristics of interviewed WIC participants/caregivers,[1] by data collection phase (continued)

Characteristics	Remote		In-person	
	Number of respondents	Percentage	Number of respondents	Percentage
Prior WIC experience				
Yes, received WIC benefits for a previous pregnancy and child	111	40.4	104	41.1
Yes, received WIC benefits while I was pregnant with this child	45	16.4	44	17.4
No	63	22.9	60	23.7
Both for a previous pregnancy and while I was pregnant with this child	56	20.4	45	17.8
Number of participants/caregivers	275		253	

* Indicates in-person versus remote differences that are significant at p≤0.05.

[1] Multiple participants could be assessed at each appointment. Data elements refer to the participant/caregiver who was interviewed.

[2] Participants/caregivers were asked to report all races that apply. Nine of 10 records from remote interviews and 10 of 12 records from in-person interviews with missing race reported Hispanic or Latino ethnicity.

Note: Row totals may not add to 100 due to rounding.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Participant interviews. Remote interviews were conducted fall 2021–spring 2022 and in-person interviews were conducted summer and fall 2022, interview guide questions 34–38. Tabulations are not weighted. See appendix C, Table 8c.

2.3 Data Collection

There are three primary data sources for the analysis presented in this Part 2 Final Report: staff interviews, participant interviews, and appointment observations. These data were collected in both the remote and in-person data collection phases. The in-person data collection phase also included site director interviews, an observation of the clinic environment, and the creation of flow charts to record clinic flow.

2.3a Remote Data Collection

After site selection, the study team assigned one senior qualitative researcher to conduct remote data collection at each site. Initial expectations were that data collection would be completed over a 2-week period at each site, but in reality, the data collection period extended to 3 weeks in several sites in order to obtain the full complement of data from each site. The remote data collection included the following activities:

- interviews with WIC nutrition assessment staff by phone or video call;

- "observation" of nutrition services through a three-way call with the WIC CPA, participant, and study staff; and

- interviews with WIC participants completed by phone call.

2.3b In-Person Data Collection

Westat selected 25 WIC clinics for in-person data collection as described in appendix B. The in-person data collection included the following activities:

- interviews with the WIC site director;

- interviews with WIC nutrition assessment staff;

- direct observation of nutrition services;

- interviews with WIC participants;

- an observation of the clinic environment; and

- the completion of flowcharts describing clinic flow for in-person service delivery at each clinic.

Table 2-5 presents a summary of the data collection activities by data collection phase. The data collection protocol for the remote data collection and the changes required for in-person data collection are described in appendix B.

Table 2-5. Summary of data collection for the remote and in-person data collections phases

Type of data	Number collected remote	Number collected in-person
Staff interviews	89	87
Appointment observations	304	261
Participant interviews	280	256
Site director interviews	–	25
Observations of clinic environments and clinic flowcharts	–	25

2.4 Analytic Approach

This report presents results from a set of analyses that use a combination of both qualitative and quantitative research methods. Qualitative data was coded using NVivo software and the analysis was conducted by experienced qualitative researchers. A description of the study's qualitative methods is included in appendix B. A high level description of quantitative analysis methods is provided here, but more details are available in appendix B as well.

2.4a Summary Statistics and Bivariate Analysis

Analysis of quantitative data includes summary statistics such as means, medians, and proportions. The study team also used bivariate analysis to assess differences in outcomes associated with the following two characteristics:

- urban versus rural location (based on the ZIP code of the WIC clinic address) for participant responses; and
- mode of assessment (remote versus in-person) for staff and participant interview responses and assessment observations.

These analyses used t-tests to determine if the differences between groups were statistically significant. Statistical differences are reported below the 0.05 level.

2.4b Multivariate Analysis

For the subset of research questions that focus on identifying the factors independently associated with the outcomes observed, bivariate analyses alone are not sufficient. Accordingly, the study team has used multivariate regression analysis to explore how procedures and characteristics are independently associated with outcomes when they are jointly determined by or related to a variety of factors. Multivariate regression isolates the unique association between an individual variable and an outcome while holding constant the influence of other variables in the model. When compared to bivariate analyses, multivariate regression analysis typically finds a more limited set of variables has a statistically significant association with the outcome.

In all regressions conducted by the study team, 95 percent confidence intervals were used to determine statistical significance of coefficients and model fit statistics influenced model choice. Appendix I offers additional, detailed information on the methods and procedures supporting the results of the multivariate regression analyses presented in this report.

2.4c Comparing Remote and In-Person Data

Two important objectives for the Part 2 Report are related to the comparison of remote and in-person assessments:

- Describe the nutrition assessment and benefit tailoring processes when conducted remotely and compare these to the same processes as they occur in an in-person setting.

- Investigate participant and staff perceptions of WIC nutrition services when provided remotely and compare these to perceptions observed during in-person WIC services.

To address these objectives, this report uses both qualitative and quantitative analyses to compare in-person and remote services and compare staff and participant perceptions of these two service delivery modes. These comparisons are described for each topic as relevant and summarized for the nutrition assessment process, the tailoring of benefits, and VENA operationalization at the end of chapters 3 through 5. An overall summary of findings related to remote versus in-person differences is included in the conclusions presented in chapter 10.

3. How Staff Conduct the Nutrition Assessment

Key Findings

- While the nutrition assessment process is often described as a series of activities, one following another in distinct steps, in practice, observers found that as CPAs asked assessment questions, they often followed-up individual questions with education or a referral related to the topic at hand. In this way, the assessment, education, referrals, the food package prescription, and sometimes anthropometric measurements and lab work were woven together into one seamless session.
- All WIC staff used their State MIS to conduct a comprehensive nutrition assessment for both remote and in-person certifications. The questions in the MIS served as a guide for discussion and ensured that the WIC staff touched on all topic areas and considered all allowable risk criteria.
- The availability of height/weight measurements and hemoglobin/hematocrit test results varied significantly between in-person and remote appointments. For the majority of in-person appointments, height and weight measurements and blood tests were obtained by WIC staff on the day of the visit (87 percent and 66 percent, respectively). In contrast, for most remote appointments, height and weight measurements were either self-reported by the participant (48 percent) or not available (36 percent) and blood tests were typically not available at the time of the visit (87 percent).
- WIC staff typically asked open-ended questions designed to learn about dietary habits and eating patterns. However, staff also acknowledged that they could be doing more to learn about the cultural preferences of their participants. Several staff suggested adding questions about cultural preferences to the MIS questionnaire.
- WIC site directors at 23 of the 25 in-person sites noted in interviews that the MIS "always" or "sometimes" automatically determines the nutritional risks based on the nutrition assessment information entered by WIC staff.
- Staff shared that they typically only discuss the top two or three risks with participants to not overwhelm them with information.
- Clinics used two primary methods for conducting breastfeeding assessments—either the CPA who conducted the nutrition assessment also conducted the breastfeeding assessment or the breastfeeding assessment was conducted by breastfeeding experts after the nutrition assessment was completed.
- The nutrition assessment was conducted in a similar manner in both remote and in-person appointments. Staff used the MIS to guide the assessment, which ensured that they asked the same questions, regardless of the mode of the appointment.

As part of the certification and recertification process, WIC staff perform a comprehensive nutrition assessment based on VENA guidance. VENA guidance defines the WIC nutrition assessment process as follows:

> …the process of collecting and synthesizing nutrition and health information in order to assess an applicant's nutrition and breastfeeding status, strengths, and needs. It is used to determine eligibility, through

> the identification of nutrition risks, and to personalize WIC nutrition services.[12]

The nutrition assessment is a key component of the WIC appointment. Based on information learned during the nutrition assessment, WIC staff can tailor participant benefits, including nutrition education, the food package, breastfeeding counseling, and referrals. Chapter 4 details the ways staff tailor WIC services. This chapter discusses how staff conduct a comprehensive nutrition assessment, how they clarify unclear information, and how they determine whether a participant is high risk. Lastly, the chapter concludes with a discussion of the differences in how staff conducted nutrition assessment between in-person and remote appointments.

3.1 Conducting a Comprehensive Assessment

While the assessment is often described as having several distinct steps (see section 1.1), observers found that in practice a WIC clinic visit does not have distinct "sessions" for different activities. In most cases, activities such as education and counseling, referrals, and the food package prescription are all conducted in one seamless session. As CPAs asked assessment questions, they often followed up individual questions with education or a referral related to the topic at hand. In this way, the assessment, education, referrals, the food package prescription, and sometimes anthropometric measurements and lab work were woven together into one seamless session. Though this report presents findings related to the nutrition assessment and benefit tailoring for education and other services in separate chapters, the majority of WIC staff (53 percent; see Figure 3-1) did not complete the nutrition assessment before providing nutrition education. Rather, as noted, staff asked questions to determine the participant's nutritional risk and, depending on the answers, would often provide nutrition education at that moment, rather than waiting until the assessment was completed. For example, if the CPA asked a question about fruit and vegetable intake and received an answer from the caregiver that the child was a picky eater who disliked vegetables, the CPA might, in the moment, provide some helpful tips for increasing vegetable intake among picky eaters (e.g., offering smoothies, pureeing vegetables into sauces). This approach makes sense and likely results in a cohesive visit where the participant feels heard and the WIC staff are responsive. How this approach of immediately following up with education or a referral impacts the ability to prioritize needs and risks could not be determined from the data.

WIC staff more often completed the nutrition assessment before providing nutrition education in observed remote appointments than in-person ones. While CPAs did not complete

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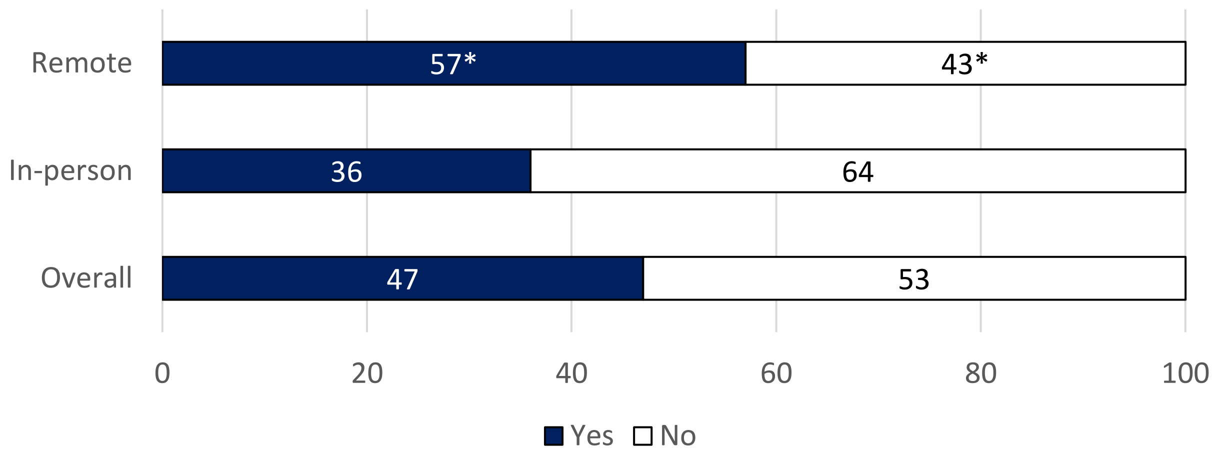
[12] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) – Updated guidance* (p. 1).

the assessment before providing nutrition education in 64.1 percent of in-person appointments, this was true for 43.0 percent of remote appointments, a statistically significant difference. This may have been a function of time available for the appointment (see section 6.2). Remote appointments were significantly shorter in duration than in-person appointments, which may have resulted in less free-flowing assessment discussion.

Figure 3-1. Is the nutrition assessment completed before providing nutrition education? (percentage of observed appointments)



* Indicates in-person versus remote differences that are significant at p≤0.05.
Notes: N remote = 286; N in-person = 251; N overall = 537. Percentage totals may not add to 100 due to rounding. Overall combines remote and in-person data.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observations of Nutrition Services Components of WIC Certification. Tabulations are not weighted. See appendix E, Table 50.

3.1a Using the MIS

All WIC staff used their State MIS, a centralized case management system, to conduct a comprehensive nutrition assessment for both remote and in-person certifications.[13] The questions in the MIS served as a guide for the discussion with the participant or caregiver and ensured that the WIC staff touched on all topic areas and considered all allowable risk criteria. Often, staff asked further follow-up questions or probed on a participant's or caregiver's answers, but the programmed questionnaire contained in the MIS served as the backbone for the nutrition assessment.

[13] While the study States had MIS systems developed by different vendors, the functionality was largely the same for all. See appendix H.2 for a list of MIS systems used.

"Our [MIS] has a nutrition interview that walks us through [everything], [so] if you follow [the] different panels, and that's how [you] gain [your] information." – Clinic staff

"...in our [MIS], there are set questions that we must ask. So we go through those. And while we are going through those, at least for myself, [there are] other things [that] might come up that you might probe a little further to get more information. But [in the MIS] there is a general layout for assessing." – Clinic staff

"[The MIS] … guides you through the process. You can't go on to certain screens until previous screens are completed. So you can't generate risks until you have labs in there, answer all of your nutrition questions. So, yeah, I think the [MIS] … really ensures that all steps are followed to get the most accurate nutrition risk assessment." – Clinic staff

3.1b Information Collected

During the nutrition assessment, staff collected information from the participant or caregiver to determine the participant's nutrition risks. While the information gathered across clinics varied to some degree, in almost all observed appointments, CPAs asked questions about a participant's health/medical information, feeding/dietary practices and preferences, and breastfeeding intention or practices, when applicable (99 percent, 99 percent, and 90 percent, respectively; see Table 3-1). In slightly over two-thirds of observed appointments, CPAs discussed substance use and the family and home environment (68 percent and 68 percent; respectively). Immunizations were discussed in just over half of appointments where appropriate (55 percent). In some States, WIC staff can check the immunization status of children using an electronic interface between the WIC MIS and a State immunization registry, so this information may have been available to WIC staff without the need to ask during the observed appointments.

These findings were consistent with the staff interview data. When asked to describe how they conduct the nutrition assessment, almost all staff noted that they capture information about the participant's height and weight, bloodwork results, medical diagnoses, and dietary and nutrition habits. To a lesser degree, staff noted they ask questions about the following topics: immunizations, dental health, screen time, physical activity, exposure to tobacco smoke, food allergies, and vitamin intake.

"We first assess … height, weight, and also lab[s]. And then … we follow up and make sure they're getting the iron-rich foods, vegetables, fruits, milk intake, dairy intake. And screen time, exercise, and if there are any smokers in the home. And we also observe for immunizations." – Clinic staff

"We collect height, weight. We collect their hemoglobin, their iron level. We collect information about their environment at home. So basically, are they afraid

somebody might hurt them or their children? Does anybody smoke in the house or outside of the house, around them, or children? We ask about their nutrition, of course. So how much juice are they drinking, milk, water? How are they eating? Are they picky? … Do they see a dentist? So we make sure that they're taking care of their teeth, their mouth, that they're up to date on shots." – Clinic staff

"The … nice thing [about in-person appointments] is that we definitely do the height and weight and hemoglobin, so that kind of gives us a little glimpse into some physical measures. And then, of course, we take a dietary assessment. So I'm looking at kind of the big picture with that. That helps kind of guide us in, okay, what's the diet like? What is the day-to-day like? What's physical activity like? And then also, I feel like a lot of our other questions kind of help piece together the environment. So, are they at home? Are they at daycare? What's screen time like? Do they have access to their working stove and refrigerator? Do they have access to food? All of that really helps us get a bigger picture … now once we know all of that, we can kind of apply it to, okay, let's look at, I guess, the more physical markers like the height, the weight, hemoglobin and talk about how it links together. So I think all of that information that we collect helps us identify the risks." – Clinic staff

Table 3-1. Percentage of observed appointments discussing selected topic areas during the assessment

Topic areas	Percentage of observed appointments		
	Remote	In-person	Overall
Health/medical information	99.7	98.9	99.3
Feeding/dietary practices and preferences	100*	98.0	99.1
Breastfeeding intention or practices (when applicable)	92.6	87.0	89.7
Immunizations (when applicable)	51.2	57.8	54.3
Substance use	67.2	70.0	68.5
Family and home environment	66.7	69.2	67.8
Median number of topics covered	4	4	4
Number of observed appointments	304	261	565

*Indicates in-person versus remote differences that are significant at $p \leq 0.05$.

Note: Denominators vary by topic area based on the number of observations with a checked box (yes, no, or not applicable) for each topic area.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observations of Nutrition Services Components of WIC Certification. Tabulations are not weighted. See appendix E, Table 48.

Availability of Anthropometric and Bloodwork Measurements During Remote Appointments

The availability of height/weight measurements and hemoglobin/hematocrit test results varied significantly between in-person and remote appointments. For the majority of in-person appointments, height and weight measurements and blood tests were obtained by WIC staff on the day of the visit (87 percent and 66 percent, respectively; see Tables 3-2 and 3-3). In contrast, for most observed remote appointments, height and weight measurements were either self-reported by the participant (48 percent) or not available (36 percent) and blood tests were typically not available at the time of the visit (87 percent). Though staff often did not have reliable access to anthropometric and bloodwork data for remote appointments, staff noted that they still discussed health and medical information with the participant by either (1) discussing the self-reported data provided by the participant, or (2) asking more general questions about whether the participant or caregiver was concerned about their or their child's health.

Table 3-2. Availability of height/length and weight measurements during nutrition assessment, by assessment mode

Were the participant's height or length and weight measurements available to the Competent Professional Authority (CPA) during the visit?	Appointment observations			
	Remote		In-person	
	Number	Percentage	Number	Percentage
Yes, measurements were obtained on day of visit	1	0.3*	219	86.6
Yes, recent measurements were obtained from an off-site healthcare provider	27	9.1*	10	4.0
Yes, the participant self-reported measurements taken at home	143	48.1*	7	2.8
Current measurements were not available, but the CPA used measurements from the previous visit	12	4.0*	0	0.0
No measurements were available to the CPA at the time of the certification visit	108	36.4*	16	6.3
Could not be determined	6	2.0	1	0.4
Number of observed appointments	297		253	

*Indicates in-person versus remote differences that are significant at $p \leq 0.05$.
Note: Percentage totals may not add to 100 due to rounding.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Start of the Observation, Gathering Information for Nutrition Risk Assessment, question 1. Tabulations are not weighted. See appendix E, Table 15.

Table 3-3. Availability of hemoglobin or hematocrit test results during nutrition assessment, by assessment mode

Were the results of a hemoglobin or hematocrit test available to the Competent Professional Authority (CPA) during this visit?	Appointment observations			
	Remote		In-person	
	Number	Percentage	Number	Percentage
Yes, hemoglobin or hematocrit test performed, and value assessed on day of visit	2	0.7*	172	65.9
Yes, hemoglobin or hematocrit test results were obtained from an off-site healthcare provider	4	1.3	5	1.9
Current measurements were not available, but the CPA used measurements from the previous visit	3	1.0	1	0.4
No measurements were available to the CPA at the time of the certification visit	261	86.7*	75	28.7
Could not be determined	31	10.3*	8	3.1
Number of observed appointments	301		261	

* Indicates in-person versus remote differences that are significant at p≤0.05.
Note: Percentage totals may not add to 100 due to rounding.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Start of the Observation, Gathering Information for Nutrition Risk Assessment, question 2. Tabulations are not weighted. See appendix E, Table 16.

In some State MIS, height/weight is a required field; staff had to enter some value into the system to continue with the certification. A WIC staff member described their procedures for recording anthropometrics during the pandemic as follows:

> *"So under the COVID-19 waivers from the USDA that [STATE] was still opting into, they [participants] can self-report measurements, so it's an estimate, really. And then, if they are unable to give us a good estimate of the current measures, we can duplicate the last measures and there's a little drop-down for that. And then if they're a brand-new person and they can't give us a good estimate and there's no previous measures to duplicate, we would just enter the 50th percentile across the board. And for hemoglobin it's just deferred with a COVID-19 deferment. There's a little drop-down that we put it in." – Clinic staff*

Information From Healthcare Providers

Clinics receive limited information from healthcare providers. According to observation data, WIC staff referred to medical information provided directly by a healthcare provider in only 4.3 percent of observed remote appointments and 14.3 percent of observed in-person appointments (see Table 3-4), a statistically significant difference. Generally, interviewed staff noted that, at times, healthcare providers may fax over prescriptions for specialty formulas, though it is also common for the health care provider to give the prescription to the caregiver, who then brings it to the WIC clinic. During remote service delivery, however, staff indicated that most clinics received formula prescription information via fax from the healthcare provider and having the prescription brought in by the participant. Staff from at least one local agency received WIC referrals from the health clinic located in the same building. This health clinic also provided height and weight and bloodwork information to the WIC clinic, though this type of arrangement was rare within the study sample.

Table 3-4. Use of medical information provided directly from healthcare provider during nutrition assessment, by assessment mode

During the visit, did the WIC staff refer to any medical information provided directly from a healthcare provider?	Appointment observations			
	Remote		In-person	
	Number	Percentage	Number	Percentage
Yes	13	4.3*	37	14.3
No	290	95.7*	221	85.7
Number of observed appointments	303		258	
What kind of information was referred to? (if provided by the healthcare provider)				
Height/length and weight	8	–	18	–
Recent hematocrit/hemoglobin measures	4	–	3	–
Medical history or other clinical information	2	–	13	–
Dietary/nutrition information	1	–	2	–
Family and social environment information	0	–	0	–
Other**	2	–	11	–
Number of observed appointments	13		37	

* Indicates in-person versus remote differences that are significant at p≤0.05.
** Other medical information provided includes pregnancy confirmation, immunizations, and formula prescriptions.
Note: Observers checked all types of information that applied. Percentages not calculated due to small numbers.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Start of the Observation, Gathering Information for Nutrition Risk Assessment, question 3. Tabulations are not weighted. See appendix E, Table 17.

Information About Cultural Preferences

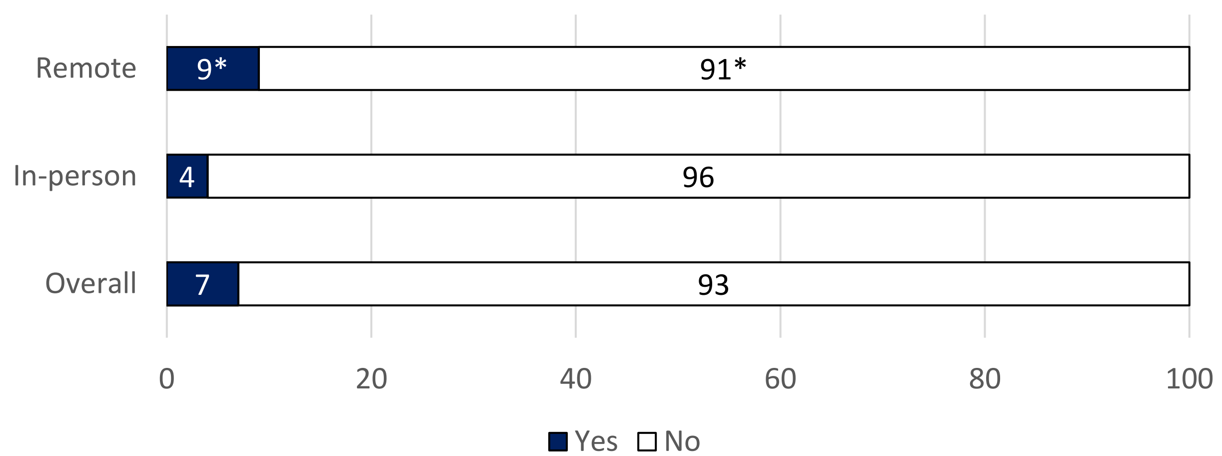
To understand participants' and caregivers' cultural preferences, WIC staff typically asked open-ended questions designed to learn about dietary habits and eating patterns. For example, staff described asking participants about their favorite foods and what they like to cook for their families.

> *"Normally I just ask [the caregiver], 'What types of foods does the child like to eat?' And usually when I just have a kind of a broad open question like that, they'll go in and tell me that they eat certain Indian foods …or they make their own yogurt or sometimes they're vegan. And they'll kind of describe the foods to me. So then I can use that information to tailor the food package. When I ask about … nutrition, I assess what [their] child eats. I'm not like, 'Does your child eat eggs? Does your child [drink] milk?' I kind of make it more open-ended and let them just*

talk and tell me a typical diet and kind of the foods that they could eat." – Clinic staff

However, staff also acknowledged that they could be doing more to learn about the cultural preferences of their participants. Several staff suggested adding questions about cultural preferences to the MIS questionnaire. According to appointment observation data, staff in less than 9 percent of observed remote appointments observations and less than 5 percent of observed in-person appointments explored the participant's cultural behaviors and beliefs, suggesting that adding a question to the MIS could help staff to discuss this topic (see Figure 3-2).

Figure 3-2. During the assessment conversation, did the WIC staff explore the participant's cultural behaviors and beliefs? (percentage of observations)



* Indicates in-person vs. remote differences that are significant at p≤0.05.
Note: *N* remote = 301; *N* in-person = 257; *N* overall = 558. Overall combines remote and in-person data.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Start of the Observation, Gathering Information for Nutrition Risk Assessment, question 8. Tabulations are not weighted. See appendix E, Table 22.

3.1c Determining Nutritional Risks

As part of the nutrition assessment, each WIC participant is assigned one or more nutritional risks. Figure 3-3 presents the five risk categories and examples of nutritional risk codes in each.

Figure 3-3. Examples of WIC nutritional risks by risk category

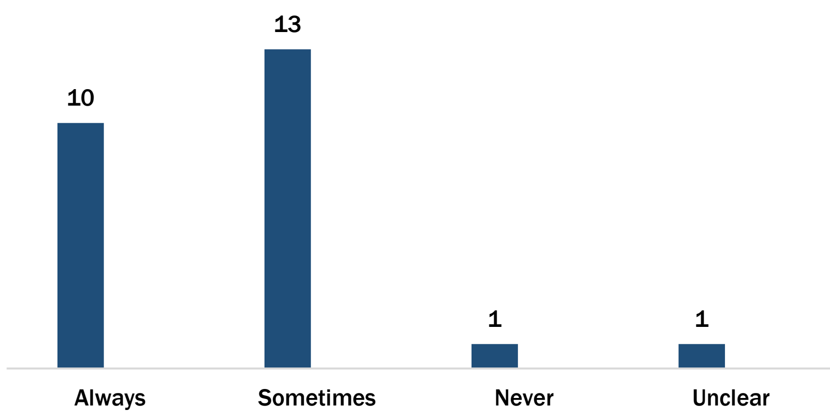
Anthropometric	Biochemical	Clinical/ Health/ Medical	Dietary	Other
• Underweight • Low birthweight • High maternal weight gain	• Low hematocrit/ hemoglobin	• Gestational diabetes • Lack of or inadequate prenatal care	• Failure to meet DGA • Inappropriate nutrition practices	• Breastfeeding infant of woman at nutritional risk • Homelessness

Note: DGA = Dietary Guidelines for Americans

WIC site directors at 23 of the 25 in-person sites noted in interviews that the MIS "always" or "sometimes" automatically determines the nutritional risks based on the nutrition assessment information entered by WIC staff (see Figure 3-4). In about 30 percent of observations, CPAs added additional nutritional risks to a participant's case that were not generated by the MIS (see Table 3-5). According to the observation data, some examples of manually entered risks included inappropriate nutrition practices, history of preterm or early term delivery, and other medical conditions. How nutritional risk codes were recorded in the MIS did not differ between in-person and observed remote appointments.

> *"I think we pretty much cover all of the risk[s]. I mean, it is an automated system that we use. ... if we see there's a code that's not on there, we can manually add it. But for the most part, the [MIS] ... based on how we answer the questions, [will] assign that automatic risk code." – Clinic staff*

Figure 3-4. Number of in-person sites where the site director indicated the WIC management information system (MIS) always, sometimes, or never determines nutritional risks



Note: In-person data collected summer and fall 2022. N = 25.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Site Director Interviews, question 5a. Tabulations are not weighted. Data tabulated from site director interviews.

Table 3-5. Recording nutrition risk codes in the management information system (MIS), by assessment mode

Of all the nutrition risks identified for participants, which ones...	Identified nutrition risks			
	Remote		In-person	
	Number	Percentage	Number	Percentage
Were automatically generated by the MIS	565	67.9	615	66.8
Were entered manually into the MIS	265	31.9	300	32.6
Were not included in the MIS record for the participant (for whatever reason)	2	0.2	6	0.7
Number of nutrition risks identified**	832		921	

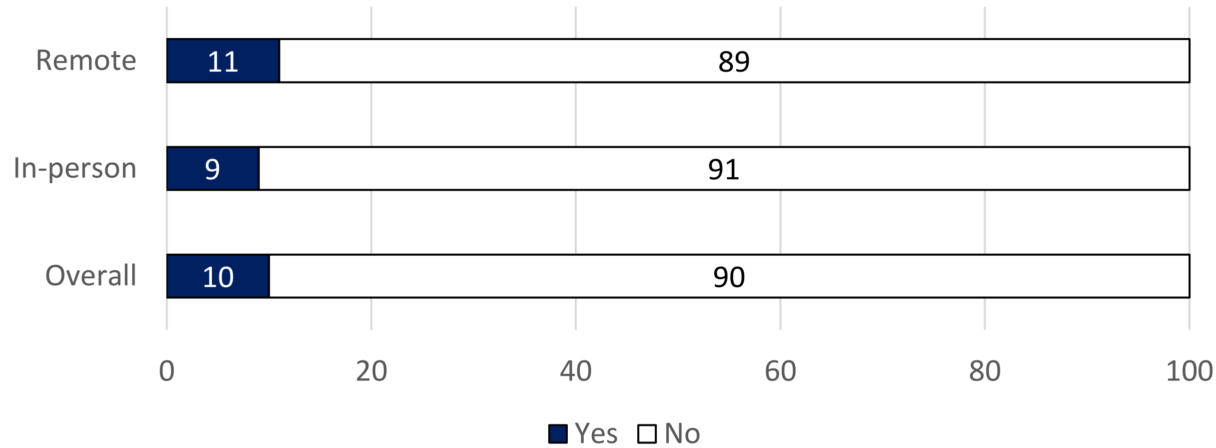
*Indicates in-person versus remote differences that are significant at $p \leq 0.05$.
**There were 8 identified risk codes for which this information was not collected during remote observations and 11 during in-person observations.
Note: Percentage totals may not add to 100 due to rounding.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide, remote observations were conducted fall 2021- spring 2022 and in-person observations were conducted summer and fall 2022, Questions to ask after the observation, question 6 and Nutrition Risks Checklist. Tabulations are not weighted. See appendix E, Table 44.

Documenting Risk Criteria

The vast majority of WIC staff interviewed during the remote data collection and during the in-person data collection stated that they did not limit the number of risk criteria documented for any single participant (89 percent and 91 percent, respectively) (see Figure 3-5). This is consistent with the observation data. For observed in-person appointments, 76.0 percent of observed clinics assigned nutritional risk codes in all risk categories; the remaining 24.0 percent assigned risk codes in 4 of the 5 risk categories across the observed appointments (see Table 3-6), suggesting that they covered the full range of topics when determining risk codes. The findings vary for remote appointments because staff rarely assigned biochemical risks, as they did not have access to bloodwork data. However, there was at least one observed appointment with an assigned anthropometric risk in all clinics during the remote data collection. These may have been automatically generated risks based on self-reported data. Only 6.7 percent of clinics observed during the remote data collection assigned risk codes in all 5 risk code categories; however, 73.3 percent assigned codes in 4 of the 5 categories and another 13.3 percent assigned codes in 3 of 5 risk code categories. Among the approximately 10 percent of staff who did limit the number of risk criteria documented, interview findings suggest two primary reasons: (1) the MIS had a limit on the number of risks that could be entered; and (2) staff decided to limit the documented risks to those they deemed where most important.

"I go through the assessment, and any risk that comes up, I always add them. I don't limit them at all." – Clinic staff

Figure 3-5. Do staff limit the number of risk criteria documented for any single participant? (percentage of WIC staff)



* Indicates in-person versus remote differences are significant at p≤0.05.
Notes: Remote data collected fall 2021–spring 2022; in-person data collected summer and fall 2022. N remote = 87; N in-person = 85; N overall = 172. Overall combines remote and in-person data.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Staff Interviews, question 7c_1. Tabulations are not weighted. See appendix C, Table 6.

Table 3-6. Percentage of clinics reporting risk codes in each risk code category

Nutritional risk category	Percentage of clinics with...		
	Remote	In-person	Overall
Anthropometric risks	100	100	100
Biochemical risks	6.7*	80.0	52.5
Clinical/health/medical risks	93.3	100	100
Dietary risks	100	100	100
Other risks	80.0	96.0	87.5
All risk categories	6.7*	76.0	50.0
4 of 5 risk categories	73.3*	24.0	40.0
3 of 5 risk categories	13.3	0.0	10.0
2 of 5 risk categories	6.7	0.0	0.0
1 of 5 risk categories	0.0	0.0	0.0
Number of observed clinics**	30	25	40

* Indicates in-person versus remote differences that are significant at p≤0.05..
** Fifteen clinics were part of both the remote and in-person data collection. Data was collected at a total of 40 clinics.
Notes: Percentage totals may not add to 100 due to rounding. The remote data collection included 299 observed appointments and the in-person data collection included 261 observed appointments. Results indicate the percentage of clinics where at least one observed appointment resulted in a risk in each category.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observations of Nutrition Services Components of WIC Certification. Tabulations are not weighted. See appendix E, Table 49.

3.1d Prioritizing Risks

Prioritizing risks plays an important part in the assessment process. According to VENA guidance, WIC staff should prioritize nutrition education so as not to overwhelm participants.[14] Descriptions of how staff prioritize risks aligned with VENA guidance. Staff shared that they typically only discuss the top two or three risks with participants to not overwhelm them with information. They noted that they did not want to discourage participants or caregivers or make them feel that they were doing something wrong. Other staff shared they prioritized risks because the length of the appointment did not allow for a longer discussion and to maintain clarity during the appointment. In prioritizing risks, WIC staff are really choosing how to provide tailored nutrition education. A comprehensive discussion of nutrition education tailoring based on prioritized risks is included in section 4.2.

3.1e What Staff Do When Risks Change

Staff conduct a complete nutrition assessment at every certification and recertification visit. Risks that were not identified at the initial certification visit may be added at a subsequent recertification appointment, as staff are always evaluating the participant's needs, health, and diet. Staff noted that, as time allows, they review risks generated at the previous certification appointment before a participant comes in for their recertification. Staff primarily conduct this review by reading through a participant's case notes or manually reviewing the participant's case in the MIS, as there are no standard reports that facilitate tracking risks over time. The only report that clinic staff typically have access to is a growth chart.

According to most interviewed staff, situations where staff need to adjust a participant's benefits after risks change typically occur if a child or infant either develops or grows out of an allergy. For example, a new risk for lactose intolerance could trigger a change in the child's food package, from cow's milk to lactose-free milk or soy-based beverage. A prescription for a specialty formula can also result in an adjustment to an infant's food package. Staff may also adjust the fat content of milk in a participant's food package if there is a change in their weight.

> *"Food allergies are very common, [and require] adjusting their food packages. And then, [changes in] their weight status is very common. [These are] the two main [items] that I adjusted their food packages for." – Clinic staff*

Staff also noted that nutrition education is tailored for every appointment depending on the participant's age or certification category (e.g., a breastfeeding woman will receive different nutrition education than a pregnant woman). Staff felt that providing tailored nutrition education

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[14] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) – Updated guidance* (p. 21).

based on each participant's unique circumstances was one of the most important aspects of the WIC appointment.

> *"I think that the [nutrition] education always changes based on what's going on in that moment. For me, that's what's pertinent at hand. That's what I always address ... And then as far as the benefits go, I feel like most of the time the [food package], they're kind of limited. There's only so much we can do with the [food package]. But absolutely, if something would make sense to change, then I would absolutely adjust that at any time throughout the WIC process." – Clinic staff*

3.1f Tools Used

Over half of staff used only the MIS to complete the nutrition assessment (56 percent in the remote data collection and 54 percent in the in-person data collection; see Table 3-7). The remainder of staff used the MIS in conjunction with other tools to complete the assessment. Examples of other tools included: (1) cups or handouts to show portion sizes to, for example, learn how many ounces of juice children were regularly consuming; and (2) printouts from State WIC manuals or other "cheat sheets" to help assign risk codes or look up more detailed information. Staff in one State requested participants complete a health history questionnaire upon arrival at the clinic (or before their remote appointment conducted via phone). Staff noted that most of the questions in the health history questionnaire were duplicated in the State MIS, making the process of completing a paper form and then entering the information into the MIS inefficient for both participants and staff.

Table 3-7. Tools used by WIC staff to complete nutrition assessments, by assessment mode

Tools used	Remote		In-person	
	Number of respondents	Percentage	Number of respondents	Percentage
Management information system (MIS)	50	56.2	47	54.0
Checklist	10	11.2	–	–
MIS + Checklist	13	14.6	17	19.5
MIS + Other**	14	15.7	23	26.4
MIS + Checklist + Other**	2	2.2	–	–
Number of staff respondents	89		87	

** Other tools included questionnaires that are not within the MIS, the risk code definition sheet, discussion scripts, nutrition care plans, birthing plans for pregnant mothers, breastfeeding assessment sheets, and "cheat sheets" with additional questions. Different response categories were used in the two data collection periods. Since response categories varied, we did not conduct significance testing for this comparison.

Notes: Remote data collected fall 2021–spring 2022; in-person data collected summer and fall 2022. Respondents reported all that apply. "—" indicates no data for item.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Staff Interviews, question 8. Tabulations are not weighted. See appendix C, Table 7.

3.1g Breastfeeding Assessment

Interviews with site directors provided information on how staff at each clinic conducted the breastfeeding assessment. Regardless of the method, staff primarily used their MIS to guide the assessment.

According to descriptions provided by interviewed staff, clinics used two primary methods to conduct the breastfeeding assessment. First, in some clinics, a breastfeeding counselor, who was not the CPA conducting the certification or recertification appointment, would conduct the breastfeeding assessment. The participant would either see the breastfeeding counselor after their certification appointment or would talk with them via phone after the appointment if the counselor was unavailable. In many clinics using this method, the counselor was only in person at the clinic part-time. Second, in the other clinics, the CPA who completed the certification appointment also conducted the breastfeeding assessment. If needed (i.e., the participant required more specialized assistance), the CPA could provide a referral to a lactation consultant or a peer counselor. Most pregnant women received a breastfeeding assessment. Breastfeeding assessments were not observed for only a small number of pregnant women: seven for observed in-person appointments and one for observed remote appointments.

Table 3-8 provides an overview of the topics discussed during the breastfeeding assessment. WIC staff asked about plans for breastfeeding in approximately 89 percent of observed appointments for pregnant or breastfeeding participants. Staff less commonly asked about the pregnant or breastfeeding participant's knowledge of breastfeeding (65 percent) or thoughts and concerns regarding breastfeeding (78 percent). Differences between remote and in-person participants are not statistically significant.

Table 3-8. Topics discussed during the breastfeeding component of the nutrition assessment for pregnant women and breastfeeding women, by assessment mode

Topics discussed[1]	Appointment observations					
	Remote		In-person		Overall	
	Number	Percentage	Number	Percentage	Number	Percentage
The woman's knowledge about breastfeeding						
Yes	82	67.8	81	61.8	163	64.7
No	39	32.2	50	38.2	89	35.3
Number of observed appointments	121		131		252	
The woman's thoughts and concerns regarding breastfeeding						
Yes	96	80.7	98	75.4	1947	77.9
No	23	19.3	32	24.6	55	22.1
Number of observed appointments	119		130		249	

Table 3-8. Topics discussed during the breastfeeding component of the nutrition assessment for pregnant women and breastfeeding women, by assessment mode (continued)

Topics discussed[1]	Appointment observations					
	Remote		In-person		Overall	
	Number	Percentage	Number	Percentage	Number	Percentage
The woman's plans for breastfeeding						
Yes	103	88.0	117	89.3	220	88.7
No	14	12.0	14	10.7	28	11.3
Number of observed appointments	117		131		248	

*Indicates in-person versus remote differences that are significant at p≤0.05.
[1]These questions were completed only for assessments involving pregnant women or postpartum breastfeeding women.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021- spring 2022, and in-person observations were conducted summer and fall 2022. Breastfeeding Component, questions 1-5. Tabulations are not weighted. See appendix E, table 29.

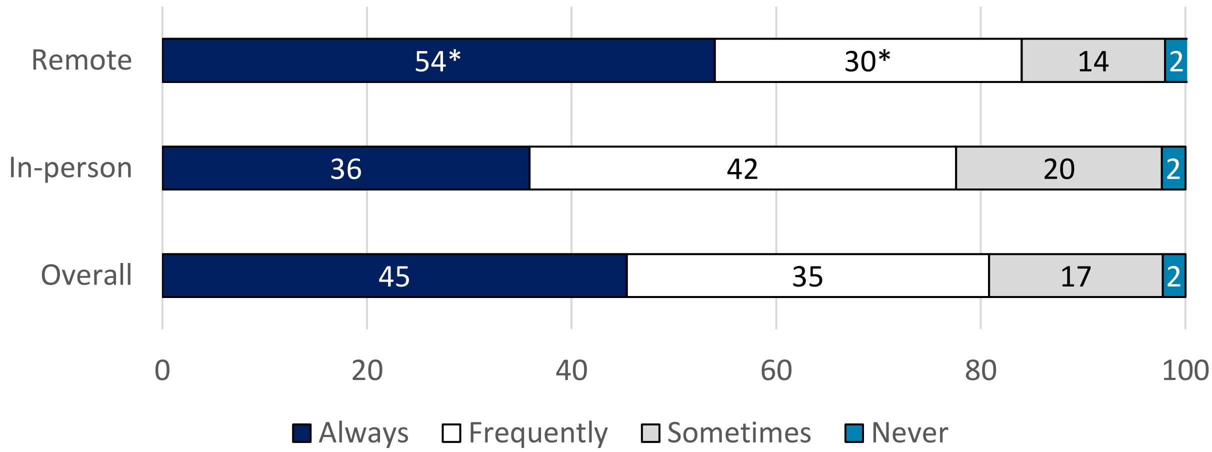
3.2 Clarifying Information

WIC staff asked follow-up or probing questions either always or frequently in approximately 80 percent of observed appointments (see Figure 3-6). When asked during interviews how they clarified unclear information, staff shared that they asked follow-up questions, or reworded or rephrased their question. Many WIC staff also noted using open-ended questions to get the best and most informative answers. Some staff noted they would ask participants to repeat what they said if it was unclear. One staff member said they used active listening to clarify information and ensure they fully understood the participant. Several staff noted that there are also limits to the amount of information a participant will share, and staff should work on creating a comfortable atmosphere so that participants feel safe sharing their medical and dietary history.

> *"I will rephrase my question. Usually, participants are very clear [when] they don't understand a question. So they will go ahead and just tell you, 'I don't understand your question. Can you repeat that question?' And I will just go ahead and rephrase it. So that's kind of my thing. But usually, I do not have those kind of situations because I always try to use a friendly vocabulary, something that the participant will totally understand. … And also with my education, I try to be very informative, but also very simple. That way I'm ensuring that the participant is receiving the information that they need. And they can understand [it] too." – Clinic staff*

> *"Usually I just say, 'Can you tell me more about that?' or 'Can you elaborate?' I also try to rephrase [the] question in a different way because they might not have understood the way I asked the question. I will use a different term or word to make myself better understood." – Clinic staff*

Figure 3-6. How often did the WIC Competent Professional Authority (CPA) ask follow-up probing questions to clarify and get more details when reviewing or asking questions from an assessment questionnaire? (percentage of observations)



*Indicates in-person versus remote differences that are significant at p≤0.05.
Notes: Percentage totals may not add to 100 due to rounding. N remote = 289; N in-person = 259; N overall = 548. Overall combines remote and in-person data.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Start of the Observation, Gathering Information for Nutrition Risk Assessment, question 5. Tabulations are not weighted. See appendix E, Table 50.

3.3 Determining High Risk

According to the Local Agency Director Survey, 87.5 percent of the 40 local agencies selected for remote and in-person data collection indicated that the State agency determines which nutritional risk criteria are considered high risk (see Table 3.9); these designations are often programmed into the MIS. Staff noted that, as needed, they generally can also manually designate someone as high risk for risk codes that they manually add to the record.

The nutrition assessment process is similar for high-risk and non-high-risk participants. Key differences include: (1) staff asking high-risk participants more nuanced questions; (2) focusing nutrition education specifically on nutritional risk(s) that resulted in the assignment of a high-risk code; and (3) providing referrals more frequently, as applicable. In addition, staff typically see high-risk participants for follow-up appointments more frequently than non-high-risk participants. In some clinics that participated in the in-person data collection, high-risk participants must be seen in person for their mid-certification appointments rather than virtually, which was the norm for non-high-risk participants at those clinics during the study period.

Staff were asked about situations where they routinely follow up on nutrition and health goals and referrals. Over 80 percent of staff in the remote data collection and over 97 percent of staff in the in-person data collection noted that they routinely follow up on health goals when the participant is high risk (see appendix H, Table H-4). A large percentage of staff in the in-person data collection also noted that they follow-up on referrals when the participant is high risk (87 percent; see appendix H, Table H-5); however about 68 percent of staff in observed remote appointments reported doing so.

At most clinics, all staff see high-risk participants. However, in some clinics, only select staff conduct appointments with high-risk participants. This difference in clinic policy can be explained by the types of staff at each clinic. For example, in clinics where all CPAs are registered dieticians, all staff see high-risk participants. In clinics where some CPA staff may have other credentials, all staff can see a participant for their initial certification appointment, and if the participant is deemed high-risk, all follow-up (e.g., mid-certification appointment, recertification) is conducted by a registered dietician.

> *"[With high- risk participants we] are far more focused on… the serious stuff that we've really got to discuss. And that's where you see it in the care plan, [which] really shows the difference between a high-risk and a non-high-risk. You'll also notice that when it comes to the nutrition [education] and goals because the nutrition education section is going to try to find things in there that line up with [the high-risk]. But the goal will, for sure, [will] usually be a typed, customized goal for that person." – Clinic staff*

Table 3-9. Determining who is high risk in the 40 local agencies selected for remote and in-person data collection

High-risk nutritional risks	Local agencies	
	Number	Percentage
Who determines which nutritional risk criteria are considered high risk		
The State agency	35	87.5
The local agency	0	0.0
Both the State agency and local agency	5	12.5
We do not use high risk codes	0	0.0
Number of local agencies	40	

Note: Percentage totals may not add to 100 due to rounding.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Local Agency Director Survey. Tabulations are not weighted.

3.4 Determining Risks Remotely Versus In-Person

Remote WIC certification appointments were conducted primarily by phone. One local agency also used text messages upon participant request, and four local agencies (located within the same State[15]) used curbside appointments, where participants came to the clinic parking lot, talked to staff by phone to conduct the assessment, and had their EBT cards refilled. In some local agencies, staff were able to work from home, while in others, staff worked from the clinic but still conducted appointments via phone with participants.

The nutrition assessment was conducted in a similar manner in both remote and in-person appointments. Staff used the MIS to guide the assessment, which ensured that they asked the same questions, regardless of the mode of the appointment. The overall processes for determining and documenting risk criteria, prioritizing risks, clarifying information, and determining high-risk status did not vary greatly between remote and in-person appointments. Though staff asked similar questions in remote appointments, they typically were not able to collect all the required anthropometric and bloodwork information from participants.[16] WIC staff almost never obtained height or length and weight measurements on the day of the visit for remote appointments (0.3 percent of observed remote visits; see Table 3-2), which was in stark contrast to in-person appointments, where 87 percent of observations included taking measurements. The same was true for hemoglobin/hematocrit levels, which almost always were not collected during remote appointments.

> *"The only thing that's really different … doing [appointments] remote and then doing [them in] the office [is]… that we can't really get accurate … height and weight measurements, because we are not doing measurements in office. ... But for the most part, the risks come from the nutrition interviews that we fill out. And then the system assigns the risk that way."* – Clinic staff

Interviewed staff noted some unique challenges associated with remote appointments. Some staff noted that participants were more distracted during remote appointments, and it was more difficult to establish rapport. In particular, one staff member noted that it was more difficult to ask sensitive questions about domestic violence or food insecurity because of the challenges establishing rapport in the remote environment. Staff also missed the ability to see participants and visually assess their well-being. Lastly, missing anthropometric and bloodwork data was a challenge, and staff often felt they were not able to conduct a complete nutrition assessment. One staff member suggested that FNS should help facilitate partnerships or data sharing agreements with healthcare providers so that WIC clinics can have access to anthropometric and bloodwork data, but still provide participants and caregivers the flexibility of remote appointments.

> *"I would say [the remote appointment is] a little bit, of course, less personal because we're not able to … show [participants] the growth charts. We have several handouts here that we're able to give them in person. Now we can upload*

[15] During the study period, this State agency operated an offline EBT system that required EBT cards to be reloaded in person, at the clinic.

[16] The physical presence waiver enabled local agencies to defer certain anthropometric (i.e., height/length and weight) and bloodwork requirements used to determine nutritional risk.

them through email and email them out that way; it's just a little bit more of a challenge to go that route than, of course, it is in person. So it's a little bit harder to kind of get the point across, maybe, as well as you would like to. And [the participants/caregivers] just have a lot of distractions going on, the TV, other people in the house, kids, whatever; [the cellphone] connections, that just doesn't get clearly put across compared to in-person." – Clinic staff

4. How Staff Tailor Nutrition Services

Key Findings

- Food package tailoring was typically based on information collected during the risk assessment about food consumption patterns, preferences, and allergies.
- The majority of observed appointments did not result in a tailored food package. Differences between remote and in-person observed appointments in the percentage of observations with a tailored food package were not statistically significant.
- Several staff expressed frustration with the amount of tailoring they could do within the food package. Staff suggested that additional options be made available to accommodate cultural preferences and allergies.
- Nearly all interviewed WIC staff reported tailoring nutrition education by varying the topics discussed according to risk assessment findings (92 percent for remote appointments, 99 percent for in-person appointments).
- Several staff members noted that the lack of available height and weight information in remote appointments limited their ability to provide nutrition education on how to maintain a healthy weight, since they could not be sure if a participant was underweight, overweight, or on an appropriate growth trajectory.
- For approximately half of observed appointments, the observer documented that WIC staff identified priorities for nutrition education using their judgment (50 percent of remote appointments, 44 percent of in-person appointments) and about one third documented that risks were prioritized based on a discussion with the participant or caregiver to determine their priorities (34 percent of remote appointments, 31 percent of in-person appointments).
- When staff were asked about how they provide nutrition education, most described focusing on a few risks during an appointment, rather than trying to broach education for every single risk in an effort to save time and not overwhelm participants.
- Just over half of observed appointments involved WIC staff helping the participant set a personal behavior change goal based on participant input (59 percent for remote appointments, 55 percent for in-person appointments).
- The MIS does not necessarily enhance or prompt tailoring but is used primarily to document the tailoring that occurred.
- Clinics vary widely in the amount of tailoring they do in both the remote and in-person environments. While, overall, 43 percent of clinic observations included a tailored food package, that value ranged from 0 to 100 percent for individual clinics in the in-person environment. The percentage of identified risks addressed by education and referrals also varied greatly across clinics.
- Regression findings support the hypothesis that nutrition risks drive tailored food packages, nutrition education, and referrals.

The WIC nutrition assessment described in chapter 3 is the starting point for tailoring the WIC nutrition services provided to individual participants. The assessment is followed by benefit tailoring. VENA guidance describes the three activities that make up benefit tailoring as follows:

- customizing counseling strategies (e.g., nutrition/breastfeeding education, guided goal setting, affirmations) that address a participant’s needs and concerns;
- tailoring the food package to address nutrition needs and breastfeeding status and preferences, including those based on the participant’s culture; and
- making appropriate referrals.[17]

This chapter of the report describes how staff tailor various nutrition services to a participant’s needs. It brings together quantitative data on tailored benefits from the observation forms with qualitative information from site director, staff, and participant interviews. The first five sections of this chapter summarize how tailoring occurs during individual components of the appointment: food package issuance, nutrition education, breastfeeding counseling, setting goals, and making referrals. The remaining three sections summarize the use of the MIS in tailoring, tailoring consistency across clinics, and differences between tailoring practices for remote and in-person visits.

Although aspects of the appointment are presented separately, staff did not divide the appointment into distinct parts. Appointments were typically conversational; the nutrition education, breastfeeding counseling, goal setting, and referrals could happen in any order depending on what questions the participant had or what risks emerged. One staff member noted that they try to “address the risks as we go through” to avoid “wait[ing] until the end to go over [their risks] and bombard them with lots of recommendations.”

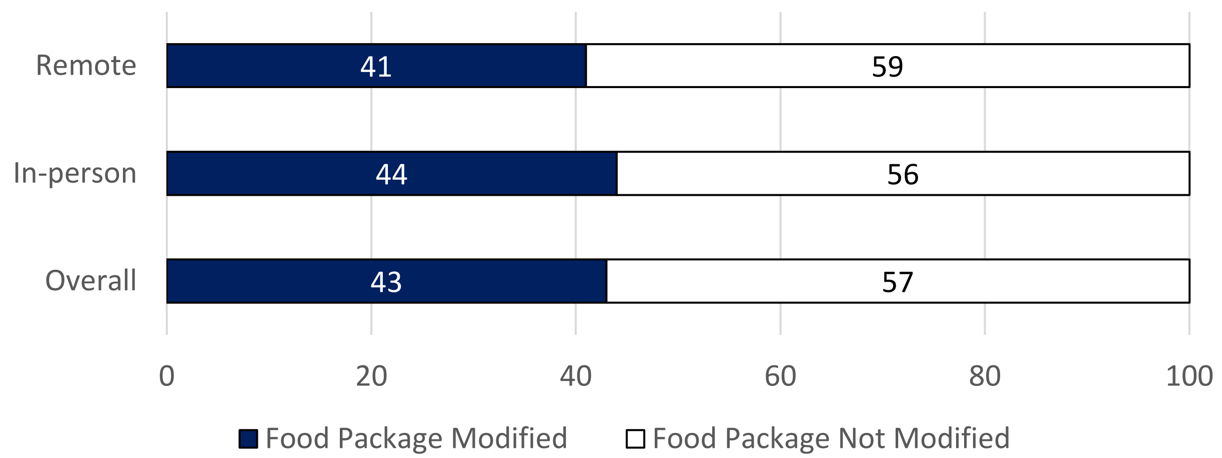
4.1 Tailoring the Food Package

At the end of each certification and recertification appointment, staff issued participants their food package benefits. Food package tailoring was typically based on information collected during the risk assessment about food consumption patterns, preferences, and allergies. Based on staff interview data, staff asked additional follow-up questions to glean more information about dietary preferences. Staff also sometimes printed out or showed participants a list of the foods included in the package and asked directly if any changes were needed (e.g., lactose-free milk instead of regular milk). Less commonly, staff reviewed participants’ previous benefit redemptions to see if they had any under-redeemed items. There were two described intents of this practice: (1) ensuring that participants were not having challenges with finding or redeeming WIC-eligible foods, and (2) removing foods that participants did not want or need.

[17] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) – Updated guidance* (p. 25).

After each observed appointment, the observer met briefly with the staff member who conducted the appointment to ask a few follow-up questions, one of which was whether staff had made any modifications to the standard food package prescription based on information the participant shared during the assessment. According to these data, the majority of appointments did not result in a tailored food package. Differences between in-person and remote appointments were not statistically significant (44 percent and 41 percent, respectively; see Figure 4-1).

Figure 4-1. Reported modifications made to the standard food package prescription based on the information learned during the nutrition assessment among observed appointments, by assessment mode (percentage of observations)



* Indicates in-person versus remote differences that are significant at $p \leq 0.05$.

Notes: Tabulations are not weighted. Number of observations equals 258 for remote, 261 for in-person and 519 overall. Overall combines remote and in-person data. Data from one State agency is not included in this analysis. Clinics in this State agency were observed only for remote data collection and staff at these clinics reported no tailored food packages, which may have been due to how they defined a tailored food package.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021-spring 2022, and in-person observations were conducted summer and fall 2022. Questions to ask after the observation, question 3. See appendix E, Table 40.

Based on staff interview data, there were no clear differences in the tailoring process for the food package between in-person and remote visits. Staff, however, differed in their perception of what they considered a “modification to the standard food package prescription.” Some staff considered adjusting the ratio of milk, yogurt, and cheese based on participant preferences to be tailoring, while others did not consider this to be a tailored modification since it is allowed within the standard food package. Staff might instead only consider special cases to be tailoring, such as where a medical or allergy-related exception was made (e.g., issuing PediaSure when a child is diagnosed with “failure to thrive” by a physician). Clinics in one State agency that participated in the remote, but not the in-person, data collection reported no food package tailoring for all observed appointments. These clinics were removed from the analysis presented in Figure 4.1.

Examples of Food Package Tailoring

The dairy or dairy alternative food categories (i.e., cow's milk, yogurt, cheese, soy-based beverage) were the most common examples of tailoring in the WIC food package. Various kinds of milk are allowable, including cultured milk, evaporated milk, and lactose-free milk.[18] Fluid milk can also be substituted for yogurt, cheese, soy beverage, and tofu;[19] sometimes participants chose to receive a combination of these items. One site director described the process for obtaining needed information from the participant to tailor the food package, sharing how the options available within the dairy category can help support cultural food preferences:

> *"Our Haitian Creole clients, we know a lot of times [they] prefer the evaporated milk on their packages. So that is something we'll ask, especially that cultural population, what kind of milk they want…. We can kind of go through the list of foods that the client will get, and if they know that they definitely won't use it, we'll take that off. If there's certain preferences like the evaporated milk instead of the gallon milk, we can make that. But it really is just asking the client what those preferences are." – Clinic staff*

Another common modification to the food package was adjusting the type or amount of infant formula. This was usually based on the caregiver's preference, information from a healthcare provider about the recommended type of formula, or information about how much a caregiver is breastfeeding. One staff member described how tailoring the amount of formula for a caregiver who is partially breastfeeding requires extensive discussion and follow-up to get the amount correct:

> *"Breastfeeding moms… their food package takes a lot of discussion because sometimes you're going to have a mom that's breastfeeding, but she's also getting a little bit of formula. So we have to figure out how much formula [the mom] is offering the baby and make an adjustment. We put in [the amount of] baby formula for a day… and then we kind of have to go over that with mom. 'This is how many ounces we can make. Do we think this is going to be enough?' Maybe make a note and call mom in a month and see, 'Do you have enough formula? Did you have too much formula? Maybe are you breastfeeding more now?' So those are things we do kind of behind the scenes that aren't necessarily scheduled as a WIC appointment or brought in for an appointment." – Clinic staff*

When staff were asked about how they accommodate religious or cultural food preferences through food package tailoring, a few mentioned issuing soy infant formula for participants who

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[18] U.S. Department of Agriculture, Food and Nutrition Service. (2022). *WIC Food Packages – Regulatory Requirements for WIC-Eligible Foods.* Available at: https://www.fns.usda.gov/wic/wic-food-packages-regulatory-requirements-wic-eligible-foods.

[19] U.S. Department of Agriculture, Food and Nutrition Service. (2022). *WIC Food Packages - Maximum Monthly Allowances.* Available at: https://www.fns.usda.gov/wic/food-packages-maximum-monthly-allowances.

follow a halal diet or providing more milk for participants following a kosher diet since WIC-eligible kosher cheese can be hard to find. Many staff members noted the food package had limited tailoring options to accommodate individual or cultural food preferences.

Other less common examples of food package tailoring included offering a choice between peanut butter and beans, providing additional CVB in place of jarred infant fruits and vegetables, removing foods based on preferences or allergies, and making changes based on medical conditions. Examples of changes based on medical condition include swapping out 1% milk for 2% milk for an underweight child or issuing a special type of formula for an infant who was diagnosed with "failure to thrive." WIC staff are required to have documentation from a health care provider to make changes like these.

One staff member expressed hesitancy to remove any items from the WIC food package even if the participant shared that they did not want it:

> *"If they're like, "Oh, we don't want the juice," we could take it out… I'm hesitant always to take food off if they're like, 'Well, we won't use it.' But what if you do? What if you do and then we took it off and it wasn't there for you to use if you wanted it? So sometimes, it's easier just to say, 'Well, let's just keep it on there. And if you don't think you'll use it, don't buy it. But then it's there for you to use if you would need it for some reason because you are eligible to be getting it.'" – Clinic staff*

Staff Perceptions of Food Package Tailoring Options

Among WIC staff, there were contrasting viewpoints as to how much tailoring is possible within the WIC food package. Several staff expressed frustration that they could remove items from the WIC food package that families did not consume but could not add in replacements, particularly regarding cultural food preferences (although staff did not suggest alternative cultural foods as replacements.

> *"And when I ask them, 'Take me through a day; what do you normally eat throughout the day?' That's when I'll oftentimes-- if I start hearing things that are much different than what I'm normally hearing, I'll kind of ask for more information about that. But unfortunately, the WIC food package is not super tailorable to a lot of the other cultural food [preferences]. A lot of families don't eat certain foods. We can take the [foods] off of the food package, but we don't really have a lot of replacements." – Clinic staff*

> *"So, a lot of times, in regards to their traditional foods, kind of their eating habits, I really wish we could do more tailoring in regards to what their typical foods would be, but, as you know, we have to work with what we have in regards to the foods available." – Clinic staff*

Several staff and participants suggested including additional foods to improve the food package and facilitate tailoring. Among these suggestions, a common example was improving the ability to tailor the package for families with allergies.

> *"It's so limited what we can do, which I understand, but then again, if you're removing a major food group, sometimes there's so many allergies that that person can be left with basically nothing on their food package and we still can't increase fruits and vegetables or increase the eggs that they have because we've removed the dairy. So if they're allergic to milk, we can't change it. There's only soy milk. Only soy milk if you're allergic to milk. You can't do oat milk or rice milk or almond milk. So I know that they need to be reviewed based on their nutritional status and things like that to make sure they're effective, but just making sure to keep up with that type of thing. Because especially if things are hard to find, like sometimes they can't find soy milk. So as opposed to saying, okay, a milk alternative, which could be a soy milk or rice milk and oat milk, you're specifying that and then if they can't find it, they can't get it. And they miss out on these benefits." – Clinic staff*

One staff member suggested being able to modify the format of foods allowed to cater to individual circumstances:

> *"The options for our food package don't allow me to tailor to as many needs as would be helpful … I may get all the information I need to tailor a food package, but I cannot tailor the food package a certain way. Maybe I have a baby that's completely off of baby foods by 10 months old and I want to drop those off … I had a child [with Down syndrome] on puree at 2 or 3 years of age, and I can't provide those. Now, we were still supplying foods that could be pureed and dietary supplements, so we're still immensely helping that family." – Clinic staff*

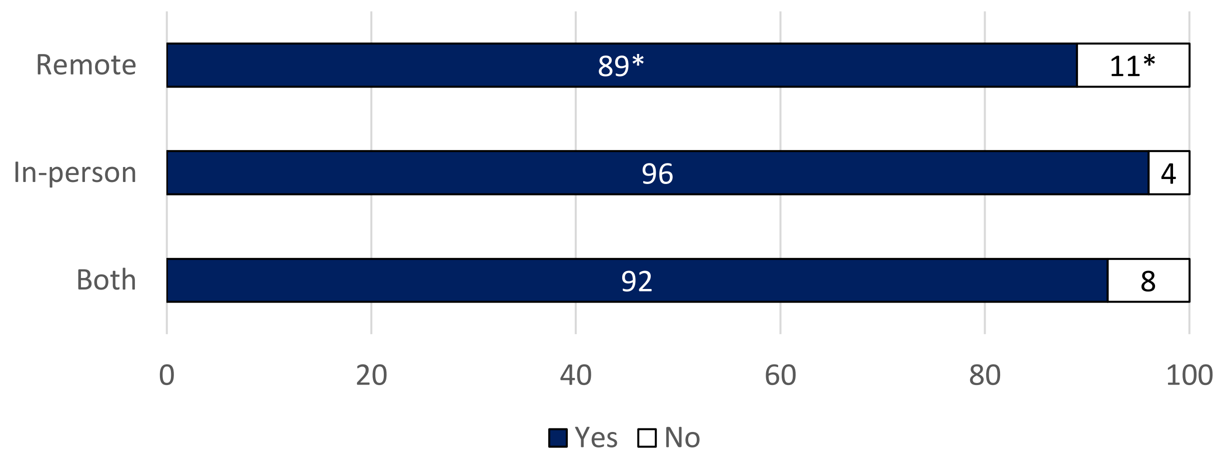
Another staff member also requested more resources from WIC to know how to tailor based on allergies and preferences:

> *"I think maybe more resources for us about food allergies, how to kind of tailor the package that way. Or more resources on how WIC wants to approach tailoring packages for vegans. Or maybe even just preference for not wanting dairy without necessarily having GI [gastrointestinal] issues with dairy, but just not wanting it. I think more resources about those would maybe be helpful." – Clinic staff*

4.2 Tailoring Nutrition Education

Nutrition education was typically provided during or after the risk assessment. In nearly all cases, this meant that the same WIC staff member who conducted the assessment was also providing nutrition education. Remote appointments were significantly less likely to have nutrition education provided by the WIC CPA who conducted the assessment than were in-person appointments, although percentages were high for both (89 percent for remote appointments, 96 percent for in-person appointments; see Figure 4-2). For a small number of remote visits, nutrition education was scheduled to be provided remotely at another time, and for a small number of in-person visits, nutrition education was provided by a different WIC staff member (see appendix E, Table 30). This small proportion of nutrition education sessions conducted by other staff members may be due to the risk status of participants; participants deemed high-risk were typically directed to see (or talk remotely with) registered dietitians (RDs) for their nutrition education.

Figure 4-2. Providing nutrition education and counseling during the appointment, by assessment mode



*Indicates in-person versus remote differences that are significant at p≤0.05.
Note: Number of observations equals 301 for remote, 261 for in-person, and 562 overall.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Nutrition Education/Counseling, question 1. Tabulations are not weighted. See appendix E, Table 30.

The most common way that staff tailored nutrition education was by varying the topics discussed according to the individual's interests, concerns, and identified nutrition risks. Nearly all interviewed WIC staff reported varying the topics discussed according to risk assessment findings (92 percent for remote appointments, 99 percent for in-person appointments; see Table 4-1).

Most staff also varied the counseling methods they used when providing nutrition education (61 percent for remote appointments, 87 percent for in-person appointments; see Table 4-1). The most common modifications included adjusting their counseling approach based on a participant's level of interest, comprehension, or experience. For example, an appointment for a first-time pregnancy may last longer and include more detailed information compared to an appointment for a caregiver who had previously participated in WIC and has had multiple pregnancies. Staff members described the factors they consider when adjusting their counseling approach:

> *"[I would modify my counseling methods] based on her answers, what are the questions that have popped up, the tone of her voice. Okay, this one doesn't have any interest in anything I have to say, keep it short and sweet. Or this one has a gazillion questions, so I'm going to take … as long as it takes." – Clinic staff*

> *"I really try not to sound like a recording. I will talk about things differently. I try to put things in … terms that I think that they will understand based on where I'm guessing that they're coming from, their educational level, their cognitive abilities, to the best of my ability." – Clinic staff*

In addition, some staff reported tailoring the mode of education delivery (39 percent for remote appointments, 70 percent for in-person appointments; see Table 4-1). Modes of delivery included verbal education, pamphlets/written materials, video links, or recommendations for content to access on the WIC app.

There were significant differences between the amount of tailoring for topics, counseling methods, and the mode of delivery between remote and in-person visits. It is unclear why these differences occurred, as there were no major differences between the nutrition education approaches or examples of modifications that staff described for remote compared to in-person visits. It may be that there was something about the remote environment that made it more challenging to engage in any kind of variation from the standard nutrition education approach. At the time of data collection, clinics had not returned to the pre-pandemic educational delivery modes. In particular, while several clinics had classrooms for group education, they were generally not in use.

Table 4-1. Percentage of staff reporting how they modify nutrition education based on nutrition assessment findings

Modifications made to nutrition education	Remote		In-person	
	Total number of respondents	Percentage	Total number of respondents	Percentage
Topics discussed	88	92.0*	86	98.8
Counseling methods used	88	61.4*	83	86.7
Mode of delivery	88	38.6*	80	70.0
Other	88	8.0	66	15.2

* Indicates in-person versus remote differences that are significant at p≤0.05.
Note: Respondents reported all that apply.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Staff Interviews, question 12. Tabulations are not weighted. Remote data collected fall 2021 - spring 2022; in-person data collected summer and fall 2022. See appendix C, Table 8.

Staff conducting remote appointments could not be sure of the accuracy of self-reported height and weight data or sometimes did not have any height and weight data at all. Several staff members noted this lack of information limited their ability to provide nutrition education on how to maintain a healthy weight, since they could not be sure if a participant was underweight, overweight, or on an appropriate growth trajectory.

Choosing Which Topics to Cover

Staff described two main approaches to choosing which topics to cover during nutrition education. First, some WIC staff prioritize education topics based on their perception of how important or severe a risk is:

> *"I go through the questionnaire and for each section, I'll make notes on areas of improvement. And towards the end of the questionnaire when I'm ready to do the counseling and document the nutrition education, then I would choose the factor that contributes to the highest nutrition or health risk." – Clinic staff*

For approximately half of observed appointments, the observer documented that WIC staff identified the priorities using their judgment (50 percent of remote appointments, 44 percent of in-person appointments; see Table 4-2). Other staff described prioritizing education topics based on the participant's preference or level of interest in a topic.

> *"I always go with what the person wants to hear about and what's going to be most relevant for them…. So I'll do my assessment and then I ask them like, 'Do you have any questions?' And if they have questions, then we do education specific to those questions." – Clinic staff*

Observers documented that risks were prioritized based on a discussion with the participant or caregiver to determine their priorities for 34 percent of remote appointments and 31 percent of in-person appointments.

Table 4-2. How WIC staff prioritized nutrition education/counseling topics, by assessment mode

If there were many nutrition risks discussed and needs expressed by the participant or caregiver, how was the priority for topics for nutrition education/counseling determined?	Appointment observations			
	Remote		In-person	
	Number	Percentage	Number	Percentage
Discussion with participant to determine their priorities	60	33.5	68	31.2
WIC staff identified the priorities using their judgment	90	50.3	95	43.6
No apparent prioritization of topics	19	10.6*	55	25.2
Other	10	5.6*	0.0	0.0
Number of observed appointments	179		218	

*Indicates in-person vs. remote differences that are significant at p≤0.05.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021- spring 2022, and in-person observations were conducted summer and fall 2022. Nutrition Education/Counseling, question 4. Tabulations are not weighted. See appendix E, Table 33.

Some WIC staff described trying to prioritize both the topics they perceived to be the highest priority *and* the topics the participant was most interested in. Staff expressed that there can be a tension between making sure that any risks staff are concerned about are discussed, and also being sure to address the participant's concerns:

> *"A [participant] may want to focus on something that is not even something that I've identified as a risk… If a [participant] identifies to me that this is what I am most concerned about right now, and I have identified three other risk factors that I think are important, I may make a note of those three risk factors and say, 'These really need to be addressed at some point.' But I will address the thing that I think the [participant] is most concerned about. And I may say, if I have the time, 'Frankly, there are some things that concern me that I would like for you to discuss with the dietitian again at some point; would that be okay with you?' And I might mention what they are." – Clinic staff*

During the observed appointments, staff typically addressed all participant concerns through nutrition education (90 percent for remote appointments, 87 percent for in-person appointments; see Table 4-3). Even if staff took the first described approach of choosing education topics based on their own judgement of severity, they would rarely skip over or neglect to provide education for a topic that the participant raised. Observers noted that answers to participant questions were typically detailed and thorough to ensure the participant or caregiver's concerns were fully addressed.

Based on observation data, participants commonly expressed no concerns or questions during their appointment, even if staff asked directly if they had anything they wanted to discuss. Some WIC staff checked in frequently throughout the appointment to see if the participant had any questions or concerns, while other staff waited until the end of the appointment to do so. Infrequently, staff did not ask at all about participant questions or concerns.

In addition to covering risks and participant concerns, staff also sometimes had a set of relevant topics they covered based on the age or life stage of the participant, such as dental hygiene, complementary foods, and bottle-feeding practices. Topics like these might be covered even if the participant did not ask questions about them or have any directly related risks.

Table 4-3. Addressing participant's or caregiver's concerns during nutrition education portion of the appointment, by assessment mode

To what extent did the nutrition education/counseling component of the visit specifically address the concerns expressed by the participant or caregiver during the assessment conversation?	Appointment observations			
	Remote		In-person	
	Number	Percentage	Number	Percentage
All participant concerns addressed during nutrition education/counseling	195	89.9	219	87.3
Some, but not all of the concerns expressed by the participant were addressed during nutrition education/counseling	7	3.2	13	5.2
Participant's concerns were not addressed during nutrition education/counseling	15	6.9	19	7.6
Number of observed appointments	217		251	

*Indicates in-person versus remote differences that are significant at p≤0.05.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021- spring 2022, and in-person observations were conducted summer and fall 2022. Nutrition Education/Counseling, question 3. Tabulations are not weighted. See appendix E, Table 32.

Lastly, some staff reported tailoring nutrition education topics based on cultural preferences. Most staff did not have questions in their risk assessment process that explicitly asked about cultural food preferences, but this information would come up through the assessment questions about food consumption and other health-related behaviors. Perceived best practices for tailoring nutrition education to cultural food preferences included asking follow-up or probing questions to learn more about participants' preferences and habits, being sensitive and respectful in tone, and providing information without being pushy.

> *"Maybe they're abstaining from something like ... eating a lot of vegetables after delivery—I've had people tell me that '"s a cultural thing for them…. They've been told by their grandmother or mother that they shouldn't be having vegetables for a month or so after delivery. So I just explain to them why it's important, and, 'I understand that there may be something culturally important to you, and if it is, that's fine. You have total freedom to do what you would like to do. I just want to let you know the benefits of eating these vegetables after delivery.' So it takes a balance. It takes a balance of recognizing this is a cultural thing, 'I support you in*

whatever you decide. I just want to let you know of the pros and cons.'" – Clinic staff

One staff member also mentioned sharing information about which grocery stores accept WIC with new Spanish-speaking participants, as Spanish-speaking participants at that clinic typically shop at Mexican or Latino grocery stores that do not accept WIC.

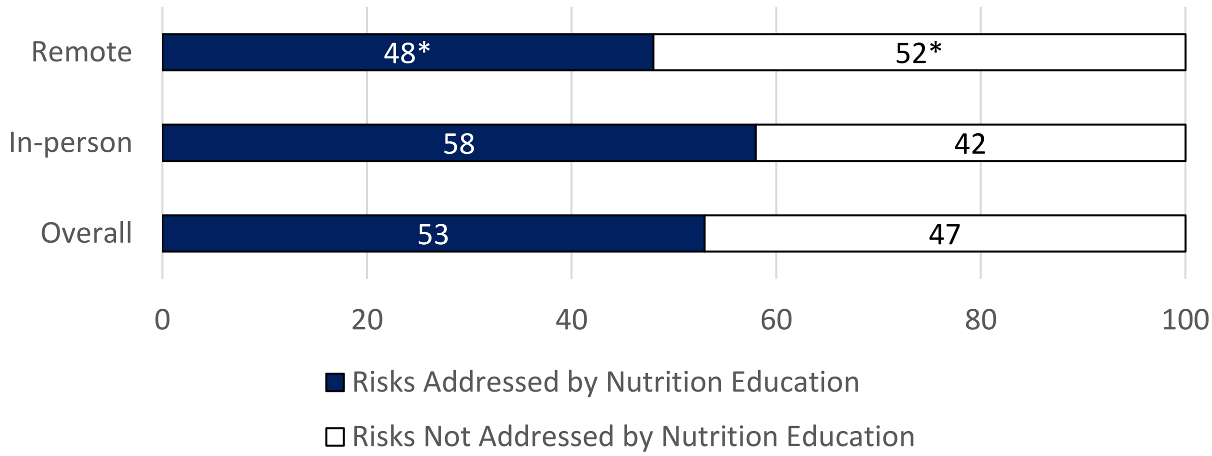
Choosing How Many Topics to Cover

About half of participants' documented risks were addressed by nutrition education during observed appointments (see Figure 4-3). The proportion of addressed risks was lower for remote visits compared to in-person visits (48 percent vs. 58 percent), a finding that was statistically significant. There are several possible reasons why risks are not addressed during counseling. Some nutrition risk codes do not require nutrition education or counseling, such as "short stature" or "pregnancy at a young age." For risks that do require education, topics may have been covered at a previous appointment. For example, staff might not provide education about the harms of smoking to a caregiver who had not shown interest in smoking cessation education and refused smoking cessation referrals during past appointments. In other cases, WIC staff determine that risks are outside their scope of expertise and would be best addressed through referrals to internal staff or external agencies rather than through nutrition education (e.g., a risk related to a medical condition would result in a referral to a doctor or health clinic if the participant did not already have a regular source of care).

When staff were asked about how they provide nutrition education, most described focusing on a few risks during an appointment, rather than trying to broach education for every single risk. Reasons for this approach included trying not to overwhelm participants and the fact that time was too limited during appointments to address all risks. Some staff described using handouts for lower priority risks as a strategy to avoid overwhelming participants.

"I would say I select certain risks. There are some parents or some moms that they might have 10 risk codes. I don't want to discourage her from coming back or make her feel like she's doing all of these things wrong. I pick the top risks that I think are most important and then maybe give a handout on one that I didn't think was as bad or something like that. It really depends on the participant, but I don't want to overwhelm them or make them feel bad." – Clinic staff

Figure 4-3. Percentage of identified nutrition risks addressed by nutrition education and counseling, by assessment mode



*Indicates in-person versus remote differences that are significant at p≤0.05.
Note: Number of identified risk codes equals 825 for remote, 900 for in-person observations, and 1,725 for overall. Overall combines remote and in-person data. There were 15 identified risk codes for which this information was not collected during remote observations and 32 during in-person observations.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Questions to ask after the observation, question 8 and Nutrition Risks Checklist. Tabulations are not weighted. See appendix E, Table 46.

4.3 Tailoring Breastfeeding Counseling

Breastfeeding counseling is primarily tailored for WIC participants by customizing the level of support and staff expertise provided. Typically, the CPA conducting the appointment will complete the breastfeeding assessment and can provide basic breastfeeding education and answer questions. In some clinics, all participants who are planning to or currently breastfeeding will automatically be referred to the internal peer counselor or another WIC breastfeeding expert. For other clinics, the participant will only be referred to a peer counselor or other expert if they have additional questions or concerns that CPAs feel could be best addressed by a specialist. Staff also can provide external referrals for breastfeeding support (e.g., 24-hour breastfeeding helpline) if they feel participants could benefit from those resources.

A few staff members mentioned trying to incorporate cultural beliefs and practices about breastfeeding into their counseling, but this was relatively uncommon. One staff member reported that they can customize breastfeeding counseling based on information received from a healthcare provider. For example, a woman referred to WIC after giving birth might bring in hospital discharge papers with breastfeeding assessment information, so the WIC staff member would have that information and know which topics to focus on. This was likely a rare occurrence and possibly specific to that clinic, as most WIC staff did not regularly receive information from healthcare providers.

One staff member mentioned that the remote environment was challenging for breastfeeding counseling specifically, sharing that it is “so hard to help a woman breastfeed if you can’t physically see her.”

4.4 Tailoring Goals

Just over half of observed appointments involved WIC staff helping the participant set a personal behavior change goal based on participant input (59 percent for remote appointments, 55 percent for in-person appointments; see Table 4-4). There are a few possible reasons for this number being relatively low. Staff members from at least two of the observed clinics mentioned that it was not their standard practice to set goals. Staff also shared that “a lot of times the [participants] don’t pinpoint any major concerns,” or less commonly, participants are not interested in making dietary changes. Since goal setting is supposed to be a participant-led process, some staff noted they would rather not set a goal if a participant was not amenable, rather than make up something for the sake of documentation.

Table 4-4. Addressing WIC participant/caregiver’s personal behavior change goals during the appointment, by assessment mode

Did the WIC staff help the participant set a personal behavior change goal or goals during this visit, based on input from the participant?	Appointment observations			
	Remote		In-person	
	Number	Percentage	Number	Percentage
Yes	166	58.7	144	55.2
No	117	41.3	117	44.8
Number of observed appointments	283		261	
If yes, did WIC staff help identify any challenges to reaching these goal(s)?				
Yes	62	40.8*	79	56.8
No	90	59.2*	60	43.2
Number of observed appointments	152		139	
Discuss how challenges might be handled?				
Yes	55	35.9*	78	49.4
No	98	64.1*	80	50.6
Number of observed appointments	153		158	

*Indicates in-person versus remote differences that are significant at p≤0.05.
Note: Percentage totals may not add to 100 due to rounding.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021–spring 2022, and in-person observations were conducted summer and fall 2022. Nutrition Education/Counseling, questions 6 and 7. Tabulations are not weighted. See appendix E, Table 35.

Of those appointments where staff set goals with participants, staff were statistically significantly more likely to help identify potential challenges to those goals during in-person appointments compared to remote appointments (57 percent for in-person appointments, 41 percent for remote appointments; see Table 4-4). Staff also discussed ways to handle these challenges with participants more frequently during in-person appointments compared to remote appointments (49 percent for in-person appointments, 36 percent for in-person appointments). This difference was also statistically significant. One possibility for these differences could be that it is easier to build rapport during in-person visits— participants might volunteer more information about potential challenges. There also may be more discussion or small talk in general, where staff can learn more about participants' lives. One staff member described challenges with the remote environment and how building a relationship is key to building participant buy-in for goals:

> *"To be honest, I don't think that [creating a relationship with them] happens as easily over the phone as it does in person which has been, I think, the greatest loss of this situation…. And so I think once you establish that relationship, parents are way more likely to trust you and to take your recommendations into consideration versus just being this person on the phone." – Clinic staff*

Of note, a few staff members had the opposite opinion and perceived that participants were more open to disclosing sensitive information remotely.

> *"I feel, since we've been doing things on the phone as opposed to being here in the office, that moms tend to tell me a lot more than they did before, which sounds strange… Here in the office may be a little uncomfortable because there's a bunch of people around, people in the waiting room, or other people in the office. It's more private whenever you're on the phone, and I feel like they tell me more personal things, or they may tell me something that's going on in their life or with their family where they wouldn't do that before. So I feel like the nutrition education can — [have a] more of a client-centered approach …." – Clinic staff*

Approaches to tailoring goals were similar to the approaches used for tailoring nutrition education. The two starting points for goal setting were either areas that the participant had already shown interest in or the health risks that staff perceived as the most important to address. If participants did not express clear interest in a certain topic, staff typically recapped the topics they discussed during the session and asked if any of those topics stood out as something participants wanted to work on. Then, if participants were still having trouble coming up with a goal, staff might offer some suggestions.

> *"Well, I kind of try to keep it open so that they can tell me what they want to focus on, but if they're having a little trouble or if they say I don't know, I've said, 'Well, you kind of mentioned that you don't eat a lot of fruits and vegetables. Is that something you might want to work on?' Or, 'You mentioned your child likes to drink a lot of juice.' But I try to keep it open first and ask them if there's something*

that they want to work on and then kind of go from there if they don't. Kind of guide them a little bit." – Clinic staff

Similar to tailoring nutrition education, some staff described a tension between what the participants wanted to work on compared to what staff perceived as the most important priority for behavior change. Typically, the participant's preference took priority over the staff member's preference for goal setting.

Direct discussion with the participant about their preferred goal was the most common approach described by staff. However, the approach to goal setting was different in one observed clinic, where staff mentioned that they do not discuss goals with participants at all:

> *"I'll just make that goal and kind of go over that information in a roundabout way without directly saying, 'Hey, this is our goal.' But just give them that information. For example, if they're drinking six cups of milk a day, we're going to go over, 'Two cups of dairy a day is plenty.'" – Clinic staff*

4.5 Tailoring Referrals

The amount and type of referrals provided varied from clinic to clinic. The only practice that was consistent across all observed clinics was that high-risk participants would be internally referred to a dietitian. Most clinics also provided internal referrals to a BFPC or another type of breastfeeding expert. As described previously, standard practices for breastfeeding referrals varied. Sometimes internal breastfeeding referrals would be provided for all caregivers planning to or currently breastfeeding, while sometimes referrals were provided for only those with specific breastfeeding concerns or challenges.

The amount of and practices for external referrals varied from clinic to clinic. Some external referrals were provided to all participants. For example, one WIC clinic gave out a pamphlet for a nurse-family partnership program to all participants. Certain referrals might also be offered regularly to all participants within a certain eligibility category (e.g., breastfeeding pump loan program for all breastfeeding caregivers). Another clinic did not provide any external referrals at all.

One WIC staff member noted that it was easier to tell what kind of referrals were needed when seeing participants in person compared to seeing them remotely:

> *"We had a family last week that we saw in person. Mom had just left a domestic violence situation. She needed that connection with another human being to help give referrals. Just a cold phone call wasn't going to do it. It's just a different type of service. And then I can load her up with all of the goodies we have, cups and spoons for her small children— because they're living in a hotel right now. So I don't know. The human touch just needs to be there. It's just not the same when providing this type of care to this population." – Clinic staff*

4.6 Tailoring and the MIS

For all components of the visit described in this chapter, the MIS did not necessarily enhance or prompt tailoring but was used primarily to document the tailoring that occurred. The MIS populated the standard food package based on the participant's eligibility category, and from there, staff tailored the package based on discussion with the participant. Generally, the MIS did not help suggest or prompt any specific tailoring options based on the information documented during the assessment:

> *"So for instance, so someone lactose intolerant, I do check it off on their questionnaire, but it's not going to come up with a pop-up to say, 'This person's lactose intolerant. You need to change their food package to lactose free.' It doesn't do that. We just have to remember to do that." – Clinic staff*

For the nutrition education aspect of the appointment, staff noted that they could view the list of risks that they documented in the MIS; this could serve as a reminder of topics to cover. Staff in some State agencies could also record what education they provided (e.g., topics and materials) in a notes field in the MIS. This served the functions of ensuring that participants did not receive the same materials repeatedly and that risks that were not covered by education at one appointment could be addressed during a subsequent appointment. The MIS provided a way to document education tailoring but did not prompt or suggest nutrition education topics to cover based on other documented information. Similarly, the MIS provided a way to document the goals that were set but did not suggest goals based on participant risks.

One of the few examples for which the MIS did facilitate tailoring was for certain kinds of referrals. In some clinics, the MIS would automatically generate internal referrals for participants who were high-risk to dietitians or breastfeeding to peer counselors. Also, in some cases, the MIS would prompt the CPA to provide external referral information. For example, at one clinic, if a child did not have certain immunizations, the MIS would prompt a referral to a healthcare provider.

4.7 Consistency of Tailoring Practices

Table 4-5 provides a look at the consistency of tailoring practices across clinics based on the percentage of observations with food package tailoring and the percentage of identified risks addressed by education or referrals at each clinic. If tailoring practices are consistent across clinics, we might expect to see roughly similar percentages of observations with a tailored food package or of risks addressed by education across clinics. Table 4-5, however, indicates that clinics vary widely in the amount of tailoring done in both the remote and in-person environments. While overall, 40 percent of clinic observations included a tailored food package, that value ranged from 0 to 100 percent for individual clinics in the in-person environment and from 0 to 92 percent in the remote environment. For food packages, part of these differences may be explained by different understandings of what it means to tailor a food package (these data were reported by staff who conducted the assessment), but the range of percentages for education and referral tailoring by clinic were also large, so clinic policy and staff practices also likely play a role.

The percentage of identified risks addressed by education and referrals also varied greatly across clinics. After each appointment, the observer met with the WIC staff member and reviewed each recorded nutrition risk, asking whether the staff member believed the risk had been addressed through nutrition education or referral during the appointment. Thus, the percentages below do not reflect a value judgment or represent which risks could or should have been addressed by education or referrals; instead they represent staff member recollections of how they addressed each risk. In the in-person environment, 58 percent of all identified risks were addressed by education, but that varied from 21 to 87 percent in individual clinics. Fewer risks were addressed by referrals (17 percent for in-person and 11 percent for remote), but the range across individual clinics was still large with individual clinics reporting between 0 and 65 percent of identified risks being addressed by referrals. (The range was smaller in the remote environment—from 0 to 40 percent of identified risks.) Clinic differences may be explained in part by differences in access to referral resources at different clinics.[20]

Table 4-5. Consistency of tailoring practices across clinics

Tailoring practice	Percentage		
	Remote	In-person	Overall
Food package tailoring			
Percentage of observations with a tailored food package across all clinics	40.7	44.4	42.6
Range of clinic percentages	0 to 92	0 to 100	
Number of observed appointments	258	261	519
Nutrition education tailoring			
Percentage of nutrition risks addressed by education across all clinics	48.0*	57.7	53.0
Range of clinic percentages	8 to 86	21 to 87	
Number of identified nutrition risks	825	900	1,725

[20] For instance, the local agency survey data presented in the Part 1 report indicated that 15 percent of clinics did not have a registered dietitian available for internal referrals. However, most types of external referral resources were available at almost all clinics surveyed. See Tables 5-7 and 5-9 in the Part 1 report.

Table 4-5. Consistency of tailoring practices across clinics (Continued)

Tailoring practice	Percentage		
	Remote	In-person	Overall
Referral tailoring			
Percentage of nutrition risks addressed by referrals across all clinics	11.4*	16.8	14.2
Range of clinic percentages	0 to 40	0 to 65	
Number of identified nutrition risks	819	909	1,728
Number of clinics	30	25	40

*Indicates in-person versus remote differences that are significant at p≤0.05.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observations of Nutrition Services Components of WIC Certification. Tabulations are not weighted. See appendix E, Table 53.

4.7a Investigating Factors Associated With Benefit Tailoring Using Multivariate Regression Models

The study team employed multivariate regression analysis to explore independent associations between risks identified during the nutrition assessment and tailored benefits, including tailored food packages, education, and referrals. Multivariate regression analysis facilitates analyzing multiple factors that may influence an outcome of interest and identifying the independent contribution of each. This section discusses the regression approach used to assess the independent relationships between identified nutritional risks and tailored benefits. Appendix I offers additional detail on the regression approach. Combined with the qualitative information previously presented, the regression information contributes to a holistic analytical approach.

The study team used logistic regression to explore the hypothesis that being assigned one or more high-risk nutritional risk codes would significantly increase the likelihood of tailoring benefits after controlling for other factors. Accordingly, the primary variables of interest in the three regressions presented are the measures of nutritional risk, as indicated by the risk codes assigned to the participant. Significant positive coefficients on the nutritional risk variable(s) that are further from a value of 1 indicate a greater likelihood of tailoring. Given the hypothesis, findings of positive significant coefficients on nutritional risk variables were expected.

The food-package-tailoring regression focused on assessing the likelihood of food package tailoring as opposed to provision of a standard food package.

Tailored nutrition education and tailored referrals were also developed as binary indicators: whether the participant received tailored nutrition education or a tailored referral or not. For these regressions, the hypothesis supported the expectation that regression coefficients on risk codes reported as high risk would be positive and significant.

Additional independent variables controlled for factors that may also influence the tailoring of benefits. As discussed in appendix I, bivariate analysis facilitated identifying these variables. The factors selected included race/ethnicity of participant(s), category of participant(s) (pregnant mother/postpartum mother/infant/child), reason for WIC appointment, whether the appointment was held in person or remotely, type of staff conducting the nutritional assessment, whether the staff had multicultural awareness training, staff experience (in years) conducting nutritional assessments, clinic characteristics (urbanicity/size and type of clinic), and State agency.[21] Statistically significant positive coefficients increase the likelihood of tailoring, and statistically significant negative coefficients decrease the likelihood of tailoring. The regression results are shown in Table 4-6, Table 4-7, and Table 4-8.

The first model (Table 4-6) identified several statistically significant independent associations between the factors assessed and the likelihood of WIC food package prescription being tailored. Having at least one high-risk anthropometric risk code more than doubled the likelihood of the participant's WIC food package prescription being tailored. However, other types of nutritional risk did not significantly drive food package tailoring. Relative to participants who self-identified as Hispanic, those who self-identified as non-Hispanic White were more than twice as likely to have their WIC food package prescription tailored. Similarly, those participants who did not self-identify as Hispanic, non-Hispanic White, or non-Hispanic Black were more than twice as likely as their Hispanic counterparts to receive a tailored food package prescription. (In Table 4-6, and other regression tables, the group of individuals who did not self-identify as either Hispanic, non-Hispanic White, or non-Hispanic Black is indicated by the shorthand category "other.") The type of WIC participant also significantly influenced the likelihood of food package tailoring: WIC appointments including a postpartum mother participant were more than four times as likely as appointments without a post-partum mother to have their WIC food package prescription tailored. Staff with greater than 5 years of experience conducting nutritional assessments at WIC clinics were less than half as likely to tailor WIC food package prescriptions as staff with between 2 and 4 years of nutritional assessment experience.

[21] Model results for State agency are not reported. It improved model fit but may explain variation that is, in part, beyond control of FNS or WIC staff.

Table 4-6. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of the WIC food package prescription being tailored relative to not being tailored

Independent variable	Odds ratio	Confidence interval
Anthropometric risk codes: reference category no Anthropometric risk codes		
At least one risk code but no high-risk code	1.179	0.682 – 2.036
At least one high-risk code	2.381*	1.065 – 5.325
Biochemical risk codes: reference category no Biochemical risk codes		
At least one risk code but no high-risk code	0.662	0.277 – 1.583
At least one high-risk code	0.314	0.018 – 5.356
Clinical/Health/Medical risk codes: reference category no Clinical/Health/Medical risk codes		
At least one risk code but no high-risk code	1.100	0.595 – 2.034
At least one high-risk code	1.334	0.646 – 2.753
Dietary risk codes: reference category no Dietary risk codes		
At least one risk code but no high-risk code	0.805	0.471 – 1.376
At least one high-risk code	0.244	0.044 – 1.364
Other nutritional risk codes: reference category no Other nutritional risk codes^		
At least one risk code but no high-risk code	1.058	0.528 – 2.118
At least one high-risk code	1.442	0.406 – 5.116
Race/Ethnicity of the participant: reference category Hispanic		
Non-Hispanic Black	1.818	0.798 – 4.142
Non-Hispanic White	2.454*	1.198 – 5.029
Other	2.831*	1.088 – 7.363
Session characteristics^		
Session held in person (not remotely)	1.445	0.835 – 2.500
Participant: Pregnant woman	1.323	0.498 – 3.515
Participant: Postpartum woman	4.319*	1.479 – 12.609
Participant: Infant	0.862	0.300 – 2.476
Participant: Child	1.456	0.617 – 3.433
Staff had received cultural training	0.485	0.209 – 1.121
Type of WIC staff conducting assessment: reference category Nutritionist		
Health educator	0.341	0.105 – 1.107
Nurse	1.393	0.470 – 4.122
Other	0.561	0.230 – 1.366
Support staff	0.348	0.066 – 1.839
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years	0.430*	0.222 – 0.834
0 – 2 years	0.554	0.256 – 1.199
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	0.729	0.173 – 3.067
Medium urban	1.257	0.403 – 3.922
Large urban	1.600	0.407 – 6.296

Table 4-6. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of the WIC food package prescription being tailored relative to not being tailored (continued)

Independent variable	Odds ratio	Confidence interval
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	1.563	0.536 – 4.561
Nonprofit organization	0.643	0.223 – 1.860
Reason for WIC session: reference category initial WIC enrollment		
Both initial enrollment and recertification	0.602	0.254 – 1.429
WIC recertification	1.642	0.711 – 3.791

† State agency was included as a categorical predictor variable to control for variation by State, though the odds ratios are not shown.

*Statistically significant at the 95 percent confidence level.

^ For each session characteristic, the implied reference group is those without the characteristic, as each is a binary indicator.

Note: After accounting for missing variables, the sample size was 458 observations. The pseudo R-squared value for model fit was 0.25. All observations in Vermont and all observations with clinic type "Local government, non-health department" were excluded from the model as no food packages were reported as tailored.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

The second logistic regression model (Table 4-7) assessed independent associations between assigned nutritional risks with receipt of tailored nutrition education. Three types of nutritional risk codes were identified as being associated with tailored nutrition education: anthropometric high-risk codes, clinical/health/medical high-risk codes, and dietary (non-high) risk codes. Each was independently positively associated with receipt of tailored nutrition education, suggesting a greater likelihood of tailored nutrition education for these types of codes. The findings suggest that those offering nutrition education are comfortable addressing many high-risk codes and general nutritional risk codes and consistently do so through tailored nutrition education. It is noteworthy that the other factors included in the model were not independently associated with receipt of tailored nutrition education, suggesting that risk codes alone drive the intervention.

Table 4-7. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of nutrition education being tailored relative to not being tailored

Independent variable	Odds ratio	Confidence interval
Anthropometric risk codes: reference category no Anthropometric risk codes		
At least one risk code but no high-risk code	1.189	0.604 – 2.343
At least one high-risk code	3.560*	1.179 – 10.746
Clinical/Health/Medical risk codes: reference category no Clinical/Health/Medical risk codes		
At least one risk code but no high-risk code	1.749	0.821 – 3.728
At least one high-risk code	5.279*	1.900 – 14.665

Table 4-7. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of nutrition education being tailored relative to not being tailored (continued)

Independent variable	Odds ratio	Confidence interval
Dietary risk codes: reference category no Dietary risk codes		
At least one risk code but no high-risk code	10.084*	4.707 – 21.603
At least one high-risk code	4.748	0.360 – 62.542
Other nutritional risk codes: reference category no Other nutritional risk codes		
At least one risk code but no high-risk code	2.217	0.882 – 5.571
At least one high-risk code	5.797	0.696 – 48.297
Race/Ethnicity of the participant: reference category Hispanic		
Non-Hispanic Black	0.424	0.142 – 1.271
Non-Hispanic White	0.423	0.168 – 1.069
Other	0.879	0.247 – 3.124
Session characteristics		
Session held in person (not remotely)	1.683	0.848 – 3.341
Participant: Pregnant woman	0.737	0.194 – 2.803
Participant: Postpartum woman	0.579	0.168 – 1.996
Participant: Infant	0.796	0.199 – 3.178
Participant: Child	0.717	0.203 – 2.526
Staff had received cultural training	0.542	0.209 – 1.405
Type of WIC staff conducting assessment: reference category Nutritionist		
Health educator	2.741	0.701 – 10.725
Nurse	1.260	0.302 – 5.259
Other	0.952	0.276 – 3.278
Support staff	11.069	0.907 – 135.150
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years' experience	1.030	0.427 – 2.484
0 - 2 years' experience	0.881	0.326 – 2.384
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	0.677	0.111 – 4.134
Medium urban	0.878	0.220 – 3.501
Large urban	1.084	0.193 – 6.092
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	0.580	0.157 – 2.140
Nonprofit organization	1.477	0.388 – 5.617
Local government, non-health department	0.097	0.004 – 2.213

Table 4-7. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of nutrition education being tailored relative to not being tailored (continued)

Independent variable	Odds ratio	Confidence interval
Reason for WIC session: reference category initial WIC enrollment		
Both initial enrollment and recertification	2.231	0.696 – 7.147
WIC recertification	0.791	0.282 – 2.219

† State agency was included as a categorical predictor variable to control for variation by State, though the odds ratios are not shown.

* Statistically significant at the 95 percent confidence level.

Notes: After accounting for missing variables, the sample size was 424 observations. The pseudo R-squared value for model fit was 0.25.

Biochemical risk codes were excluded from the model as education tailoring always occurred if there was a biochemical risk code.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

The third logistic regression model (Table 4-8) assessed independent associations between nutritional risk with receipt of a tailored referral. This model identified several statistically significant independent associations between the factors assessed and the likelihood of a tailored referral. Having any anthropometric risk code or other nutritional risk code increased the likelihood of a tailored referral. Having a high-risk clinical/health/medical risk code increased the likelihood, as did having a dietary risk code.[22] Compared to Hispanic participants, non-Hispanic White participants were less likely to receive a tailored referral when controlling for the other factors within the model. Reasons for this ethno-racial variation are unclear but may reflect a greater need for referrals for groups that may be less well connected to the social safety net.

Table 4-8. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of referral being tailored relative to not being tailored

Independent variable	Odds ratio	Confidence interval
Anthropometric risk codes: reference category no Anthropometric risk codes		
At least one risk code but no high-risk code	2.961*	1.529 – 5.736
At least one high-risk code	2.626*	1.044 – 6.601
Biochemical risk codes: reference category no Biochemical risk codes		
At least one risk code but no high-risk code	1.756	0.687 – 4.491
At least one high-risk code	3.266	0.175 – 60.841
Clinical/Health/Medical risk codes: reference category no Clinical/Health/Medical risk codes		
At least one risk code but no high-risk code	1.469	0.736 – 2.935
At least one high-risk code	4.105*	1.863 – 9.048

[22] Event rarity may explain why the odds ratio estimate of "at least 1 high-risk dietary risk code" did not differ from 1 with 95 percent statistical confidence. Only 10 observations received a high-risk dietary risk code, even though more than 340 observations had dietary risk codes.

Table 4-8. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of referral being tailored relative to not being tailored (continued)

Independent variable	Odds ratio	Confidence interval
Dietary risk codes: reference category no Dietary risk codes		
At least one risk code but no high-risk code	1.897*	1.011 – 3.561
At least one high-risk code	2.174	0.375 – 12.591
Other nutritional risk codes: reference category no Other nutritional risk codes		
At least one risk code but no high-risk code	2.283*	1.064 – 4.901
At least one high-risk code	18.910*	4.726 – 75.655
Race/Ethnicity of the participant: reference category Hispanic		
Non-Hispanic Black	0.482	0.192 – 1.212
Non-Hispanic White	0.442*	0.196 – 0.998
Other	0.528	0.175 – 1.591
Session characteristics		
Session held in person (not remotely)	1.266	0.657 – 2.439
Participant: Pregnant woman	2.304	0.815 – 6.511
Participant: Postpartum woman	1.716	0.575 – 5.124
Participant: Infant	1.435	0.458 – 4.498
Participant: Child	2.153	0.896 – 5.171
Staff had received cultural training	1.522	0.606 – 3.823
Type of WIC staff conducting assessment: reference category Nutritionist		
Health educator	3.083*	1.028 – 9.250
Nurse	1.448	0.439 – 4.779
Other	1.316	0.517 – 3.349
Support staff	2.758	0.660 – 11.518
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years' experience	0.483	0.226 – 1.031
0 - 2 years' experience	0.957	0.398 – 2.301
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	0.915	0.185 – 4.525
Medium urban	1.063	0.304 – 3.719
Large urban	1.119	0.233 – 5.380
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	0.567	0.149 – 2.160
Nonprofit organization	0.455	0.141 – 1.472
Local government, non-health department	0.097	0.004 – 2.213

Table 4-8. Adjusted† odds ratios and confidence intervals from logistic regression examining factors affecting the odds of referral being tailored relative to not being tailored (continued)

Independent variable	Odds ratio	Confidence interval
Reason for WIC session: reference category Initial WIC enrollment		
Both initial enrollment and recertification	0.502	0.215 – 1.176
WIC recertification	0.471	0.190 – 1.171

† State agency was included as a categorical predictor variable to control for variation by State, though the odds ratios are not shown.

* Statistically significant at the 95 percent confidence level.

Notes: After accounting for missing variables, the sample size was 482 observations. The pseudo R-squared value for model fit was 0.27.

Observations with clinic type of "Local government, non-health department" were excluded due to never being referred.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

Taken together, the regression findings support the hypothesis that nutrition risks drive tailored food packages, nutrition education, and referral. Participants with high-risk anthropometric codes were more likely to receive all three tailored benefits. For participants with an anthropometric risk code labeled "high-risk," the likelihood of receiving a tailored food package was 2.4 times greater than for participants without a high-risk anthropometric risk code. These participants were 3.6 times more likely to receive tailored nutrition education and 2.6 times more likely to receive a tailored referral. Participants with high-risk clinical/health/medical risk codes or non-high-risk dietary risk codes were more likely to receive tailored nutrition education and referrals. Specifically, participants with high-risk clinical/health/medical risk codes were 5.2 times more likely to receive tailored nutrition education and 4.1 times more likely to receive a tailored referral than those without this type of risk code. Participants assigned a non-high-risk dietary risk code were 10.1 times more likely to receive tailored nutrition education and 1.9 times more likely to receive a tailored referral than those without this type of risk code. However, assignment of clinical/health/medical risk codes or non-high-risk dietary risk codes were not associated with food package tailoring. These differences may appropriately reflect WIC staff recognition of limitations inherent in food package prescriptions to address the type of risk documented.

4.8 Tailoring Benefits In-Person Versus Remote

Differences between in-person and remote visits for each aspect of the appointment are described throughout chapter 4 as applicable; this section provides a high-level summary of key similarities and differences.

4.8a Key Similarities and Differences

Tailoring practices were similar for both in-person and remote appointments. An exception is that staff may be less able to tailor weight or growth-related nutrition education when lacking accurate and recent height and weight measurements for remote visits.

Staff had conflicting perceptions about whether having remote visits facilitated or hindered tailoring of WIC services to meet participants' needs. Some staff thought remote visits encouraged participants to share more information, particularly for sensitive or stigmatized issues. Others found it challenging to build rapport and trust with participants remotely.

There were statistically significant differences between the percentage of staff who reported tailoring their nutrition education approaches between remote and in-person visits; reasons for these differences are unclear but may have been due to the modes of education delivery available in remote versus in-person environments. In-person environments had more options for education delivery including face-to-face counseling and group education sessions. There were also differences in goal-setting practices between remote and in-person visits; while the percentage of observations in which WIC staff helped participants set a behavioral change goal did not differ significantly between the remote and in-person environments, once a goal was set, more staff discussed challenges and how to address them during in-person observations than remote observations. These differences may be related to in-person appointments facilitating better connection between staff and participants or to the longer appointment times for in-person appointments (see section 6.2), which could have allowed in-person assessments to have a more in-depth discussion of goals.

Mode of service delivery (in-person or remote) was not associated with a greater likelihood of tailored benefits. The variable "session held in person" was not significant in regressions exploring the factors that affect the likelihood of food package, education, and referral tailoring.

5. Operationalization of VENA

Key Findings

- Aspects of VENA guidance that were least likely to be observed during remote and/or in-person appointments include the following:
  - The CPA provided a clear explanation of the WIC risk assessment process and its purpose
  - The CPA successfully used the MIS to build rapport with the participant by inviting the participant to look at the computer screen during the assessment
  - When multiple risks were identified, topics for nutrition education were prioritized in discussion with participants to determine their priorities
  - In a re-certification visit, the CPA follows-up on progress made
- Other indicators of the operationalization of VENA guidance were almost universally observed across both remote and in-person appointments. These included:
  - A positive approach to the discussion of risk factors that focused on desirable health outcomes and not deficiencies
  - WIC CPAs acknowledged and affirmed the participant's thoughts and concerns
  - CPAs directly discussed nutrition risks with the participant or caregiver
- Across both remote and in-person appointments, almost every participant reported experiences that align with the participant-centered approach promoted by VENA principles.
- While participants generally reported experiences that align with VENA principles, 71 percent of participants agreed or strongly agreed with the statement that "WIC staff asked me about my ideas and beliefs about food," which is the lowest percentage agreement among all statements presented to participants and suggests this is one aspect of a participant-centered approach that may not be a routine part of all nutrition assessments.
- While most of the WIC staff participating in the study had received training in cultural differences, data collectors did not often observe WIC staff exploring participants' cultural behaviors and beliefs about food during the nutrition assessment. Exploring a participant's cultural behaviors and beliefs was observed in just 9 percent of remote appointments and 4 percent of in-person appointments.

Analysis of observation data related to VENA guidance focused on answering three study questions:

- How is VENA guidance operationalized in the nutrition assessment process observed at local WIC agencies?
- How does VENA implementation vary between agencies and how does it impact their nutrition assessment processes?
- Identify and describe aspects of the nutrition assessment process that do not readily align with VENA guidance.

This chapter of the report explores the answers to these questions using data from the 565 remote and in-person assessment observations, focusing not on policy, but on the observed process.

5.1 VENA Guidance

VENA guidance supports WIC staff in conducting quality nutrition assessments by helping WIC staff to enhance their interactions with participants/caregivers and to link collected health and dietary information to the nutrition services provided.[23] VENA guidance was first issued in 2006 and updated in 2020. The guidance is used by State and local agencies to develop policies and procedures related to the nutrition assessment and other components of WIC nutrition services. VENA principles, such as patient-centeredness and using health outcomes as a focal point, are an important part of the delivery of nutrition services in WIC clinics. While WIC staff were not asked directly about VENA and its impact on their work in staff interviews (and no staff mentioned VENA in response to open-ended questions), the study's Observation Guide included several items representing VENA in action. Observers looked for these items in the appointments they observed.

5.2 How Assessments Align With VENA

To examine how observed nutrition assessments align with VENA principles, the study team used 10 items from the Observation Guide to create a composite measure or index of VENA operationalization for each clinic and overall. Section B.6.2 in appendix B describes how the index was created. The items used to create the index are presented in Table 5-1.

Indicators of the operationalization of VENA guidance that were almost universally observed across both remote and in-person appointments include the following:

- In 98 percent of appointments, observers noted that the approach to the discussion of risk factors was positive, focused on desirable health outcomes and not deficiencies.
- In 97 percent of appointments where the WIC CPA asked a participant or caregiver about their nutrition needs and interest, the CPA acknowledged and affirmed the participant's thoughts and concerns.
- In 81 percent of observed appointments, nutrition risks were discussed directly with the participant or caregiver informing them of the risk factors that are barriers to positive health outcomes.

[23] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) – Updated guidance* (p. 2).

Table 5-1. How Value Enhanced Nutrition Assessment (VENA) guidance is operationalized - observed appointments

Questions related to VENA guidance	Percentage of observed appointments		
	Remote Percentage	In-person Percentage	Overall Percentage
Did the WIC Competent Professional Authority (CPA) provide an explanation of the WIC risk assessment process and its purpose?			
Yes	–	11.0	–
No	–	89.0	–
Number of observed appointments	–	255	–
As part of the assessment, did the WIC CPA ask the participant or caregiver about their nutrition needs and interests?			
Yes	74.8*	83.3	78.7
No	25.2*	16.7	21.3
Number of observed appointments	301	258	559
If yes, did the WIC CPA acknowledge and affirm the participant's thoughts and concerns?			
Yes	96.4	97.4	96.9
No	3.6	2.6	3.1
Number of observed appointments	194	194	388
Were nutrition risks discussed directly with the participant or caregiver?			
Yes	76.2*	87.3	81.3
No	23.8*	12.7	18.7
Number of observed appointments	298	259	557
If any nutrition risks were directly discussed with the participant or caregiver, was this done in a way that…			
Focused on positive changes and/or desirable health outcomes	99.5*	95.4	97.6
Focused on deficiencies	0.5*	4.6	2.4
Number of observed appointments	216	196	412
If there were many nutrition risks discussed and needs expressed by the participant or caregiver, how was the priority for topics for nutrition education/counseling determined?			
Discussion with participant to determine their priorities	35.5	31.2	33.1
WIC staff identified the priorities using their judgement	53.3	43.6	47.8
No apparent prioritization of topics	11.2*	25.2	19.1
Number of observed appointments	169	218	387
Did the CPA help the participant set a personal behavior change goal or goals during the appointment, based on input from the participant?			
Yes	58.7	55.2	57.0
No	41.3	44.8	43.0
Number of observed appointments	283	261	544

Table 5-1. How Value Enhanced Nutrition Assessment (VENA) guidance is operationalized - observed appointments (continued)

Questions related to VENA guidance	Percentage of observed appointments		
	Remote percentage	In-person percentage	Overall percentage
[For recertification visits only] During the assessment, did the WIC CPA refer back to previous visits to ask the participant or caregiver about progress made?			
Yes	34.8	44.7	39.3
No	65.2	55.3	60.7
Number of observed appointments	204	170	374
Throughout the session, how often did the WIC CPA look directly at the participant (not at the computer)?			
For the majority of the time	–	77.8	–
For some but not the majority of the time	–	21.8	–
Infrequently	–	0.4	–
Number of observed appointments	–	261	–
Did the WIC CPA invite the participant to look at the computer screen for any purpose during the assessment?			
Yes	–	18.5	–
No	–	81.5	–
Number of observed appointments	–	259	–
Composite measure	Average Score	Average Score	Average Score
Score across all VENA-related items**	3.8	5.3	4.5

*Indicates in-person vs. remote differences that are significant at p≤0.05.

**Average scores for remote and in-person use the same 10 VENA-related items. Because some items could not be part of the remote appointments (i.e., how often the WIC CPA looked directly at the participant), the composite measure will be lower for remote appointments than in-person appointments

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observations of Nutrition Services Components of WIC Certification. Tabulations are not weighted. See appendix E, Table 51.

The study team created a "VENA operationalization" score that was assigned to each appointment based on the number of VENA-related items observed. Scores could range from 0 to 10 for in-person appointments and 0 to 7 for remote appointments. (The remote services composite measure included only those items that were applicable to a remote appointment.) Appointment scores were averaged for each clinic and across all remote and all in-person appointments. The average composite score was 3.8 for remote appointments and 5.3 for in-person appointments. Because some items could not be part of remote appointments when conducted by telephone (i.e., how often the WIC CPA looked directly at the participant), the composite measures were lower for remote appointments than in-person appointments.

Participant reports of their clinic experience also provide an indicator of the extent to which the services received at WIC clinics reflect VENA principles. Across both remote and in-person appointments, almost every participant reported experiences that align with the participant-centered approach promoted by VENA principles. Ninety-nine percent of participants overall either agreed or strongly agreed with the following statements that reflect VENA principles in action (see Table 5-2):

- I was greeted warmly by WIC staff when I checked in for my visit (in-person)/began my telephone appointment (remote).
- The WIC staff member made me feel at ease.
- The WIC staff member listened to me about my needs and concerns.
- The WIC staff member explained things clearly in a way that I could understand.

Table 5-2. How VENA guidance is operationalized - the participant's experience

Statements	Percentage of participants		
	Remote percentage	In-person percentage	Overall percentage
I was greeted warmly by WIC staff when I checked in for my visit (in-person)/began my telephone appointment (remote).			
Strongly agree/agree	100*	96.9	98.5
Neither agree nor disagree	0.0	1.2	0.6
Strongly disagree/disagree	0.0*	2.0	0.9
Number of participants	275	255	530
The WIC staff member made me feel at ease.			
Strongly agree/agree	98.6	99.2	98.9
Neither agree nor disagree	1.1	0.4	0.7
Strongly disagree/disagree	0.4	0.4	0.4
Number of participants	280	255	535
The WIC staff member listened to me about my needs and concerns.			
Strongly agree/agree	99.3	98.0	98.7
Neither agree nor disagree	0.7	2.0	1.3
Strongly disagree/disagree	0.0	0.0	0
Number of participants	280	255	535
The WIC staff member explained things clearly in a way that I could understand.			
Strongly agree/agree	99.3	100	99.6
Neither agree nor disagree	0.4	0.0	0.2
Strongly disagree/disagree	0.4	0.0	0.2
Number of participants	279	255	534

*Indicates in-person vs. remote differences that are significant at $p \leq 0.05$.
Note: Percentage totals may not add to 100 due to rounding.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Participant Interviews. Tabulations are not weighted. See Appendix D, Table 9.

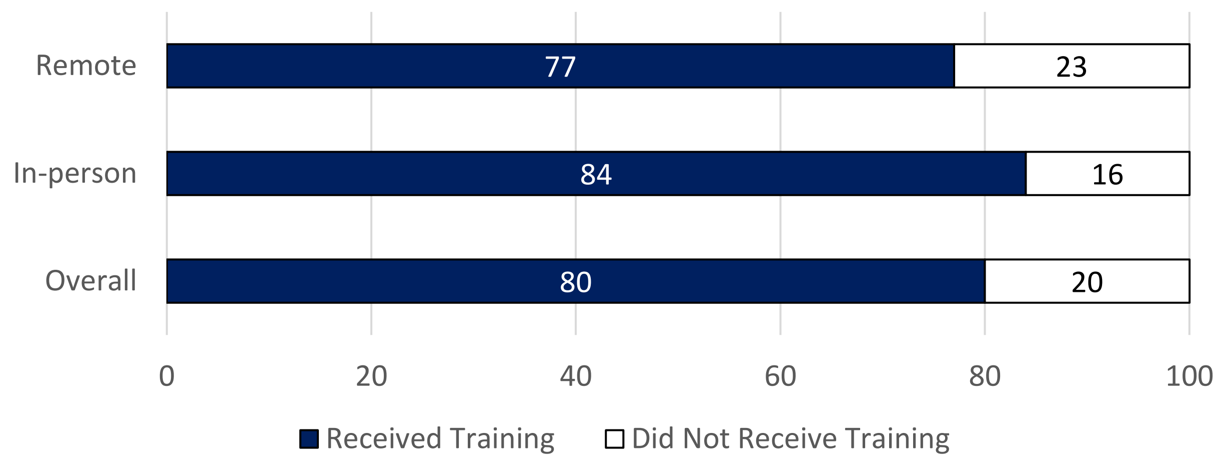
5.2a Cultural Sensitivity/Training

VENA guidance encourages competency in multicultural intelligence/awareness for WIC staff. The guidance defines multicultural intelligence/awareness as

> The capability to relate and work effectively with people from different cultural backgrounds. Multicultural intelligence includes an understanding of how sociocultural aspects (race, ethnicity, religion, group affiliation, socioeconomic status, and worldview) affect nutrition and health status.[24]

According to the VENA guidance, competency in multicultural intelligence/awareness includes having knowledge of the cultural groups served by the WIC clinic, cultural eating patterns, and culturally based communication differences. Interviewed staff were asked if they had received training in cultural differences among WIC participants. Eighty percent of staff participating in remote and/or in-person data collection indicated they had received such training from WIC or other sources (see Figure 5-1).

Figure 5-1. Whether staff receive training in cultural differences among WIC participants (percentage of staff interviewed)



*Indicates in-person versus remote differences that are significant at p≤0.05.
Note: Number of interviewed staff equals 86 for remote, 87 for in-person, and 173 overall. Overall combines remote and in-person data.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Staff Interviews, question 17. Tabulations are not weighted. Remote data collected fall 2021 - spring 2022, and in-person data collected summer and fall 2022. See appendix C, Table 10.

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[24] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *Value Enhanced Nutrition Assessment (VENA) – Updated guidance* (Appendix 1 – Glossary of Terms, p. 45).

While most of the WIC staff participating in the study had received training in cultural differences, data collectors did not often observe WIC staff exploring participants' cultural behaviors and beliefs about food during the nutrition assessment. Exploring a participant's cultural behaviors and beliefs was observed in just 9 percent of remote appointments and 4 percent of in-person appointments (see Table 5-3).[25] While this difference was significant, the difference was likely due to the types of participants seen rather than the actual differences in how the services were delivered.

Note that about 70 percent of participants in both the remote and in-person environments agreed with the statement that WIC staff asked them about their ideas and beliefs about food (see Figure 8-1), while the study's observation data found that discussion of ideas and beliefs about food occurred in less than 10% of observed appointments. This conflicting data may show the extent to which WIC participants did not want to say anything in their interviews that they thought could be perceived as negative toward WIC staff.

Table 5-3. Exploring the participant's cultural behaviors and beliefs during the nutrition assessment, by assessment mode

During the assessment conversation, did the WIC staff explore the participant's cultural behaviors and beliefs?	Appointment observations			
	Remote		In-person	
	Number	Percentage	Number	Percentage
Yes	26	8.6*	11	4.3
No	275	91.4*	246	95.7
Number of observed appointments	301		257	

*Indicates in-person versus remote differences that are significant at p≤0.05.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021- spring 2022, and in-person observations were conducted summer and fall 2022. Start of the Observation, Gathering Information for Nutrition Risk Assessment, question 8. Tabulations are not weighted. See appendix E, Table 22.

5.3 How Assessments Do Not Align With VENA

The data in Table 5-1 also shows the aspects of VENA guidance that were *least* likely to be observed include the following:

[25] The Observation Guide asked observers to note if "During the assessment conversation, did the WIC CPA explore the participant's cultural behaviors and beliefs?" The Guide did not provide additional instructions on what this conversation would look like. However, the question of what types of food a participant's/caregiver's children eat was often discussed during the nutrition assessment, and observers did not consider this discussion to be exploring cultural behaviors and beliefs.

- The CPA provided a clear explanation of the WIC risk assessment process and its purpose—observed in only 11 percent of in-person appointments.[26]

- The CPA successfully used the MIS to build rapport with the participant by inviting the participant to look at the computer screen during the assessment[27]—observed in 19 percent of in-person appointments.

- When multiple risks were identified, topics for nutrition education were prioritized in discussion with participants to determine their priorities—observed in 33 percent of combined remote and in-person appointments.

- In a re-certification visit, the CPA follows-up on progress made—observed in 39 percent of combined remote and in-person re-certification appointments.

The Observation Guide asked observers to respond to the following question, "Throughout the session, in what ways, if any, did the WIC staff appear not attentive to the WIC participant or caregiver's needs or concerns?, which may indicate a lack of participant-centered communication skills, which are an important part of VENA guidance. Most frequently, observations included *no* instances of staff appearing inattentive to the WIC participant or caregiver's needs or concerns. Observers noted examples of WIC staff appearing not attentive to the participant's needs or concerns in 11 percent of in-person appointments (28 out of 261) and 15 percent of remote appointments 46 out of 305) observed.

In the in-person environment, these comments on how assessments did not align with VENA guidance on participant-centered communication mostly described two issues—observations in which WIC staff were focused more on the computer screen than the participant (6 of 28 responses) and observations in which WIC staff did not ask the participant about their concerns or priorities (13 of 28 responses). Other rarely observed behaviors not in alignment with a participant-centered approach to assessment included periods of silence while staff input information into the MIS or waited for screens to load, asking few follow-up questions based on participant responses, interrupting the participant as they talked, answering emails or phone calls during a session, and not asking about dietary preferences related to culture.

[26] Data for this item are not included for remote appointments because observers may not have had the opportunity to observe these items. For observed remote appointments, WIC staff called the participant and talked to them about the study before an observer joined the call. Because observers did not join the phone call from its beginning, the extent to which observers were unable to observe items at the beginning of the session is unknown.

[27] Inviting a participant to view their computer screen during a nutrition assessment is one method for building rapport between participants and WIC staff. Observed WIC staff generally spent much of the appointment time entering data into the MIS; inviting the participant to view their computer screen helps to bring the participant into the assessment process. This method is not explicitly mentioned in VENA guidance and mainly applies to appointments that include showing pregnancy weight gain or growth charts to participants. Thus, these are potential reasons for the low percentage of observations where this practice was observed.

In the remote environment, the most common response to the question of how appointments did not align with VENA described sessions as feeling rushed (10 of 46 responses). The remote sessions were sometimes rushed due to scheduling mistakes but could also be rushed when the situation (for instance, crying children in the background) made it difficult to communicate with the participant over the phone. Other rarely observed behaviors included interrupting or talking over the participant, no follow-up or probing of the information provided, no provision of nutrition education, very scripted discussion that appeared not to be personalized (i.e., the WIC staff followed the questions listed in the MIS without variation), and no advice provided in response to questions asked.

5.4 Variations in the Operationalization of VENA

To examine how VENA impacts the nutrition assessment process, analysts explored the relationship between the VENA operationalization composite measure described in section 5.2 (referred to as the "VENA score") and assessment outcomes. Table 5-4 presents the results of this analysis. This analysis used 24 clinics that had at least 5 in-person appointment observations. Data from the remote data collection phase were not used. Clinics were arrayed by their VENA score and divided into three groups. The bottom third of clinics had VENA scores of 4.4 or less, the middle third had VENA scores between 5.3 and 5.8, and the top third had VENA scores of 5.9 to 7.1. Assessment outcome measures were calculated for each set of clinics.

Among the assessment outcomes, the most revealing may be the percentage of risks automatically generated by the MIS. Clinics with the highest VENA score had the lowest percentage of risks automatically generated by the MIS—64 percent compared to 74 percent and 72 percent for the lowest and middle thirds, respectively. This was true even though clinics with high VENA scores assigned essentially the same number of nutritional risks per participant than clinics with the lowest VENA scores (2.6 versus 2.7 risk codes per participant for high- and low-VENA-score clinics, respectively). The highest VENA scores appear to be associated with staff that are less reliant on the MIS to determine risk codes. The middle and top third of clinics are also more likely than the lowest third to have observations with an assigned high-risk code. This may suggest that a greater adherence to VENA principles allowed for a more complete understanding of participants' nutritional risks and, therefore, more observations with participants being assigned high-risk status.

Interestingly, the bottom third of clinics were the least likely to have observations with only one nutritional risk assigned per certified participant. This may be a function of their reliance on the MIS to generate risk codes. Anecdotally, in at least one clinic visited, the MIS generated more risk codes than the WIC staff could explain. Discussions with staff in this clinic about the risks assigned for an observed visit often resulted in an "I don't know why that code was assigned" response.

Finally, clinics in the lower third were the least likely to have been assigned referrals or provided nutrition education in response to an assigned risk.

Table 5-4. The relationship between Value Enhanced Nutrition Assessment (VENA) operationalization and assessment outcomes

Assessment outcomes	Percentage of observations/Average number of risks		
	Clinics in bottom third[1]	Clinics in middle third[1]	Clinics in top third[1]
Average number of risks identified per participant	2.7	2.1	2.6
Percentage of risks automatically generated by the MIS	73.8%	72.3%	64.0%
Percentage of observations with only 1 risk per participant certified	12.5%	26.1%	24.2%
Percentage of observations with an assigned high-risk code	27.9%	35.7%	31.6%
Percentage of identified risk codes with an assigned referral	14.1%	18.2%	16.0%
Percentage of identified risk codes with offered education and counseling	54.3%	57.4%	60.3%
Number of observations/identified risk codes	84/327	87/271	86/320

[1]The bottom third of clinics had VENA scores of 4.4 or less, the middle third had VENA scores between 5.3 and 5.8, and the top third had VENA scores of 5.9 to 7.1.

Note: Clinics were used in this analysis if they had at least 5 observations in the in-person data collection.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observations of Nutrition Services Components of WIC Certification. Tabulations are not weighted. See appendix E, Table 52.

5.5 VENA Operationalization Remotely Versus In-Person

In both the remote and in-person environments almost every participant reported experiences that align with the participant-centered approach promoted by VENA principles. Whether their appointment was conducted in person or by phone, participants agreed that WIC staff greeted them warmly, made them feel at ease, listened to their needs and concerns, and explained things clearly in a way they could understand. Remote service did not negatively impact the ability of WIC staff to provide participant-centered services, at least not in the ability of WIC staff to ensure that participants felt welcome and listened to.

But there were aspects of VENA guidance that could not be replicated in the remote environment. In particular, rapport-building actions such as looking directly at the participant or inviting the participant to look at the computer screen during the assessment were not possible in an assessment conducted over the phone. Providing services in person gave staff more opportunities to use the full array of VENA guidance. VENA was developed long before remote services were considered a possibility for WIC participants and FNS may want to explore updating VENA for the "remote world."

6. Variation in Clinic Flow and Total Visit Time

Key Findings

- Visit time varies by the number and type of activities conducted during the appointment and the number of participants being certified.
- The average length of an appointment was shorter for remote appointments than in-person appointments by almost 15 minutes (average time of 24.8 minutes for remote and 39.7 minutes for in-person).
- Almost all remote appointments had all activities conducted in a single session. For in-person appointments, there were more opportunities for separate sessions within the WIC appointment, but still, 42 percent of observed in-person appointments were conducted in a single session.
- The clinic flow for the typical in-person nutrition assessment appointment had four steps:
  - the WIC participant checks in and WIC staff determine eligibility;
  - height and weight measurements and bloodwork are collected;
  - the nutrition assessment is completed, nutrition education is provided, referrals are offered to the WIC participant; and
  - food package benefits are issued.

This chapter of the report looks at two aspects of participants' WIC clinic experience: (1) clinic flow (how participants move through the clinic during an enrollment or recertification visit), and (2) visit length (i.e., the amount of time elapsed from front office intake through each step of the nutrition assessment, education, referrals, and EBT card food package issuance).

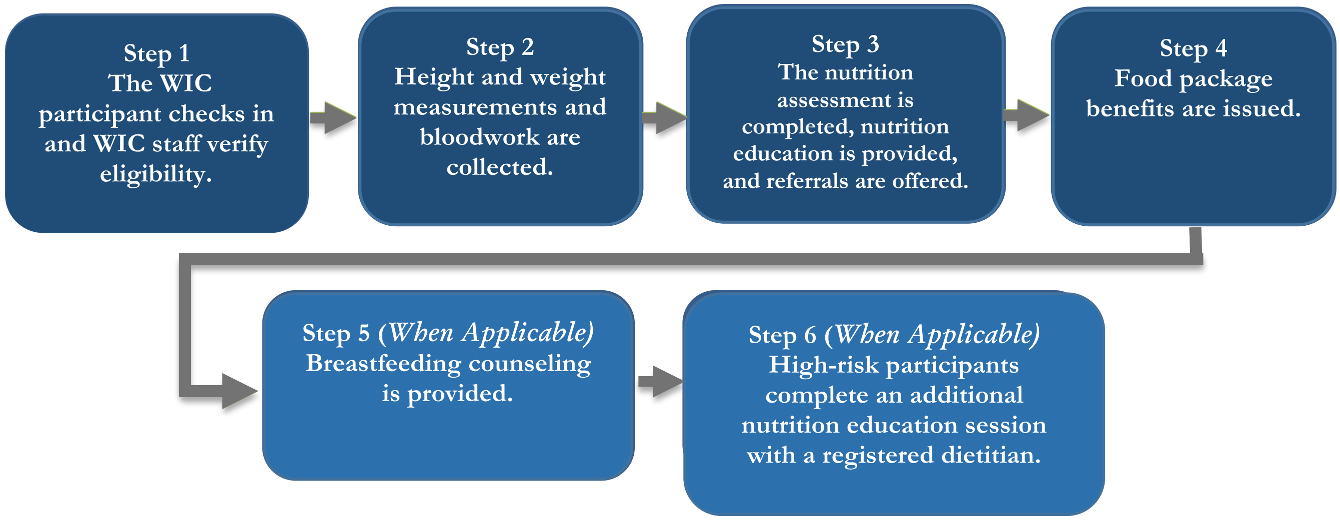
6.1 Clinic Flow

Clinic flow was observed in 25 WIC clinics during in-person site visits. Observers documented clinic flow by creating a flowchart that recorded the typical steps they observed while accompanying participants during their visit. These flow charts are included in appendix F. Additional details of the clinic environment were recorded on the Clinic Environment Observation Form. The data from these forms are included in appendix G.

6.1a How Participants Move Through the Assessment Process

Figure 6-1 displays the key steps for a typical appointment.

Figure 6-1. WIC appointment key steps



Step 1: The WIC participant checks in and WIC staff verify eligibility. Participants typically checked in at the clinic front desk. In one case, a clinic had no front desk clerk, so the CPA completed the income verification. Some clinics had health questionnaires for participants to fill out before proceeding to other intake activities with a clerk. Flowcharts show that the intake occurred at the front desk for all but one clinic, which had a separate room for this purpose. In clinic observation form data, 13 of the 25 clinics were described as having a private area for the certification intake process, suggesting that for some clinics, the front desk area was open and not particularly "private." Conversation occurring there might not be completely private. In one clinic, the front desk was in the middle of a large room in the center of the clinic; participants were brought into the room one at a time for their eligibility determination so there was a measure of privacy provided.

Step 2: Height and weight measurements and bloodwork are collected. A clerk, CPA, or less commonly, a WIC staff member such as a registered nurse or lab tech collected the anthropometric and bloodwork measurements. Most clinics used a private area, such as a clinic "lab" or the CPA's office, to collect these measurements (21 of 25 clinics). A few clinics had a scale and stadiometer located in the hallway. In one clinic, no bloodwork was being collected at the time of the observations. Sometimes this step in the process was split between WIC staff members, where the WIC clerk collected height and weight measurements and the CPA completed the participant's bloodwork.

Step 3: The nutrition assessment is completed, nutrition education is provided, and referrals are offered to the WIC participant. These services were typically provided together by a CPA during a single session in the CPA's office. In some clinics, high-risk participants would be seen for this portion of their visit by an RD; in other clinics, high-risk participants would be seen by a CPA and referred to see an RD at the end of their appointment or at a later date. For all but one clinic, this portion of the appointment occurred in the CPA's or RD's private office. In the remaining clinic, the visit took place in a cubicle if one person was attending the appointment and in the break room if multiple people were attending the appointment. At one clinic, the CPA reviewed the participant's WIC food redemptions before bringing the participant into their office in order to discuss with the participant what portion of the food package they were actually using.

Step 4: Food package benefits are issued. Most commonly, the CPA issued food package benefits in their office after completing assessment, education, and referrals. In a few clinics, the clerk at the front desk would issue benefits for the participant instead.

The following steps were included in some but not all clinic flowcharts:

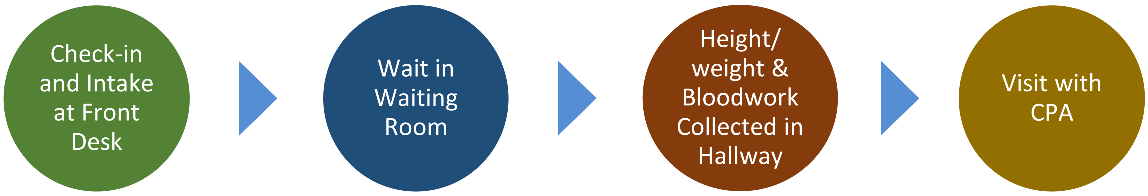
- **Step 5: Breastfeeding counseling is provided to the WIC participant.** Breastfeeding counseling could be provided by either the CPA, a peer counselor, or other breastfeeding expert (e.g., an International Board Certified Lactation Consultant). Clinics varied in terms of when this step occurred. For some clinics, the CPA might provide breastfeeding counseling during the main portion of the appointment following the assessment, education, and referrals. For other clinics, a participant might meet with a peer counselor or breastfeeding expert at the beginning, middle, or end of their WIC visit. Typically, this would occur in a private room, but for a few clinics, breastfeeding counseling took place in the waiting area.
- **Step 6: Separate nutrition education session with RD.** If a new participant was identified as high-risk during an initial certification appointment and was certified by a CPA who was not an RD, the participant was typically referred to an RD for an additional discussion at the end of their appointment; if the RD was not available at that time, the participant might be asked to return for a follow-up visit. If a participant who had already been identified as high-risk was returning for a recertification, they might be seen for the nutrition assessment and education portion of their visit by an RD.

At one observed clinic, WIC participants could visit a "shopping room" to get donated food or clothing at the end of their visit.

Variations in Clinic Flow

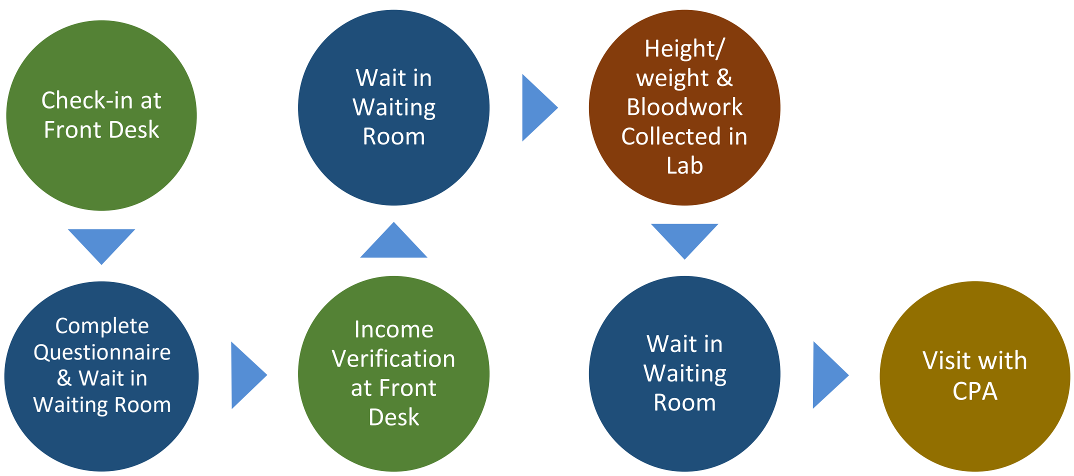
Although all visits included steps 1 through 4 listed above, the amount of physical movement throughout the clinic and the frequency of returning to a waiting room in between steps during the appointment varied. Figure 6-2 provides an example of a typical streamlined appointment.

Figure 6-2. Clinic flow example A



In less streamlined appointments, participants might return frequently to the waiting room in between steps of their appointment. Some clinics had both an outer and inner waiting area. Participants generally waited in the outer waiting area prior to intake and in the inner waiting area after intake. Figure 6-3 provides an example of the clinic flow in a less streamlined appointment.

Figure 6-3. Clinic flow example B



Frequent movement through the office does not necessarily indicate that these were significantly longer appointments compared to those with fewer steps. In some cases, the interim waiting periods were for staff to complete documentation or load benefits.

Flexibility in Staff Roles

In some clinics, the CPA and clerk alternated responsibility for the same tasks depending on who had availability. For example, in one clinic, the clerk would typically issue benefits, but if the front desk was busy when a participant's appointment ended, the CPA could also issue benefits in their private office. In another clinic, the same flexibility in roles applied to collecting height and weight measurements.

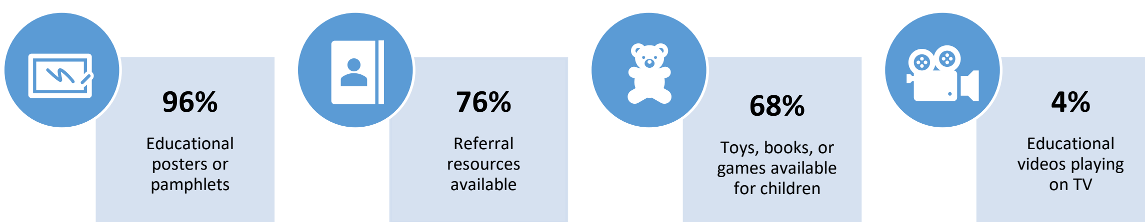
6.1b WIC Clinic Characteristics

On the first day of each site visit, WIC staff took observers on a tour of the WIC clinic. Observers then completed the Clinic Environment Observation Form, which included various questions about clinic characteristics and features.

Waiting Room

Of the 25 observed WIC clinics, all had at least one waiting room. Fifteen of the clinics had one waiting room, and the remaining 10 had two waiting rooms. Nine of the clinics were located within county health department/unit buildings next to other services (e.g., immunization clinics, vital statistics offices, dentists). These clinics had a common waiting area shared by all services; some of them had a second waiting room used only by WIC participants once they checked in for their appointment. Nearly all clinics had various educational materials available in the waiting area; most had referral resources and activities for children available as well (see Figure 6-4). Fourteen of the 25 clinics had signs directing participants to the check-in desk. Three clinics had no signage; in the remaining eight clinics, observers noted that signage was not needed.

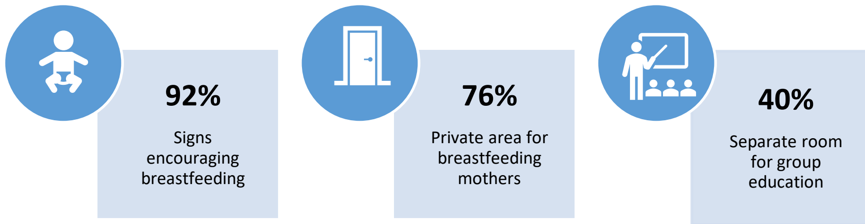
Figure 6-4. Waiting room characteristics



Other Clinic Features

Almost all clinics had signage encouraging breastfeeding, and most had a private area available for breastfeeding mothers (not including the restroom). Some had a separate room for group education classes. Not all clinics conducted group education classes at the time of the observation; some clinics previously conducted group education classes but stopped during the COVID-19 pandemic (see Figure 6-5).

Figure 6-5. Clinic characteristics



6.2 Total Visit Time

Visit time was captured on the appointment observation form. Observers started recording time after the informed consent process was complete and participants were called to start their appointments. Visit time can vary by the number and type of activities conducted during the appointment and the number of participants being certified. Specific issues sometimes resulted in longer appointments. For instance, observers noted that appointments in which the participant received a breast pump took much longer than a typical appointment.

Table 6-1 presents overall visit time in the remote and in-person environments. The average length of an appointment was shorter for remote appointments than in-person appointments by almost 15 minutes (average time of 24.8 minutes for remote and 39.7 minutes for in-person). Remote appointments often included fewer activities conducted (most notably, the lack of anthropometric measurements and bloodwork taken during remote appointments) than in-person appointments (see Tables 6-3 and 6-5), which contributed to shorter appointments. Another issue for remote appointments that likely contributed to shorter appointments was that these appointments were sometimes scheduled during a break in the participant/caregiver's workday. Coming to the clinic to be certified requires participants to set more time aside for the appointment, allowing for longer appointments.

The average number of participants certified per appointment did not vary much between remote and in-person appointments (1.4 versus 1.5; data calculated from numbers presented in Table 6-1). While average visit time per participant certified was shorter for remote than for in-person visits, the difference was smaller—about 9 minutes—than for the overall average time per appointment.

Table 6-1. Overall visit time in the remote and in-person environments

Overall visit time	Number of appointments observed/ participants certified	Average time (minutes)[1]	Median time (minutes)
Remote appointments			
Time per appointment	298	24.8	22
Time per participant certified	424	17.4	–
In-person appointments			
Time per appointment	244	39.6	35.5
Time per participant certified	359	26.9	–

[1]Average times were calculated by summing appointment times across all appointments with data and dividing by the number of appointments observed and by the number of participants certified.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Observation Guide. Remote observations were conducted fall 2021 - spring 2022, and in-person observations were conducted summer and fall 2022. Activities Conducted. Tabulations are not weighted.

The research protocol assumed observers would be able to record separate times for individual activities. However, observers discovered that appointments were generally not conducted in a manner that allowed for times to be recorded by activity. In most cases, activities such as education and counseling, referrals, and the food package prescription were conducted with the assessment. As CPAs asked assessment questions, they often followed up individual questions with education or a referral related to the topic at hand. For instance, if the CPA asked about whether or not a child had seen the dentist, they might follow up the question with a discussion of when to start brushing a child's teeth or offer a list of dentists in the area who accepted Medicaid. In this way, education, referrals, the food package prescription, and sometimes, anthropometric measurements and lab work were woven together into one seamless session.

Almost all remote appointments had all activities conducted in a single session. There were just 12 observed remote appointments in which a participant was put on hold between sessions and passed to a second WIC staff member who completed part of the assessment, generally the food package prescription. For in-person appointments, there was more opportunity for separate sessions, but still 42 percent of observed in-person appointments were conducted in a single session (calculated from Table 4 in appendix E). The time data available for sessions in which a single activity was conducted are limited, but are presented in appendix H.

6.2a Remote Appointment Times

Table 6-2 presents the distribution of average time spent on remote appointments. Observers recorded time for these appointments beginning once the informed consent was completed and ending when the appointment phone call ended. The largest percentage of appointments fell in the 20-to-30 minute range (36 percent). Almost 30 percent of appointments were 30 minutes or more. For 7 percent of observed remote appointments, the entire appointment took less than 10 minutes.

Table 6-2. Average time spent on observed appointments (remote)

Average time spent	Appointment observations	
	Number	Percentage
< 10 minutes	21	7.0
10 to < 20 minutes	83	27.9
20 to < 30 minutes	106	35.6
30 minutes or more	88	29.5
Maximum appointment length	87	
Number of observed appointments	298	

Notes: Tables with observation data report how often an item was observed. Items may not have been observed for many reasons, including: the item was not applicable to the observed participant, the item was already known to WIC staff due to previous contact with the participant, shorter remote visits did not allow for discussing all items, items were discussed before a data collector joined the call, or data collectors missed reporting an observed item. Percentage totals may not add to 100 due to rounding.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Remote Observation Guide, fall 2021 – spring 2022, Activities Conducted. Tabulations are not weighted. See appendix E, Table 3.

Almost half of remote appointments (47 percent) included just three activities—a nutrition assessment, nutrition education, and the food package prescription (see Table 6-3). The average length of time to complete a remote appointment with these three activities was 23.0 minutes. About 33 percent of remote appointments included a fourth activity—referrals. These appointments lasted, on average, 27.6 minutes. The additional time for these appointments undoubtedly represents not only the time spent on talking about and providing the referral, but also more time spent on the assessment and counseling that helped discern the need for the referral.

Some observers indicated that anthropometric measurements and lab work were conducted during the remote appointments; however, these activities were not actually conducted during remote appointments, but rather were only discussed. These activities are not included in this analysis.

Table 6-3. Mean and median visit time per observation for visits with common combinations of activities conducted during remote appointments

Combination of activities conducted	Percentage of observations	Average time (minutes)	Median time (minutes)
Nutrition assessment, nutrition education, food package prescription	47.4	23.0	21
Nutrition assessment, nutrition education, food package prescription, referrals	32.9	27.6	25
Nutrition assessment, food package prescription	8.2	23.8	22
Other combinations	11.5	24.7	21
Number of observed appointments	304		

Notes: Tables with observation data report how often an item was observed. Items may not have been observed for many reasons, including: the item was not applicable to the observed participant, the item was already known to WIC staff due to previous contact with the participant, shorter remote visits did not allow for discussing all items, items were discussed before a data collector joined the call, or data collectors missed reporting an observed item. Observers selected all activities that applied.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Remote Observation Guide, fall 2021 – spring 2022, Activities Conducted. Tabulations are not weighted. See appendix E, Table 2.

6.2b In-Person

Table 6-4 presents the distribution of average time spent on in-person appointments. A small number of appointments (12) were completed in 15 minutes or less (5 percent). Another 28 percent were completed in 15 to 30 minutes. The remainder were equally divided between appointments lasting 30 to 45 minutes and 45 minutes or more (34 percent each).

Table 6-4. Average time spent on observed appointments (in-person)

Average time spent	Appointment observations	
	Number	Percentage
< 10 minutes	3	1.2
10 to < 20 minutes	21	8.6
20 to < 30 minutes	56	23.0
30 minutes or more	164	67.2
Maximum appointment length	125	
Number of observed appointments	244	

Notes: Tables with observation data report how often an item was observed. Items may not have been observed for many reasons, including: the item was not applicable to the observed participant, the item was already known to WIC staff due to previous contact with the participant, visits did not allow for discussing all items, or data collectors missed reporting an observed item. Percentage totals may not add to 100 due to rounding.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, In-Person Observation Guide, summer and fall 2022, Activities Conducted. Tabulations are not weighted. See appendix E, Table 6.

Average and median times for appointments with common combinations of activities conducted during in-person data collections are presented in Table 6-5. Thirty percent of in-person appointments included all six appointment activities—assessment, education, food package prescription, referrals, anthropometric measurements, and lab measurements (i.e., bloodwork). The average appointment time for this combination of activities was, not surprisingly, the longest across all activity combinations (47 minutes). The most common combinations of activities always included assessment, education, and food package prescriptions. When anthropometric and lab measurements were added, appointments took, on average, 37 minutes. When anthropometric measurements and referrals were added, appointments took, on average, 41 minutes. Generally, appointments with just 4 or 5 activities were about 10 minutes shorter than appointments with all 6 activities.

Table 6-5. Mean and median visit time per observation for visits with common combinations of activities conducted during in-person appointments

Combination of activities conducted	Percentage of observations	Average time (minutes)	Median time (minutes)
Nutrition assessment, nutrition education, food package prescription, referrals, anthropometric measurements, lab measurements	30.1	47.0	40
Nutrition assessment, nutrition education, food package prescription, anthropometric measurements, lab measurements	37.1	37.4	31
Nutrition assessment, nutrition education, food package prescription, referrals, anthropometric measurements	11.6	40.8	37
Nutrition assessment, nutrition education, food package prescription, anthropometric measurements	7.3	36.9	35
Nutrition assessment, nutrition education, food package prescription, referrals	6.2	36.8	38.5
Other	7.7	26.2	20.5
Number of observed appointments	259	243	

Notes: Tables with observation data report how often an item was observed. Items may not have been observed for many reasons, including: the item was not applicable to the observed participant, the item was already known to WIC staff due to previous contact with the participant, visits did not allow for discussing all items, or data collectors missed reporting an observed item. Observers selected all activities that applied.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, In-Person Observation Guide, summer and fall 2022, Activities Conducted. Tabulations are not weighted. See appendix E, Table 5.

7. Staff Satisfaction and Perceptions

Key Findings

- When asked about their perceptions of the assessment process, most staff members agreed that the nutrition assessment process was effective in identifying participants' nutritional risks.
- Many staff described the MIS as a useful, flexible tool that helped capture risk codes, prompted them to provide referrals, recorded information crucial to the participant's health and nutrition, and set the pace of the appointment.
- Staff believed that the assessment and its questions documented the full range of a participant's health and nutrition and that it enabled staff to fulfill participant needs.
- There were some challenges associated with using the MIS. Staff observed during in-person data collection reported that typing in the MIS while conversing with participants was challenging. Entering data using the MIS's drop-down boxes and checklists was cumbersome at times, especially when trying to maintain conversation and eye contact with the participant while capturing information.
- Other challenges related to the nutrition assessment included concerns about the quality of communication during remote appointments. Some staff felt that participants did not treat the remote appointment as a real appointment, and often multitasked during their appointment or forgot the appointment altogether.
- Staff indicated that walk-in appointments negatively impacted them since they could not judge the potential duration of an appointment and how it would impact their workflow.
- Staff offered a number of ideas regarding resource needs and suggestions for improvement covering a variety of issues including improving the use of technology and obtaining better equipment, better communications with healthcare providers, updating information collection and dissemination, improving the cultural sensitivity of service provision, increasing staffing, and other items.
- Sixty-one percent of staff in the in-person environment agreed with the statement that the assessment results in an appropriately tailored food benefit package. Twenty percent were undecided, and another 20 percent disagreed with the statement.
- About three-quarters of staff in both the in-person and remote environments agreed or strongly agreed that they have all the resources needed to perform a nutrition assessment.

This chapter examines staff perceptions of (and satisfaction with) the WIC nutrition assessment process. Qualitative data from staff interviews detail suggestions to improve the process and identify resource gaps experienced by WIC clinic staff. The staff interview guide did not ask WIC staff directly about their satisfaction with the WIC process. Instead, there were a number of Likert scale questions in which staff indicated the strength of their agreement with certain statements about the nutrition assessment process, resources needed, the use of technology by their clinic, and clinic flow. Agreement with positive statements was assumed to align with staff satisfaction. Factor analysis was used to turn the responses to these Likert scale questions into a composite measure of staff satisfaction.

Table 7-1 presents data on staff characteristics for staff who were interviewed in the remote and in-person data collection. Some staff may have been interviewed for both data collection efforts. There were no significant differences between the two groups based on years worked at their WIC clinic or type of WIC participants seen for nutrition assessment appointments.

Table 7-1. Staff characteristics, by assessment mode

Characteristics	Remote		In-person	
	Number of respondents	Percentage	Number of respondents	Percentage
Years worked at WIC clinic				
Less than 2 years	21	23.6	26	29.9
Between 2 and 4 years	23	25.8	19	21.8
5 years or more	45	50.6	42	48.3
Number of staff respondents	89		87	
Type of WIC participants seen for nutrition assessment appointments				
All types of participants	76	85.4	63	74.1
Only non-high-risk participants	12	13.5	17	20
Only high-risk participants	0	0	2	2.4
Other	1	1.1	3	3.5
Number of staff respondents	89		85	

* Indicates in-person versus remote differences thatare significant at $p \leq 0.05$.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Staff Interviews, questions 1 and 3. Remote data collected fall 2021 - spring 2022, and in-person data collected summer and fall 2022.Tabulations are not weighted. See appendix C, Table 5.

The remaining sections of this chapter present qualitative analysis of staff interview discussions of their perceptions of the assessment process, resources needed, and suggestions for improvement in sections 7.1 and 7.2. Quantitative analysis of staff satisfaction using the responses to the Likert scale questions described above is contained in section 7.3.

7.1 Staff Perceptions of the Assessment Process

When asked about their perceptions of the assessment process, most staff members agreed that the nutrition assessment process was effective in identifying participants' nutritional risks. Many staff described the MIS as a useful, flexible tool that helped capture risk codes, prompted them to provide referrals, recorded information crucial to the participant's health and nutrition, and set the pace of the appointment. Staff believed that the assessment and its questions documented the full range of a participant's health and nutrition and that it enabled staff to mostly fulfill participant needs.

7.1a Challenges

Staff interviews highlighted three challenges to conducting quality nutrition assessments: appropriate use of the MIS and other technology, conducting appointments remotely, and walk-in appointments.

MIS and other technology. While comments related to the WIC MIS were generally positive, there were a few interviewed staff who described shortcomings in the nutrition assessment process related to the use of the MIS. Some believed that the risk assessment process as programmed into the MIS was inefficient for low-risk participants. One staff member shared that:

> *"[The nutrition assessment] almost feels like an extra hoop for my already very stressed-out patients to go through just to obtain their benefits." – Clinic staff*

Staff observed during in-person data collection also reported that typing in the MIS while conversing with participants was challenging. During an appointment, some staff noted comments on paper and updated the MIS at a later point. Entering data using the MIS's drop-down boxes and checklists was cumbersome at times, especially when trying to maintain conversation and eye contact with the participant while capturing information. One staff member described the long-term impacts of the MIS's unwieldiness, stating that:

> *"Sometimes [the MIS] limits us from understanding the bigger picture … we have a lot of check marks and boxes to check and go through. And so that doesn't always give us time to really dive deep and try to really get to know these people. And that's kind of doing rapport and getting to know some of your clients. That's how you're going to know more about their culture, their beliefs, their values. And if we don't have the time to do that and we're just checking boxes the entire time, that makes it hard." – Clinic staff*

In responses to questions about both remote and in-person services, staff elaborated upon the technological issues that sometimes stymied their daily workflow. Staff observed that the WIC card reader, along with the MIS, were sometimes very slow, which often hindered clinic flow. They requested updates to the MIS and card reader technology to improve the efficiency of their work. Staff at one clinic that used a hard-copy health assessment form noted that the form was challenging to populate manually, and that they would prefer a completely digital version of the form. Staff commenting on remote services also described how issues with poor cell phone service in their areas hampered the quality of their counseling, noting that appointments were sometimes interrupted by spotty cell service or participants' phones running out of battery power.

Conducting remote appointments. Staff expressed concerns about the quality of communication when conversing with participants during the provision of services remotely. Staff disliked that they were unable to obtain accurate height and weight measurements for appointments conducted via phone and reported that catching delays in child development was more difficult in remote assessments. Some felt that participants did not treat the remote appointment as a real appointment and often multi-tasked during their appointment or forgot the appointment altogether. One staff member felt that the remote visits were rushed compared to in-person visits, in part because participants were often in a hurry to complete the appointment. Staff also believed that remote services did not foster personal connections with the participants, which stifled potential for rapport and restricted the type of guidance they could offer to participants.

Walk-in appointments. In several of the in-person interviews, staff discussed different scheduling approaches to manage clinic flow. To manage flow, some in-person clinics avoided scheduling appointments weeks in advance and preferred walk-in appointments or appointments scheduled closely after initial contact with the participant. Instead of scheduling clinic appointments in advance, one clinic offered participants a reminder card indicating when to call the clinic for their next appointment. Participants then called to schedule their appointment for that week or sometimes even the same day. The staff noted that this scheduling approach reduced their instances of "no-shows" and cancellations.

In other clinics, walk-in appointments negatively impacted the staff since they could not judge the potential duration of an appointment and how it would impact their workflow. In one clinic, a staff member described how walk-in appointments quickly crowded a clinic's waiting area, which posed a risk of COVID-19 infection among immunocompromised participants. To this staff member, walk-in recertification appointments were particularly challenging because they often took a while, which resulted in delays for the day's subsequent appointments. They offered a remote solution to this issue:

> *"… if we could do more follow-up phone appointments, and then … if [the participants] have a transportation issue, they don't have to come here, and we can do that follow-up with them. Maybe do the certification in person, if possible, but then do the follow-ups over the phone. And that would keep the traffic out of the lobby." – Clinic staff*

7.2 Resource Needs and Suggestions for Improvement

Staff offered a number of ideas regarding resource needs and suggestions for improvement in both the in-person and remote environments. These ideas covered a variety of issues including improving the use of technology and obtaining better equipment, better communication with healthcare providers, updating information collection and dissemination, improving the cultural sensitivity of service provision, increasing staffing, and more.

7.2a Improved Use of Technology and Obtaining Better Equipment

Across most clinics, staff reported technological challenges and suggested a range of upgrades for both remote and in-person service provision. Among all the technological suggestions offered by staff members, sending text-based or email-based appointment reminders to participants was the most common. Staff noted that such a reminder system could prompt participants to confirm attendance. When numerous participants do not arrive at the clinic for their appointments, clinic flow is disrupted. Appointment reminders and confirmations would facilitate smoother clinic flow by preventing "no-shows."

Some staff whose clinics were conducting appointments in person wished they had the capacity to conduct virtual appointments via Zoom or FaceTime, and staff conducting remote appointments requested headsets and the ability to conduct video calls instead of just phone calls with participants. Some clinics did not have the ability to route phone calls to the specific staff, which resulted in staff in these clinics answering calls that were not meant for them and disrupting their workflow. To remedy this, a staff member suggested installing a phone tree so that calls can be directed to specific staff members. Staff at one clinic reported that the clinic had a single cell phone for use by all staff. They wanted each staff member to be provided with a cell phone so that they could give direct numbers to their participants, making communications with their participants easier.

Staff often talked of the importance of resources that enhanced efficiency and preserved time throughout their workday. Many staff providing remote services requested printers in their offices so they could distribute pamphlets and brochures to participants via mail.

Two State agencies that participated in the study were offline EBT States—that is, participants had to bring their WIC card to the clinic to have benefits loaded on to the card. In these State agencies, staff interviewed in both the remote and in-person environments requested the option to remotely load WIC EBT cards.

Staff also suggested updates to MIS system functionality, including auto-populating participant data from previous periods of WIC enrollment and the ability to text participants from the MIS system or WIC app.

7.2b Improved Communication With Healthcare Providers

Staff also expressed a need for better communication with local healthcare providers, particularly for obtaining anthropometric measurements such as height, weight, and bloodwork. Establishing stronger networks with local providers, perhaps through a shared dashboard, would ease the burden on staff and participants. One staff member wanted to encourage providers to refer patients to WIC nutritionists instead of other dietitians in the local area when patients qualified for social safety net programs.

7.2c Updating Information Collection and Dissemination

Staff offered a range of recommendations for the nutrition assessment questionnaire, nutrition education, and the food package prescription process. Staff requested assessment questions that were less redundant and more open-ended, and they suggested expanding and updating risk codes to account for different high-risk populations, such as migrant women or geriatric pregnancies.

Staff also noted most certification appointments did not allow for sufficient time to collect all the information necessary for the nutrition assessment. Staff specifically requested more time for new WIC enrollees with children, who may need additional education about WIC.

Some staff suggested pamphlets and brochures be updated since several were deemed to be outdated. Staff wanted nutrition education videos and local support services in the WIC app to centralize all the information a participant may need. They also requested digital versions of pamphlets so staff could easily text beneficial nutrition education shortly after an appointment, instead of having to print and mail the pamphlets to participants a few days after an appointment.

7.2d Increased Staffing

Staff in several clinics named lack of sufficient staffing at their clinics as a common struggle in their work. Several staff reported challenges with their daily caseload and requested more staff, specifically clerical staff to take anthropometric measurements or lactation consultants for breastfeeding support. Among clinics that were under-staffed, employees donned many hats— they took on the role of the receptionist or the peer counselor for breastfeeding when the clinic experienced an uptick in activity. One staff member stressed the importance of increasing wages to attract more employees:

> *"I think the main thing that needs to be renewed is staff and helping us either increase the pay to be able to get more staff or provide the opportunities…to make sure that we have enough staff to be seeing clients …" – Clinic staff*

7.2e Cultural Sensitivity Training and Resources

Staff in both the remote and in-person environments expressed the need for more training on the various ethnic groups in their area, along with additional probes about cultural dietary restrictions and preferences in the MIS. One staff member suggested the following method of asking participants about dietary beliefs:

> *"'Is there anything you've heard in your family or growing up that you want to ask me about? Is there anything you've heard? Any kind of myths? Or anything that somebody told you in your family that you have any questions about that maybe I can clarify?'" – Clinic staff*

Staff employed in locations with diverse populations mentioned needing additional culturally tailored resources. Staff noted a scarcity of bilingual staff and translators and suggested that WIC develop multilingual versions of WIC apps, pamphlets, and brochures. A few staff also found connecting to a translator via a language line difficult and wished for a streamlined method of connecting to a translator during remote nutrition assessments.

A staff member at one clinic also recommended hiring interpreters who could speak indigenous Central American languages, since a large portion of the clinic's participants were indigenous people from Guatemala. Staff in both remote and in-person environments also requested more flexibility in tailoring the food package for cultural groups, noting that some food items, such as cereals, brown rice, and cheese, were not utilized among certain ethnic groups. Staff requested guidance on how to communicate with migrant populations, particularly since migrant women often do not have official Government records and were unfamiliar with the social safety net landscape.

7.2f Other Suggestions

Numerous staff members preferred that participants complete a digital questionnaire and upload required certification documents or their anthropomorphic measurements to an online portal prior to appointments, particularly to preclude scheduling delays. Some recommended that clinics install kiosks that allow participants to complete questionnaires in the waiting room, if participants do not have the technology to complete questionnaires online. Other staff suggested playing informative videos about WIC in the waiting room to prime and engage participants prior to their appointment.

Several staff in both remote and in-person environments suggested reallocating funds currently reserved for baby food and juices to the CVB for fruits and vegetables.

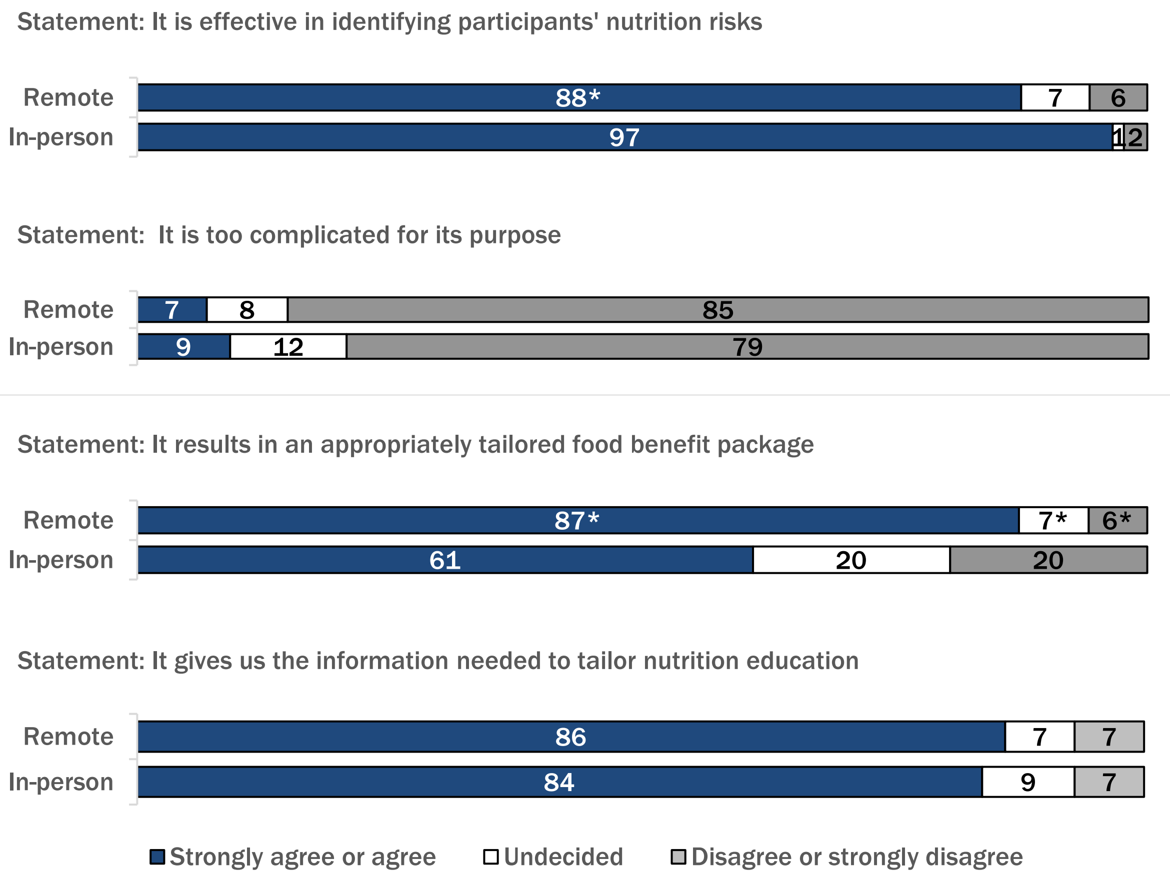
> *"I want to take away the juice—too many calories, too much sugar, kids rely on it too much—and be able to take the money that they would spend on the juice and give it to them in fruits and veggies, I think it'd be more effective. And then for our moms with six-month-olds, giving them an option of making their own food by giving them fruits and veggies instead of the actual baby foods … because we do have a lot of moms who would prefer to make their own." – Clinic staff*

Finally, staff offered participant-centered suggestions regarding the physical layout of their clinics. They wanted to restructure appointments so participants stay in one room and various clinic staff rotate around rooms as needed, which they felt would greatly help clinic flow. Staff suggested that clinics would benefit from rearranging the clinic so that all processes related to anthropometric intake and income eligibility were located in one area. Several staff also reported needing more space for families in the waiting room, given that families typically arrived with baby carriers, strollers, and infant cribs. Some clinics do not have an area for participants to change their children's diapers.

7.3 Staff Satisfaction

Staff were asked their agreement with four statements related to the effectiveness of the nutrition assessment process and four statements related to resources for conducting the nutrition assessment including the MIS and use of technology in general. Figure 7-1 presents responses to the four statements related to the effectiveness of the assessment process.

Figure 7-1. Staff perceptions about the effectiveness of the nutrition assessment process, by assessment mode (percentage of interviewed staff)



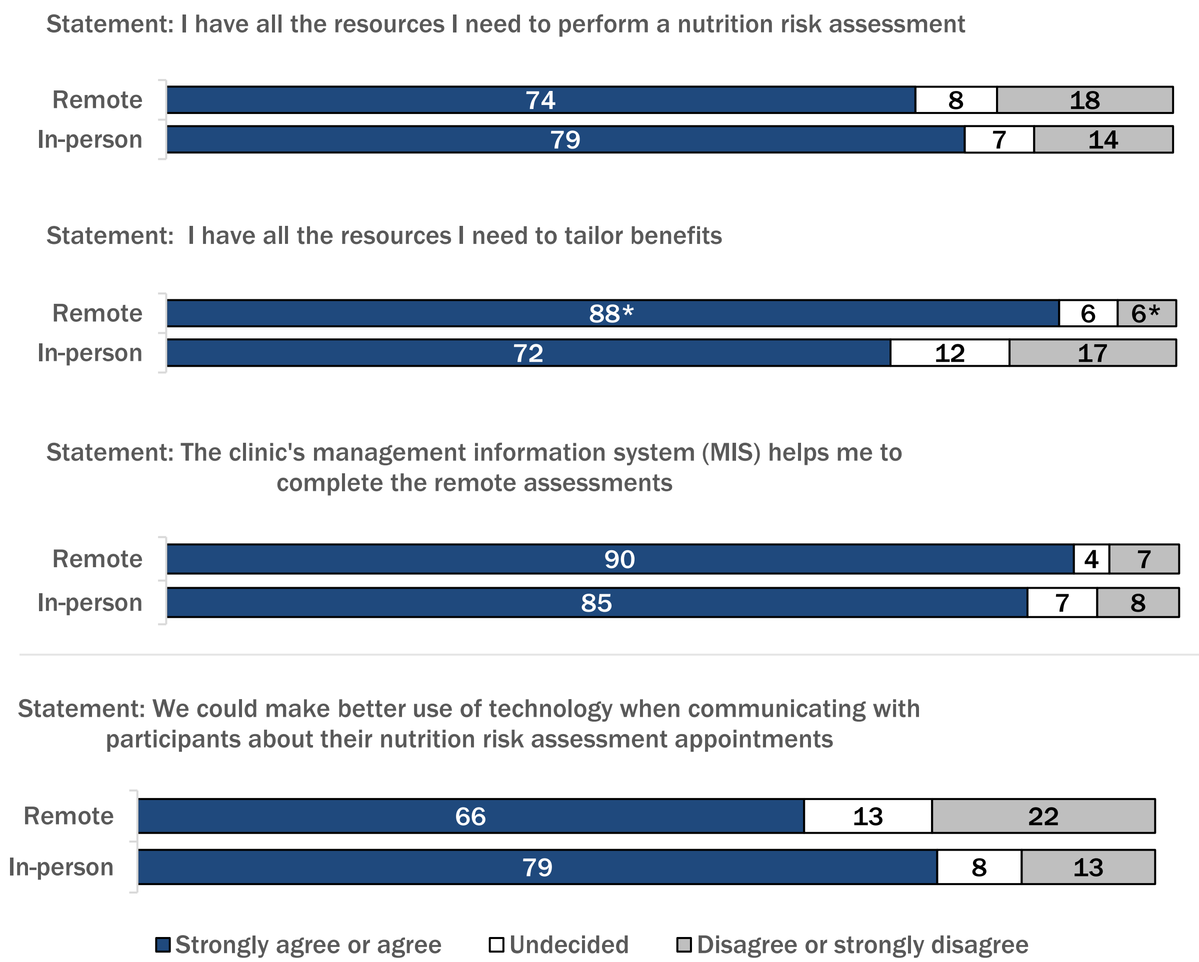
*Indicates in-person versus remote differences that are significant at p≤0.05.
Note: Remote N = 88 and in-person N = 87 for "It is effective in identifying participants' nutrition risks." Remote N = 88 and in-person N = 87 for "It is too complicated for its purpose." Remote and in-person N = 87 for "It results in an appropriately tailored food benefit package" and "It gives us the information needed to tailor nutrition education."
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Staff Interviews, questions 27-30. Tabulations are not weighted. Remote data collected fall 2021 - spring 2022; in-person data collected summer and fall 2022. See appendix E, Table 13.

Staff in both the in-person and remote environments generally agreed (i.e., responded strongly agree or agree) that the nutrition assessment process is effective in identifying participants' nutrition risks, although staff in the in-person environment were significantly more likely to agree with the statement than staff in the remote environment (97 percent versus 88 percent for in-person and remote staff interviews, respectively). The majority of staff did not believe that the nutrition assessment was too complicated. Although most staff agreed that the nutrition assessment gives them information needed to tailor nutrition education, the one area where there was some disagreement was in whether the nutrition assessment process results in an appropriately tailored food package. Remote and in-person responses to this statement were significantly different for all three response categories—strongly agree or agree, neither agree nor disagree, and strongly disagree or disagree. Only 61 percent of staff in the in-person environment agreed with the statement that the assessment results in an appropriately tailored food benefit package. Twenty percent were undecided, and another 20 percent disagreed with the statement. This result aligns with the overall analysis of staff interviews which found that among WIC staff, there were contrasting viewpoints as to how much tailoring is possible within the WIC food package (see section 4.1). It may be that regardless of how the nutrition assessment process is conducted, some staff believe it will not result in an appropriately tailored food package for some participants due to restricted options for food package tailoring.

Figure 7-2 presents responses to the four statements related to resources for conducting the nutrition assessment including the MIS and use of technology in general. About three-quarters of staff in both the in-person and remote environments agreed or strongly agreed that they have all the resources needed to perform a nutrition assessment (74 percent versus 79 percent for remote and in-person environments, respectively) and even larger percentages (90 percent versus 85 percent for remote and in-person environments, respectively) agreed that the MIS helps them complete their nutrition assessments.

There was some disagreement on whether staff had all the resources needed to tailor program benefits, with 72 percent of staff in the in-person environment agreeing with the statement compared to 88 percent of staff in the remote environment; this difference was statistically significant. There was also some disagreement between staff in the remote and in-person environments regarding whether clinics could make better use of technology when communicating with participants about their nutrition assessment appointments. Just 66 percent of staff in the remote environment agreed with this statement, reflecting the challenges with scheduling and keeping appointments described in section 7.1a above.

Figure 7-2. Staff perceptions about resources for conducting the nutrition assessment process, by assessment mode (percentage of interviewed staff)



*Indicates in-person versus remote differences that are significant at p≤0.05.

Note: Remote N = 86 and in-person N = 87 for “I have all the resources I need to perform a nutrition risk assessment.” Remote N = 86 and in-person N = 85 for “I have all the resources I need to tailor benefits.” Remote and in-person N = 87 for “The clinic’s management information system (MIS) helps me to complete the remote assessments. Remote N = 87 and in-person N = 84 for “We could make better use of technology when communicating with participants about their nutrition risk assessment appointments.”

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Staff Interviews, questions 38-40, and 42. Tabulations are not weighted. Remote data collected fall 2021 - spring 2022; in-person data collected summer and fall 2022. See appendix C, Table 13.

7.3a Staff Satisfaction Regression Model

The study team employed multivariate regression to explore independent associations between nutrition service processes and staff satisfaction.[28] Multivariate regression analysis facilitates analyzing multiple factors that may influence an outcome of interest and identifying the independent contribution of each. This section discusses the regression approach used to assess the independent relationships between processes used and staff satisfaction. Appendix I offers additional detail on the regression approach. Combined with the qualitative information previously presented, the regression information presented contributes to a holistic analytical approach.

The regression explored the hypothesis that more tailored nutrition services processes improve staff satisfaction. Four aspects of the nutrition service process were of focal interest: protocols created by the local agency, participants completing forms prior to appointments, the number and types of staff that perform nutrition assessments, and the degree to which the MIS facilitated food package tailoring. The hypothesis was that there would be a positive independent association between each of the process measures and staff satisfaction, as each would contribute to a streamlined and thorough nutrition assessment.

The dependent variable in this regression was an index measure of five interview items identified as likely contributing to staff satisfaction. Factor analysis identified common variation among the items, and factor loadings determined the contribution of each item to the overall index. Additional details on the factor analysis are in section 2.4b. Bivariate analysis facilitated identifying additional independent variables that may be associated with staff satisfaction. The regression results are shown in Table 7-2.

Among the four aspects of the nutrition services process analyzed, the model identified one statistically significant independent association. Asking participants to complete forms prior to their appointments was inversely associated with the index measure of satisfaction, indicating that the practice reduces staff satisfaction. Staff are interested in having participants or caregivers complete forms prior to their appointment as noted above, but only if this process can be done electronically. When participants or caregivers complete a hard-copy questionnaire which then has to be inputted into the MIS, staff find this basically doubles their work. In one clinic where participants complete a hardcopy form, a staff member noted:

> *"I feel like we double-chart a lot with a lot of the questions. And they kind of made some adjustments, but it's not been great. A lot of the questions that [are] in the system are also on our health history form. So just a lot of double work for us." – Clinic staff*

[28] There were an insufficient number of cases across the distribution of responses to staff perceptions of clinic efficiency to pursue multivariate regression analyses with the intent of informing policy. See appendix I for additional detail.

Table 7-2. Adjusted† coefficient estimates and confidence intervals from ordinary least squares (OLS) regression examining factors affecting composite measure of staff satisfaction

Independent variable	Coefficient	Confidence interval
Local agency/clinic characteristics		
Local agency has policy and procedure protocols for the WIC clinics in addition to State policy	0.110	-0.029 – 0.250
Participant is asked to complete form(s) prior to appointment	-0.174*	-0.336 – -0.011
Number of different types of WIC staff that perform the nutrition risk assessment	-0.060	-0.132 – 0.013
MIS food package tailoring: reference category MIS does not help tailor food package		
MIS automatically tailors food package	-0.043	-0.148 – 0.062
MIS suggests food package; WIC staff confirm	0.030	-0.105 – 0.165
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years' experience	-0.044	-0.140 – 0.052
0 - 2 years' experience	-0.068	-0.178 – 0.042
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	-0.161	-0.376 – 0.054
Medium urban	0.049	-0.121 – 0.220
Large urban	-0.105	-0.320 – 0.109
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	0.006	-0.204 – 0.216
Nonprofit organization	0.126	-0.028 – 0.280

† State agency was included as a categorical predictor variable to control for variation by State, though the coefficient estimates are not shown.

*Statistically significant at the 95 percent confidence level.

Notes: After accounting for missing variables, the sample size was 138 observations. The adjusted R-squared value for model fit was 0.18. Two cases with clinic type of "Local government, non-health department" were excluded from the model due to low sample size.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

Though the regression findings were inconsistent with the hypothesis posed, the limited nature of independent associations between processes and staff satisfaction may not be surprising. WIC has a diverse workforce that adapts to a changing environment. It is possible that staff adapt to the available onsite processes and focus more on the mission than the process. In general, staff satisfaction may be driven more by the accomplishment of mission objectives than by the process of achieving those objectives. Certainly, staff may recognize that processes have room for improvement, and the use of hard-copy forms may be one area, but the mission may override the process when assessing staff satisfaction.

8. Participant Satisfaction

Key Findings

- Participants' perceptions of the nutrition assessment process were overwhelmingly positive for both in-person and remote appointments. Almost all participants agreed that they were greeted warmly, made to feel at ease, listened to about their needs and concerns and had things explained clearly to them in a way they could understand.
- About 70 percent of participants in both the remote and in-person environments indicated that WIC staff asked them about their ideas and beliefs about food.
- Over 95 percent of participants agreed that the advice and education they received from WIC staff would help them improve their health and diet.
- Participants observed in the remote environment felt that the virtual nutrition assessment was of the same quality as an in-person assessment because WIC staff appeared attentive, answered their questions, offered them choices in the food package, and clearly explained how to use the benefits in the WIC food package.
- Participants in the remote environment had minimal negative feedback about their appointments. A handful of participants noted that measuring height and weight was easier and more precise in person, and some noted that nutrition education involving pamphlets and diagrams was easier to comprehend in person.
- Many participants in both the remote and in-person environments wanted additional options for modifying the food package. Several requested the option to purchase organic produce and additional substitutions for dairy products, including almond milk or nondairy yogurt. A few participants noted that juice was too sugary, and they would rather substitute juice for more milk, fruits, or vegetables.
- Most participants in the in-person environment (although not all) were satisfied with their clinic's flow, noting that they did not have to wait too long before their appointment and that the waiting room contained toys and a TV that engaged children.
- Participants who received services remotely liked the convenience and efficiency of remote services. They liked no longer having to manage their children in the WIC office, not having to take time off from work to attend an appointment, and not needing to expend gas on the drive to and from the clinic.

This chapter describes participant perceptions of and satisfaction with the WIC nutrition assessment process. Table 8-1 presents the characteristics of interviewed WIC participants in both the remote and in-person environments. The two sets of study participants were largely the same with few significant differences. Participants interviewed as part of the in-person data collection included more post-partum women and infants (27 percent versus 20 percent for in-person and remote participants, respectively) and were more likely to be Hispanic or Latino (24 percent versus 16 percent). There were no significant differences by age, race, or prior WIC experience.

Table 8-1. Characteristics of interviewed WIC participants/caregivers, by assessment mode

Characteristics	Remote		In-person	
	Number of respondents	Percentage	Number of respondents	Percentage
WIC participation status (for all participants assessed at the appointment)[1]				
Pregnant woman	56	20.0	68	26.6
Post-partum woman and infant	55	19.6*	70	27.3
Infant	25	8.9	28	10.9
Child(ren)	167	59.6	135	52.7
Number of participants/caregivers	280		256	
Age		Years		Years
Lowest reported age		18		18
Highest reported age		65		67
Average age		29.0		28.4
Number of participants/caregivers		280		255
Ethnicity				
Hispanic or Latino	45	16.1*	60	23.5
Not Hispanic or Latino	233	83.2*	194	76.1
Don't know	1	0.4	1	0.4
Refused	1	0.4	0	0
Number of participants/caregivers	280		255	
Race[2]				
American Indian or Alaska Native	13	4.6	21	8.2
Asian	4	1.4	5	2.0
Black or African American	56	20.0	58	22.7
Native Hawaiian or Other Pacific Islander	3	1.1	3	1.2
White	192	68.6	161	62.9
Don't know	5	1.8	11	4.3
Refused	5	1.8	7	2.7
Missing	10	3.6	12	4.7
Number of participants/caregivers	280		256	

Table 8-1. Characteristics of interviewed WIC participants/caregivers, by assessment mode (continued)

Characteristics	Remote		In-person	
	Number of respondents	Percentage	Number of respondents	Percentage
Prior WIC experience				
Yes, received WIC benefits while I was pregnant with this child	45	16.4	44	17.4
Yes, received WIC benefits for a previous pregnancy and child	111	40.4	104	41.1
No	63	22.9	60	23.7
Both for a previous pregnancy and while I was pregnant with this child	56	20.4	45	17.8
Number of participants/caregivers	275		253	

*Indicates in-person versus remote differences that are significant at $p \leq 0.05$.
[1]Multiple participants could be assessed at each appointment.
[2]Participants/caregivers were asked to report all races that apply. 9 of 10 records from remote interviews and 10 of 12 records from in-person interviews with missing race reported Hispanic or Latino ethnicity.
Note: Percentage totals may not add to 100 due to rounding.
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Participant interviews. Remote interviews were conducted fall 2021- spring 2022, and in-person interviews were conducted summer and fall 2022. Interview guide questions 34-38. Tabulations are not weighted. See appendix D, Table 8c.

This chapter uses both qualitative and quantitative data from the participant interviews to assess participant satisfaction and examine participant perceptions of the nutrition assessment process and how well their needs were met by WIC clinic staff. The chapter begins with a discussion of participant satisfaction with services received as a whole. This discussion includes an examination of participant perceptions of the nutrition assessment process and how well their needs were met, as these items likely influenced satisfaction with their visit. Section 8.2 looks at participant satisfaction and suggestions for improvement by visit component including the nutrition assessment and education received, the food package, referrals, and appointment scheduling and clinic flow. It is important to note that interviewers encouraged participants to elaborate on their responses to Likert scale questions regarding their satisfaction with program services by asking follow-up questions such as “What makes you say [e.g., very satisfied]?” or “What did you like most/least about the [e.g., food package] you received?” While it was often difficult for participants to provide more information in answers to follow-up questions, participants’ satisfaction with services received is clear.

8.1 Satisfaction With Services as a Whole

Participants felt very satisfied with the services they received, with many describing feelings of ease and comfort during their appointment. Participants appreciated the staff’s gentleness and patience with children, as well as the staff’s empathy and concern whenever sensitive topics surfaced. Participants noted that the staff's explanations were clear and thorough, and they typically left the appointment equipped with information that would help them improve their health and diet. All participants in the in-person environment indicated they were very or somewhat satisfied with their appointment as a whole, as did 99.6 percent of participants in the remote environment (See appendix D, Table 7c).

Participant perceptions of the nutrition assessment process undoubtedly influenced their satisfaction with services. The participant interview asked participants for their level of agreement with four statements related to their perceptions of the nutrition assessment process:

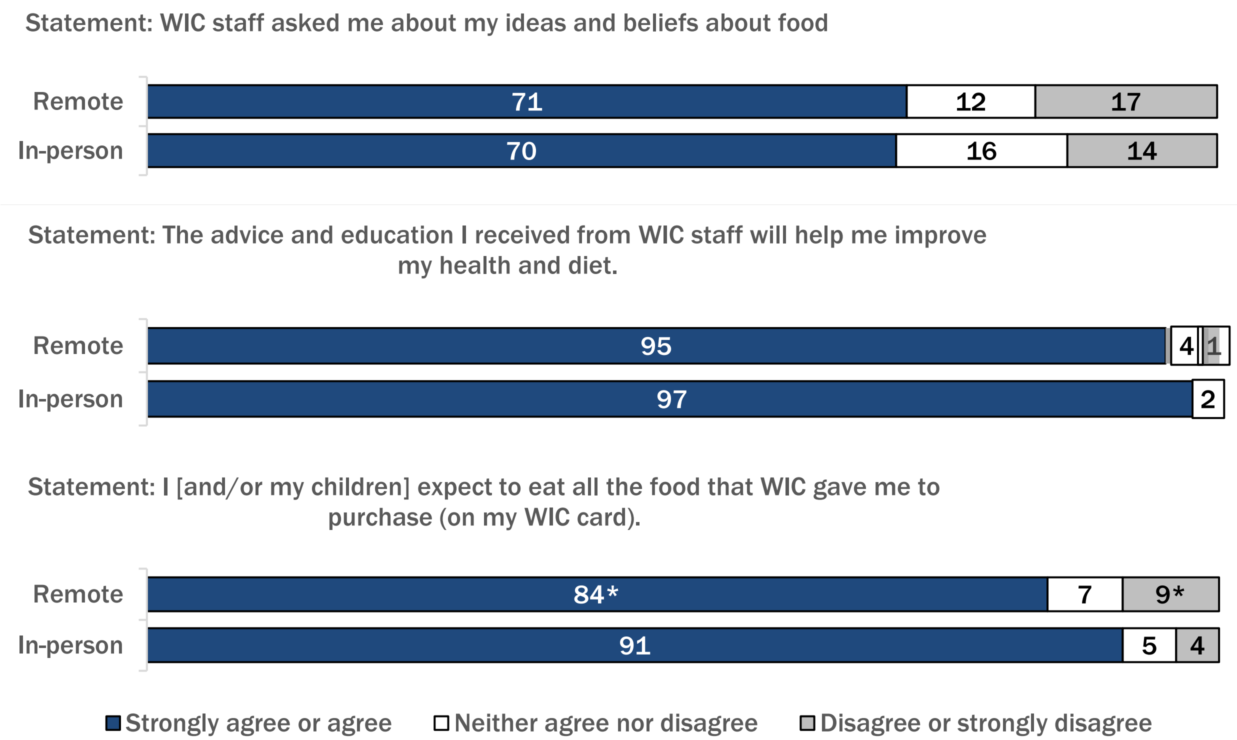
- I was greeted warmly by WIC staff when checking in for the visit / when I began my telephone appointment.
- The WIC staff made me feel at ease.
- The WIC staff member listened to me about my needs and concerns.
- The WIC staff member explained things clearly in a way that I could understand.

Participants overwhelmingly agreed (either strongly agreed or agreed) with all of these statements. For all statements, at least 97 percent of remote and in-person participants indicated they agreed with each statement (see appendix E, Table 5c). A separate analysis of remote and in-person data by urbanicity showed that for in-person participants, those receiving services at a clinic in an urban location were significantly less likely to strongly agree with all the above statements than those receiving services at clinics in a rural location. The same was not true for remote participants, where urban participants differed significantly from rural participants only on the statement related to being greeted warmly by WIC staff (see appendix D, Tables 5a and 5b). In-person participants receiving services at an urban location may have been less likely to strongly agree with these statements if urban clinics were busier. These differences in perceptions between urban and rural in-person participants did translate into differences in their satisfaction with their visit as a whole. Urban in-person participants were significantly less likely to say they were very satisfied with their visit as a whole than rural in-person participants (89 percent versus 99 percent, see appendix D, Table 7b).

Participants were also asked their perceptions of how well their needs were met by the WIC services they received. Figure 8-1 presents participant/caregiver perceptions about how well their needs were met, by assessment mode. About 70 percent of participants in both the remote and in-person environments agreed (i.e., agreed or strongly agreed) with the perception that WIC staff asked them about their ideas and beliefs about food, suggesting that this is one aspect of a patient-centered approach that may not be a routine part of nutrition assessments. Another possible explanation for these numbers may be that WIC staff discuss food less the longer a participant is part of the program as counseling shifts away from just "food."

Over 95 percent of participants agreed that the advice and education they received from WIC staff would help them improve their health and diet. Lastly, while a large majority of participants in both the in-person and remote environments agreed that they expect to eat all the food given to them by WIC to purchase, remote participants were significantly more likely to disagree with this statement than in-person participants (9 percent versus 4 percent). There were generally no significant differences between urban and rural participants for these perceptions in either the remote or in-person environments (see appendix D, Tables 6a and 6b). When asked to rate their satisfaction with how well the WIC services they received during their appointment reflected their specific needs and concerns, participants consistently rated their satisfaction as very or somewhat satisfied (99 percent for remote participants and 98 percent for in-person participants) with no significant differences based on urbanicity or in-person/remote environments (see appendix D, Tables 7a - c).

Figure 8-1. WIC participant/caregiver perceptions of how well their needs were met, by assessment mode (percentage of interviewed participants)



*Indicates in-person versus remote differences that are significant at $p \leq 0.05$.
Notes: Percentages may not add to 100 due to rounding.
Remote N = 279 and in-person N = 256 for "WIC staff asked me about my ideas and beliefs about food." Remote N = 280 and in-person N = 256 for "The advice and education I received from WIC staff will help me improve my health and diet." Remote N = 280 and in-person N = 256 for "I [and/or my children] expect to eat all the food that WIC gave me to purchase (on my WIC card)."
Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study, Participant interviews. Remote interviews were conducted fall 2021- spring 2022, and in-person interviews were conducted summer and fall 2022. Interview guide questions 24-26. Tabulations are not weighted. See appendix D, Table 6c.

The study team originally intended to leverage multivariate regression to explore the independent associations between nutrition assessment practices employed at sites and participant satisfaction. However, participant responses to survey items assessing their satisfaction were so consistently high that they did not contain sufficient variation to construct a dependent variable. Appendix I contains more detail about the lack of variation in response to participant satisfaction questions.

8.2 Participant Satisfaction With Individual Components of WIC Certification Appointments

The participant interview used Likert scale questions to ask participants about how they would rate their satisfaction with four components of the certification appointment:

- the WIC staff's review of your nutrition status (that is, the questions about diet, health, and home environment);
- the nutrition education and counseling you received;
- the food choices you were given when discussing your food package with WIC staff; and
- the referrals you received to other services (among those who received referrals).

As noted above, responses to satisfaction questions were consistently high. For each of these questions, 94 percent or more of participants in both the remote and in-person environments rated their satisfaction as highly or somewhat satisfied with no significant differences by urban/rural location (see appendix D, Tables 7a - c).

8.2a Nutrition Assessment and Nutrition Education

In most interviews, participants appreciated that the staff were interested in and inquired about the participant's nutrition and health concerns. Participants appreciated that the staff maintained transparency about the data entered into the MIS, and continuously engaged the participant while entering the data. Some participants valued the staff's questions about their health and life because they felt cared for in ways beyond food assistance and nutrition education. Staff consistently seemed to offer a non-judgmental space to the participant to voice their needs, and maintained a personable, positive, and kind demeanor throughout appointments.

> *"[They were] very warm and inviting. [They] made sure to let me speak and give time to answer and voice any concerns that I had in between. It wasn't a rush conversation. Sometimes you go to places, and they want you to hurry up and get through the appointment without really caring about the patient. So, I thought [they] did a great job." – WIC participant*

In addition to the welcoming environment fostered by staff during the appointment, participants appreciated how the nutrition education was tailored to their needs and that most of their nutrition questions were answered. Participants reported that staff provided helpful guidance on serving sizes for children, the importance of reducing juice intake, and increasing consumption of whole grains, fruits, and vegetables. Participants also noted that staff listed dietary sources for iron and protein, suggested recipes to view on the WIC app, shared helpful pamphlets, delineated height and weight benchmarks, offered strategies to reduce blood pressure before birth, and explained best practices for breastfeeding. A few participants mentioned that they liked that the staff offered guidance but didn't coerce or command the participant to change their behavior and consumption patterns. Some participants also valued instances where staff openly prepared them for changes to their benefits.

> *"[The CPA] was really open and let me know everything that was going to be going on as far [as] the package [and] how it would be changing. [They] went ahead and let me know that so I wasn't in the dark and wondering why everything changed" – WIC participant*

However, a handful of participants did not have entirely positive experiences during the nutrition assessment and nutrition education stages of their appointment. A few participants felt rushed or judged by the clinic's staff, and some wished that the staff elaborated on their family's nutrition needs by inquiring further about their dietary preferences. A few pregnant and postpartum participants said they would have liked to learn more about what foods should be avoided during pregnancy and while breastfeeding. Participants in both the in-person and remote environments wished that the staff spent more time discussing their child's needs and modifying the food package accordingly. A few participants whose native language was not English felt that they could have gleaned more from their appointment if the CPA had spoken their language.

Remote versus in-person appointments. Participants observed in the remote environment felt that the virtual nutrition assessment was of the same quality as an in-person assessment because WIC staff appeared attentive, answered their questions, offered them choices in the food package, and clearly explained how to use the benefits in the WIC food package. Among observed remote appointments, participants noted having a personal connection to CPAs and felt as though the staff knew the participants. Some appreciated that they received the same types of nutrition education materials in the mail after remote visits as they had when they came to the clinic in person.

Participants in the remote environment had minimal negative feedback about their appointments. A handful of participants noted that measuring height and weight was easier and more precise in-person, and some noted that nutrition education involving pamphlets and diagrams was easier to comprehend in person. A few participants felt that staff in remote visits were impersonal and didn't make them feel heard.

> *"Sometimes it seems more personal and sometimes it seems more autopiloted. They are so used to asking the same questions and saying the same things and not really hearing your answers." – WIC participant*

Additionally, a few participants cited technological challenges, such as poor cell phone service and insufficient phone battery power that sometimes hindered an effective nutrition assessment.

8.2b Food Package

Most interviewed participants in both the in-person and remote environments were satisfied with the food choices they received as part of the WIC food package. Notably, participants shared that they were most satisfied with the fruits and vegetables, milk, eggs, beans, cheese, and yogurt. Some participants indicated that they found the food package mostly suited the needs of their family, and they appreciated that the options were both appetizing and healthy. Participants found it helpful to use a WIC app to check the benefits of their food package, and some liked that they could shop at farmers markets for produce. A handful of participants enjoyed the dairy and protein alternatives offered, namely the tofu and soy milk options. Several participants were relieved that WIC covered the cost of healthy foods, and several were particularly grateful for the increase to the CVB.

Food package challenges. However, many participants in both the remote and in-person environments wanted additional modifications to the food package, indicating that their preferences were not always reflected in the package and that staff did not spend enough time explaining their food options. Several requested the option to purchase organic produce and additional substitutions for dairy products, including almond milk or nondairy yogurt, to better suit the needs of those with lactose intolerance.[29] Some participants also noted that their family did not enjoy eating whole wheat bread and 1% milk, and that they would rather have white bread and whole milk. A few participants noted that juice was too sugary, and they would rather substitute juice for more milk, fruits, or vegetables. One participant believed that choice restrictions in the food package contributed to wasted food and money.

Some also reported that they did not have enough funds for the allotted produce items to last a month and requested additional funds for fruits and vegetables. Participants also suggested including more canned foods in the WIC food package, given that canned foods do not spoil as quickly as other perishable items and could sustain a family until the next month. Several participants also expressed frustration over how long it takes to shop for WIC-authorized foods at the grocery store, particularly because products vary from store to store. They noted that WIC-authorized foods were not labeled clearly at grocery stores, resulting in unredeemed benefits when adequate nutrition is most necessary.

> *"Those food choices should be more clear. It says 10 ounces of legumes and stuff like that. And that's been our trouble. I know when we go to the grocery store, it's not always clear what you can and cannot do … I feel like I lost a lot out of that during my pregnancy, just because I wasn't always sure of how much." – WIC participant*

[29] Non-dairy milks, other than soy milk, are purposefully not included in the WIC food package. While soy milks are fortified to provide a nutritional profile similar to diary, rice, almond, oat and other non-dairy milks are not. Many contain extra sugar and are deficient in protein.

8.2c Referrals

Less than half (39 percent) of interview participants received a referral during their certification appointment (calculated from appendix D, Table 7c). Most participants liked it when staff printed the referrals for them on a piece of paper and fielded questions about support services. Participants observed in both the in-person and remote environments favored referrals to low-cost dentists, home visitation programs for mothers and infants, family income support programs, food pantries, and breastfeeding peer counselors, with one participant expressing relief when they were offered a referral:

> *"Well, I would say I like that I am actually getting places referred to me where I can actually get help, and [referrals] just give me a … better understanding since I'm a first-time mom so it actually relieves me very much." – WIC participant*

Participants receiving in-person services appreciated that the peer counselor demonstrated methods to use a manual pump and latching strategies while breastfeeding, with one participant noting that their clinic's lactation program greatly benefited them after their first child's birth. One participant reported that the staff's referral to fit a car seat prior to their baby's birth was very helpful, and another felt similarly about referrals to obtain diapers. When providing referrals, staff accounted for the participants' comfort levels. One participant described how the staff did not pressure them to follow-up on a referral to a dentist.

> *"For instance…when [they] asked about [have they] seen a dentist, and I said no, and [they] said--, [they] educated me on when they should see a dentist, and then gave me options to visit a dentist. And then kind of gave me control also of being able to take care of that." – WIC participant*

Providing referrals remotely. Participants receiving services remotely valued referrals to free baby crib loaners, dental providers that accepted Medicaid, and family income support programs such as the Supplemental Nutrition Assistance Program (SNAP) and childcare services. They liked that staff immediately connected them to the referral, sometimes via text. Participants in the remote environment were appreciative of referrals because they noted that they were not aware of these services, or they might have otherwise hesitated to reach out for assistance. Similar to participants in the in-person environment, participants in the remote environment liked that WIC staff accounted for their comfort levels regarding a referral. In one clinic, the staff assessed the participant's interest in initiating or continuing breastfeeding and provided minimal education. If the woman was interested in or had begun breastfeeding, a referral was provided to the WIC breastfeeding counselor.

8.2d Clinic Flow

Most participants in the in-person environment were satisfied with their clinic's flow, noting that they did not have to wait too long before their appointment and that the waiting room contained toys and a TV that engaged children. They appreciated that the waiting room was not crowded, and that they were reminded of their appointment either via call or text a few days prior to their appointment. They liked flexibility with appointment scheduling; staff in some clinics were able to attend to participants who walked in or called for an appointment on short notice.

However, some participants had less positive experiences with their clinic waiting rooms. In-person interviews with dissenting evidence indicated that some participants wished for more toys for kids and more space for families in the waiting room, especially given the risk of COVID-19 exposure. Others wished for signs clearly designating the check-in area upon entering the clinic, and a few expressed frustrations about having to shuffle from room to room with children during different stages of their appointment. Participants wished for text or call reminders of their appointment, as well as the option to fill out the intake questionnaire prior to their appointment. Some also requested shorter wait times and additional receptionists and assistants to direct participants upon check-in.

Remote appointments. Participants who received services remotely liked the convenience and efficiency of remote services. They liked no longer having to manage their children in the WIC office, not having to take time off from work to attend an appointment, and not needing to expend gas on the drive to and from the clinic. They appreciated not having to risk exposure to COVID-19 by having to attend their appointment in person, and they liked not having to wait before an appointment when receiving remote services.

Some participants in the remote data collection group expressed concerns about scheduling their WIC appointments. In one clinic, participants indicated challenges with blocking out time for their appointment because they were notified of the day the CPA would call but were not provided a specific time. Participants stated that, as a result of not knowing when to expect the call, they may have missed the call or been in an inappropriate location to take the call. To remedy this, a few participants suggested that the phone visit be scheduled by WIC at a certain time or for a time range of a few hours.

9. Promising Practices

Promising practices are activities, procedures, approaches, or policies that may lead to improved outcomes or increased efficiency. The study team investigated potential promising practices in two ways: qualitative analysis of site director and staff interviews and regression analyses that examine visit time from various perspectives including burden on participants, burden on staff, and efficiency of staff.

For the qualitative analysis, the study team reviewed responses to the following two questions:

1. From the site director interview: What are you most proud of about how the nutrition services process works at your clinic?

2. From the staff interview: When it comes to conducting the nutrition risk assessment and other nutrition services, what do you think this WIC clinic does really well that other clinics could learn from?

Multivariate regression was used to examine whether selected nutrition service processes were associated with increased participant or staff satisfaction, reduced participant or staff burden, increased clinic efficiency, and improved clinic flow. As noted in an earlier chapter, participant satisfaction with WIC services was so consistently high that multivariate regression work was not feasible using participant satisfaction variables as a dependent variable. Additionally, there were insufficient cases across the distribution of responses assessing staff perceptions of clinic flow to directly examine clinic flow using multivariate regression. Appendix I offers additional information on these findings. This chapter presents results of four regression analyses in sections 9.2. through 9.5. While we present the results of these regressions, we will note up-front that they were not successful in identifying promising practices.

9.1 Potential Promising Practices From Site Director and Staff Interviews

When discussing what their WIC clinics do well, staff and site directors have focused on three important things across both in-person and remote environments—working as a team, being flexible, and treating people well. These attributes represent a real commitment to the VENA principles inherent in a participant-centered approach to service delivery. Those interviewed described the attributes that make their clinics really stand out in the following ways:

- **Clinic staff working as a team.** Working as a team means that members of the clinic staff share the work burden and help in whatever ways they can to meet participant needs. One clinic described how the clinic's CPAs rotate who takes the first appointment each week. Working as a team means that all team members have to know the role and expertise of all, so that when everyone is fielding calls or greeting participants, they know who is needed to address the issue at hand. A lot of communication among staff is needed to help participants flow through the clinic and to ensure no one staff member becomes overburdened. Good teamwork raises staff satisfaction and staff retention, which also benefits participants.

- **Flexibility in scheduling appointments.** Participants need flexibility in scheduling appointments. One clinic noted that they take a lot of walk-ins. While some clinics might schedule someone who walks in and asks for an appointment, this clinic works to take as many walk-ins as they can in order to get the participant's benefits started as soon as possible. It is a strategy that participants can really appreciate. Another clinic noted that they allow flex time for staff if they stay after clinic hours to accommodate working participants who could not make an appointment during regular hours.

- **Treat participants well.** Treating people well is central to what WIC clinics do, and those interviewed know it is often something that sets them apart from other offices where their participants go for services or even other WIC clinics. Interviewed staff know that this is what sets them apart because participants have told them so. Staff are friendly, treat their participants as equals and with respect, and genuinely care for their participants' well-being (which makes them very helpful). These traits allow them to build relationships with participants and retain them over time.

Other practices that interviewed staff and site directors mentioned as practices that make their clinics stand out, include:

- **Having a number of interpreters available.** At one clinic, participants can directly call an interpreter to set up an appointment.

- **Use technology as much as possible.** One clinic noted that they do video appointments, text reminders, and virtual meeting classes.

- **Breastfeeding outreach.** One clinic texts new moms on days 1, 3, 5, 7, 10 14, 17, 21, and 28. After the first month, they continue to text breastfeeding moms weekly. Another clinic does monthly breastfeeding outreach to pregnant women.

- **Email follow-up after an appointment.** One clinic noted they email all sorts of materials to participants after an appointment. It is not only a good way to disseminate information, but it gives the WIC staff a way to stay connected and gives participants the staff's email address, which allows them to easily reach out to staff with questions. The clinic noted, "A lot of clients will reach out months after their certification appointment because they have our email address now."

- **Building community partnerships.** A clinic noted that they have good partnerships with community partners. That helps to get their services out to new groups. This site also noted they were quite adept at social media and had a relatively large following considering who they are.
- **Creating an inclusive open dialogue with participants.** A clinic noted that their staff were good at asking open-ended questions, and they rarely have participants who do not open up and communicate their needs to staff.

9.2 Practices Associated With Participant Burden

The intent of this regression was to examine whether selected nutrition service practices were associated with participant burden. Three practices were identified for assessment through review of participant and staff interview data: (1) whether participants are asked to complete form(s) prior to appointment, (2) the number of different types of WIC staff that perform the nutrition assessment, and (3) whether the MIS facilitates tailoring. Data on whether the MIS facilitates tailoring were obtained from the Local Agency Director Survey.

9.2a Minimizing Participant Burden

To assess participant burden, the study team calculated total minutes associated with each visit and used ordinary least squares (OLS) regression to identify factors independently associated with total visit time. Promising practices were expected to reduce total visit time. Table 9-1 presents results of the regression model used to assess factors independently associated with total visit time.

The model did not identify an association between total visit time and two of the promising practices explored. However, the model did identify a positive association between visit time and the third promising practice: whether the MIS facilitates food package tailoring. Participants at sites using an MIS that facilitates food package tailoring had longer visits than participants at sites that did not use an MIS that facilitates food package tailoring.[30] It may be that an MIS that assists with food package tailoring requires additional data that takes time to input or otherwise introduce potential technical difficulties. More complex systems may, therefore, be increasing total visit time. Data on whether the MIS facilitates tailoring were obtained from the Local Agency Director Survey. However, in interviews, staff generally reported that their MIS did not facilitate food package tailoring; rather, most systems simply provided, through drop-downs and additional screens, ways to document the tailoring decisions made by staff in conjunction with

[30] Of note, additional bivariate analyses did not find a significant association at $p<0.05$ between receiving a tailored food package and whether the site had an MIS that tailors the food package to any degree.

participants. It is possible that this ability to document food package tailoring was viewed by respondents to the survey as facilitating tailoring, but it is hard to reconcile these two views with certainty.

The model identified additional factors independently positively associated with total visit time, which included having a high-risk "other" nutritional risk code, the total number of nutritional risk codes identified, whether the session was an in-person session, and whether the session involved more than one WIC participant. Each of these increased the total time of the visit for the participant.

Additional factors independently negatively associated with total visit time included the participant having prior history with WIC, the clinic being part of a nonprofit organization compared to a county health department, and the visit involving a recertification compared to an initial certification. Each of these reduced total visit time on average.

Table 9-1. Adjusted† coefficient estimates and confidence intervals from ordinary least squares (OLS) regression examining factors affecting total time (minutes) in WIC sessions

Independent variable	Coefficient	Confidence interval
Anthropometric risk codes: reference category no Anthropometric risk codes		
At least one risk code	1.289	-2.161 – 4.738
At least one high-risk code	2.603	-2.350 – 7.555
Biochemical risk codes: reference category no Biochemical risk codes		
At least one risk code	3.147	-1.946 – 8.239
At least one high-risk code	3.087	-13.241 – 19.416
Clinical Health Medical risk codes: reference category no Clinical Health Medical risk codes		
At least one risk code	2.903	-0.723 – 6.529
At least one high-risk code	2.646	-2.101 – 7.394
Dietary risk codes: reference category no Dietary risk codes		
At least one risk code	1.931	-1.408 – 5.270
At least one high-risk code	2.790	-6.438 – 12.018
Other nutritional risk codes: reference category no Other nutritional risk codes		
At least one risk code	0.576	-3.450 – 4.601
At least one high-risk code	14.072*	6.719 – 21.426
Race/Ethnicity of the participant: reference category Hispanic		
Non-Hispanic Black	-4.474	-9.091 – 0.142
Non-Hispanic White	-3.361	-7.245 – 0.523
Other	-5.751	-12.070 – 0.567
Session characteristics		
Total number of risk codes identified	1.185*	0.118 – 2.252
Participant is asked to complete form(s) prior to appointment	2.900	-2.845 – 8.645
Number of different types of WIC staff that perform the nutrition risk assessment	1.915	-0.786 – 4.616
Session held in person (not remotely)	10.112*	7.017 – 13.207

Table 9-1. Adjusted† coefficient estimates and confidence intervals from ordinary least squares (OLS) regression examining factors affecting total time (minutes) in WIC sessions (continued)

Independent variable	Coefficient	Confidence interval
WIC session had more than one participant	6.272*	2.526 – 10.019
Participant was previously enrolled in WIC	-3.938*	-7.325 – -0.552
Staff had received cultural training	1.159	-3.135 – 5.453
Management information system (MIS) food package tailoring: reference category MIS does not help tailor food package		
MIS automatically tailors food package	7.783*	3.239 – 12.327
MIS suggests food package; WIC staff confirm	8.127*	2.595 – 13.659
Type of WIC staff conducting assessment: reference category Nutritionist		
Health educator	1.755	-4.993 – 8.504
Nurse	-2.073	-8.373 – 4.228
Other	0.498	-4.478 – 5.474
Support staff	-4.169	-12.232 – 3.895
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years' experience	1.369	-2.590 – 5.327
0 - 2 years' experience	3.923	-0.582 – 8.429
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	1.158	-6.943 – 9.259
Medium urban	-5.177	-11.825 – 1.470
Large urban	-3.967	-12.544 – 4.611
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	-6.444	-14.379 – 1.491
Nonprofit organization	-11.061*	-17.335 – -4.787
Local government, non-health department	1.734	-13.031 – 16.499
Reason for WIC session: reference category Initial WIC enrollment		
Both initial enrollment and recertification	-7.335*	-12.063 – -2.606
WIC recertification	-4.057*	-7.663 – -0.451

† State agency was included as a categorical predictor variable to control for variation by State, though the coefficient estimates are not shown.

* Statistically significant at the 95 percent confidence level.

Notes: After accounting for missing variables, the sample size was 427 observations. The adjusted R-squared value for model fit was 0.46.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

9.2b Minimizing Staff Burden and Increasing Satisfaction

The promising practices for increasing staff satisfaction in the nutrition services process were explored in section 7.3a. Having participants complete forms prior to their appointments was inversely associated with staff satisfaction.

In this discussion, attention focuses on whether promising practices minimize staff burden. We interpret staff burden in this context as the average number of minutes a staff member spends conducting a WIC appointment based on total participant time. (That is, we created this variable for each staff member by adding the total visit time across their visit observations.) Because there are many factors that may influence the time staff spend with participants, the analysis employed multivariate regression to assess independent associations.

The regression explored the hypothesis that promising practices reduce staff burden. This hypothesis indicated each selected practice would reduce the average time spent by contributing to a streamlined and thorough nutritional assessment. The previous regression (Table 9-1) examined whether promising practices are independently associated with participant burden; this regression (Table 9-2) investigates whether promising practices reduce staff burden.

The dependent variable in this regression (Table 9-2) reflects the average number of minutes WIC appointments take for each staff member. The sample size for the regression is the number of staff conducting nutritional assessments and completing a staff interview. Bivariate analysis facilitated identifying additional independent variables that may be associated with staff burden. The factors selected included using local agency policies and procedures in addition to State agency ones, staff experience, clinic characteristics (urbanicity/size and type of clinic), and State agency.[31] The study team hypothesized that promising practices would reduce average staff time. The regression results are shown in Table 9-2.

The model identified a single statistically significant independent association between the practices assessed and staff burden. Having an MIS that suggests or automatically tailors the food package increased staff burden. This is inconsistent with the hypothesis of time saving and may reflect the staff's assessment that these systems do not actually facilitate food package tailoring.

Additional significant factors included whether the assessment was conducted in person and whether the appointments took place at a health center/clinic. In-person assessments were more burdensome (i.e., took more staff time than remote sessions on average). This finding was expected, as remote appointments do not include the waiting time that in-person ones do. All else equal in the model, appointments at health centers/clinics took less staff time compared with those conducted in a county health department.

[31] Model results for State agency are not reported. It improved model fit but may explain variation that is, in part, beyond control of FNS or WIC staff.

Table 9-2. Adjusted† coefficient estimates and confidence intervals from ordinary least squares (OLS) regression examining factors affecting average time (minutes) staff spend per WIC session

Independent variable	Coefficient	Confidence interval
Local agency/clinic characteristics		
Local agency has policy and procedure protocols for the WIC clinics in addition to State policy	-7.079	-14.970 – 0.813
Participant is asked to complete form(s) prior to appointment	4.680	-4.433 – 13.793
Participants served by local agency use a language other than English as their primary language	3.861	-5.999 – 13.720
Number of different types of WIC staff that perform the nutrition risk assessment	3.034	-1.235 – 7.302
WIC staff conducted in-person (not remote) sessions	17.942*	13.320 – 22.564
Management information system (MIS) food package tailoring: reference category MIS does not help tailor food package		
MIS automatically tailors food package	7.808*	1.301 – 14.315
MIS suggests food package; WIC staff confirm	9.775*	1.103 – 18.447
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years' experience	0.537	-4.944 – 6.018
0 - 2 years' experience	1.794	-4.367 – 7.954
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	-6.772	-19.621 – 6.077
Medium urban	-8.341	-19.976 – 3.293
Large urban	-13.210	-26.728 – 0.307
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	-16.032*	-28.763 – -3.302
Nonprofit organization	-7.792	-17.112 – 1.528

† State agency was included as a categorical predictor variable to control for variation by State, though the coefficient estimates are not shown.

*Statistically significant at the 95 percent confidence level.

Notes: After accounting for missing variables, the sample size was 143 observations. The adjusted R-squared value for model fit was 0.41. Two cases with clinic type of "Local government, non-health department" were excluded from the model due to low sample size.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

9.3 Practices Associated With Efficient Service Delivery

Analyses discussed in section 9.1 included examination of the independent association between promising practices and total staff time. That work included overall time for the appointment, some of which the participant spends waiting. This section delves into efficiency, which the study team interpreted as the percentage of total face-to-face time with participants.

Subsequently, the study team examined clinic flow using total staff time; however, this analysis was limited to in-person visits, so the sample size is relatively small.

The dependent variable for the regression analysis was constructed as the percentage of total visit time that is not spent waiting. Total session time and total waiting time were calculated for each visit and averaged across staff. Efficiency was calculated as the percentage of total visit time spent with participants as opposed to time the participant spent waiting. The hypothesis was that promising practices would increase efficiency by decreasing the time that participants spent waiting. Thus, the expectation was that the promising practices assessed would be independently positively associated with efficiency. Model results are presented in Table 9-3.

Having a greater variety of types of WIC staff perform nutrition assessments reduced efficiency, as did having an MIS that automatically tailors the food package (although it is unclear given staff interviews what help these systems are actually providing). Both of these increased participants' waiting time. These findings are inconsistent with the hypothesis that these practices would increase staff efficiency by reducing participant waiting time. Additional factors independently associated with reduced staff efficiency included having staff with more years of experience at the clinic and working in a clinic that is not small. The one factor independently associated with increased staff efficiency was the type of clinic. Relative to staff in a county health department clinic, staff in a health center/clinic were more efficient given the model specified.

Table 9-3. Adjusted† coefficient estimates and confidence intervals from ordinary least squares (OLS) regression examining factors affecting in-person staff efficiency (percentage of total session time participant did not spend waiting)

Independent variable	Coefficient	Confidence interval
Local agency/clinic characteristics		
Participant is asked to complete form(s) prior to appointment	0.373	-0.010 – 0.756
Participants served by local agency use a language other than English as their primary language	0.080	-0.120 – 0.281
Number of different types of WIC staff that perform the nutrition risk assessment	-0.118*	-0.197 – -0.040
Management information system (MIS) food package tailoring: reference category MIS does not help tailor food package		
MIS automatically tailors food package	-0.105*	-0.207 – -0.004
MIS suggests food package; WIC staff confirm	-0.071	-0.207 – 0.064
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years' experience	-0.096*	-0.177 – -0.014
0 - 2 years' experience	-0.079	-0.173 – 0.015
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	-0.679*	-1.229 – -0.129
Medium urban	-0.571	-1.147 – 0.005
Large urban	-0.595*	-1.177 – -0.013

Table 9-3. Adjusted† coefficient estimates and confidence intervals from ordinary least squares (OLS) regression examining factors affecting in-person staff efficiency (percentage of total session time participant did not spend waiting) (continued)

Independent Variable	Coefficient	Confidence Interval
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	0.284*	0.096 – 0.472
Nonprofit organization	0.211	-0.024 – 0.447

†State agency was included as a categorical predictor variable to control for variation by State, though the coefficient estimates are not shown.

*Statistically significant at the 95 percent confidence level.

Notes: After accounting for missing variables, the sample size was 76 observations. The adjusted R-squared value for model fit was 0.48. Two cases with clinic type of "Local government, non-health department" were excluded from the model due to low sample size.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

Several of the findings around staff efficiency were unexpected given the hypothesis that promising practices would increase staff efficiency (i.e., increase face-to-face time with participants).

9.3a Clinic Flow

The regression analysis also assessed the association between clinic flow and three promising practices. The hypothesis was that implementing these practices would help a WIC clinic operate more efficiently, improving clinic flow and increasing time savings.

Initially, the study team sought to use staff responses to a survey item assessing perceptions of clinic flow; however, there was insufficient variation in survey response to the item for regression analysis. Appendix I offers additional details on this effort. Instead, a dependent variable measuring total waiting time for each WIC appointment was constructed. For the dependent variable, average participant wait time associated with each staff member who performed observed in-person appointments was created. This measure of clinic flow reflects the association between layout and participant wait times. The hypothesis was that average participant wait time would be lower with better clinic flow. In other words, there would be significant negative coefficients on the promising practices.

The model results are shown in Table 9-4. The sample size is low because waiting time is only relevant for in-person observations. Consequently, the final sample represents only staff who conducted observed in-person appointments. However, the adjusted-R-squared value of model fit is quite high considering the low sample size, suggesting decent predictive power.

Statistically significant independent associations with positive coefficients were found between in-person staff average minutes of waiting time per WIC session: each additional type of staff the clinic typically used to perform a nutrition assessment increased wait time by an estimated 5 minutes, and MIS suggesting the tailoring of a food package with the WIC staff member confirming it (relative to not having an MIS tailor a food package) increased wait time by an estimated 9 minutes, holding constant all other factors. The number of different types of WIC staff that perform the nutrition assessment finding was contrary to the hypothesized direction, which assumed that having more types of staff that can conduct a nutrition assessment would allow for a more even spread of the workload. However, having more types of staff be responsible for nutrition assessments may actually be inefficient if staff have to constantly switch gears from one type of activity to the next. The MIS finding was also contrary to the hypothesized direction and may reflect the additional time necessary to confirm MIS suggestions. Meanwhile, if the WIC clinic was of the type "Health center/clinic," the estimated wait time was 13 minutes less, relative to WIC clinics of type "Local/County Health Department."

Table 9-4. Adjusted† coefficient estimates and confidence intervals from ordinary least squares (OLS) regression examining factors affecting average minutes of participant waiting time per WIC session by in-person staff

Independent variable	Coefficient	Confidence interval
Local agency/clinic characteristics		
Participant is asked to complete form(s) prior to appointment	-12.085	-33.203 – 9.034
Participants served by local agency use a language other than English as their primary language	1.419	-9.631 – 12.469
Number of different types of WIC staff that perform the nutrition risk assessment	5.342*	1.018 – 9.665
Management information system (MIS) food package tailoring: reference category MIS does not help tailor food package		
MIS automatically tailors food package	4.595	-0.990 – 10.181
MIS suggests food package; WIC staff confirm	8.929*	1.444 – 16.415
Staff experience conducting nutrition assessments at WIC clinic: reference category 2 - 4 years		
5+ years' experience	3.951	-0.560 – 8.461
0 - 2 years' experience	4.385	-0.802 – 9.573
Size/urbanicity of WIC clinic: reference category Small		
Medium rural	14.673	-15.649 – 44.996
Medium urban	9.434	-22.305 – 41.172
Large urban	9.557	-22.515 – 41.628
Type of WIC clinic: reference category Local/County Health Department		
Health center/clinic	-13.682*	-24.056 – -3.308
Nonprofit organization	-5.731	-18.717 – 7.254

† State agency was included as a categorical predictor variable to control for variation by State, though the coefficient estimates are not shown.

* Statistically significant at the 95 percent confidence level.

Notes: After accounting for missing variables, the sample size was 76 observations. The adjusted R-squared value for model fit was 0.42. Two cases with clinic type of "Local government, non-health department" were excluded from the model due to low sample size.

Source: U.S. Department of Agriculture, Food and Nutrition Service, WIC Nutrition Assessment and Tailoring Study. Remote data collected fall 2021- spring 2022, and in-person data collected summer and fall 2022. Tabulations are not weighted.

10. Summary of Remote Versus In-Person Findings

Findings related to differences between the remote and in-person environments were discussed throughout this report but are summarized here to provide a full description of differences in one place. Note that remote WIC certification appointments were conducted primarily by phone. One local agency also used text messages upon participant request, and four local agencies (located within the same State) used curbside appointments, where participants came to the clinic parking lot, talked to staff by phone to conduct the assessment, and had their EBT cards refilled. In some local agencies, staff were able to work from home, while in others, staff worked from the clinic but conducted appointments via phone with participants.

10.1 The Assessment

The nutrition assessment was conducted in a similar manner in both remote and in-person appointments. Staff used the MIS to guide the assessment, which ensured that they asked the same questions regardless of the mode of the appointment. The overall processes for determining and documenting risk criteria, prioritizing risks, clarifying information, and determining high-risk status did not vary greatly between remote and in-person appointments. Though staff asked similar questions in remote appointments, they typically were not able to collect all the required anthropometric and blood-work information from participants.[32] The availability of height/weight measurements and hemoglobin/hematocrit test results varied significantly between in-person and remote appointments. For the majority of in-person appointments, height and weight measurements and blood tests were obtained by WIC staff on the day of the visit (87 percent and 66 percent, respectively). In contrast, for most observed remote appointments, height and weight measurements were either self-reported by the participant (48 percent) or not available (36 percent), and blood tests were typically not available at the time of the visit (87 percent). Though staff often did not have reliable access to anthropometric and bloodwork data for remote appointments, staff noted that they still discussed health and medical information with the participant by either (1) discussing the self-reported data provided by the participant; or (2) asking more general questions about whether the participant or caregiver was concerned about their or their child's health.

Interviewed staff noted some unique challenges associated with remote appointments. Some staff noted that participants were more distracted during remote appointments, and it was more difficult to establish rapport. In particular, one staff member noted that it was more difficult

[32] The physical presence waiver enabled local agencies to defer certain anthropometric (i.e., height/length and weight) and bloodwork requirements used to determine nutritional risk.

to ask sensitive questions about domestic violence or food insecurity because of the challenges establishing rapport in the remote environment. Staff also missed the ability to see participants and visually assess their well-being. Lastly, missing anthropometric and bloodwork data was a challenge, and staff often felt they were not able to conduct a complete nutrition assessment in the remote environment because they lacked this information. One staff member suggested that FNS should help facilitate partnerships or data sharing agreements with healthcare providers so that WIC clinics can have access to anthropometric and bloodwork data but still provide participants and caregivers the flexibility of remote appointments.

Total appointment time. Remote appointments were substantially shorter in duration than in-person appointments. The average length of an appointment was shorter for remote appointments than in-person appointments by almost 15 minutes (average time of 24.8 minutes for remote and 39.7 minutes for in-person). Remote appointments often included fewer activities conducted (most notably the lack of anthropometric measurements and bloodwork taken during remote appointments) than in-person appointments, which contributed to shorter appointments. Another issue for remote appointments that likely contributed to shorter appointments was that these appointments were sometimes scheduled during a break in the participant/caregiver's workday. Coming to the clinic to be certified requires participants to set more time aside for the appointment, allowing for longer appointments.

Almost half of remote appointments (47 percent) included just three activities—a nutrition assessment, nutrition education, and the food package prescription. In-person appointments generally included more activities than remote appointments with 30 percent of in-person appointments including all six appointment activities—assessment, education, food package prescription, referrals, anthropometric measurements, and lab measurements (i.e., blood work).

VENA operationalization. In both the remote and in-person environments almost every participant reported experiences that align with the participant-centered approach promoted by VENA principles. Whether their appointment was conducted in person or by phone, participants agreed that WIC staff greeted them warmly, made them feel at ease, listened to their needs and concerns, and explained things clearly in a way they could understand. Remote service delivery did not negatively impact the ability of WIC staff to provide participant-centered services, at least not in ways that ensured participants feel welcome and listened to.

But there were aspects of VENA guidance that could not be replicated in the remote environment. In particular, rapport-building actions, such as looking directly at the participant or inviting the participant to look at the computer screen during the assessment, were not possible in an assessment conducted over the phone. Providing services in person gave staff more opportunities to use the full array of VENA guidance. VENA was developed long before remote services were considered a possibility for WIC participants and was not designed for remote service provision.

In a few instances, observers noted ways in which WIC services did not align with VENA guidance. In the in-person environment, these comments mostly described two issues—observations in which WIC staff were focused more on the computer screen than the participant and observations in which WIC staff did not ask the participant about their concerns or priorities. In the remote environment, the most common response to the question of how appointments did not align with VENA described sessions as feeling rushed.

10.2 Tailoring Nutrition Services

Tailoring practices were similar for both in-person and remote appointments. An exception is that staff may be less able to tailor weight or growth-related nutrition education when lacking accurate and recent height and weight measurements for remote visits.

There were statistically significant differences between the percentage of staff who reported tailoring their nutrition education approaches between remote and in-person visits; reasons for these differences are unclear but may have been due to the modes of education delivery available in remote versus in-person environments. In-person environments had more options for education delivery including face-to-face counseling and group education sessions. There were also differences in goal-setting practices between remote and in-person visits; while the percentage of observations in which WIC staff helped participants set a behavioral change goal did not differ significantly between the remote and in-person environments, once a goal was set, more staff discussed challenges and how to address them during in-person data collection than remote data collection. These differences may be related to in-person appointments facilitating better connections between staff and participants or to the longer appointment times for in-person appointments, which could have allowed in-person assessments to have a more in-depth discussion of goals.

Mode of service delivery (in-person or remote) was not associated with a greater likelihood of tailored benefits. The variable "session held in person" was not significant in regressions exploring the factors that affect the likelihood of food package, education, and referral tailoring.

10.3 Staff Perceptions and Satisfaction

Staff expressed concerns about the quality of communication when conversing with participants during the provision of remote services. Staff disliked that they were unable to obtain accurate height and weight measurements for appointments conducted via phone and reported that catching delays in child development was more difficult in remote assessments. Some felt that participants did not treat the remote appointment as a real appointment and often multitasked during their appointment or forgot the appointment altogether. One staff member felt that the remote visits were rushed compared to in-person visits, in part because participants were often in a hurry to complete the appointment. Staff also believed that remote services did not foster personal connections with the participants, which stifled potential for rapport and restricted the type of guidance they could offer to participants. Commenting on remote services, staff also described how issues with poor cell phone service in their areas hampered the quality of their counseling, noting that appointments were sometimes interrupted by spotty cell phone service or participants' phones running out of battery power.

About three-quarters of staff in both the in-person and remote environments agreed or strongly agreed that they have all the resources needed to perform a nutrition assessment (74 percent versus 79 percent for remote and in-person environments, respectively) and even larger percentages (90 percent versus 85 percent for remote and in-person environments) agreed that the MIS helps them complete their nutrition assessments. However, interviewed staff did note some resources that would make their jobs easier. Some staff whose clinics were conducting appointments in person wished they had the capacity to conduct virtual appointments via Zoom or FaceTime, particularly for recertification appointments, and staff conducting remote appointments requested headsets and the ability to conduct video calls, instead of just phone calls, with participants. Many staff providing remote services requested printers in their offices so they could distribute pamphlets and brochures to participants via mail.

10.4 Participant Perceptions and Satisfaction

Participants' perceptions of the nutrition assessment process were overwhelmingly positive regardless of mode of delivery. Participants observed in the remote environment felt that the virtual nutrition assessment was of the same quality as an in-person assessment because WIC staff appeared attentive, answered their questions, offered them choices in the food package, and clearly explained how to use the benefits in the WIC food package. Among observed remote appointments, participants noted having a personal connection to CPAs and felt as though the staff knew the participants. Some appreciated that they received the same types of nutrition education materials in the mail after remote visits as they had when they came to the clinic in person.

Participant responses to the satisfaction questions asked as part of the participant interview were consistently high. Over 94 percent of participants in both in-person and remote environments indicated they were satisfied (either highly or somewhat) with the nutrition assessment, nutrition education, food package, and referrals received. Participants in the remote environment had minimal negative feedback about their appointments. A handful of participants noted that measuring height and weight was easier and more precise in person, and some noted that nutrition education involving pamphlets and diagrams was easier to comprehend in person. A few participants felt that staff in remote visits were impersonal and didn't make them feel heard. Additionally, like WIC staff, a few participants cited technological challenges, such as poor cell phone service and insufficient phone battery power that sometimes hindered an effective nutrition assessment.

Participants who received services remotely liked the convenience and efficiency of remote services. They liked no longer having to manage their children in the WIC office, not having to take time off from work to attend an appointment, and not needing to expend gas on the drive to and from the clinic. They appreciated not having to risk exposure to COVID-19 by having to attend their appointment in person, and they liked not having to wait before an appointment when receiving remote services.

However, some participants in the remote data collection expressed concerns about scheduling their WIC appointments. In one clinic, participants indicated challenges with blocking out time for their appointment because they were notified of the day the CPA would call but were not provided a specific time. These participants indicated it was hard for them to arrange to be available any time on the day when the staff member calls. Participants stated that, as a result of not knowing when to expect the call, they may have missed the call or been in an inappropriate location to take the call. To remedy this, a few participants suggested that the phone visit be scheduled by WIC at a certain time or for a time range of a few hours.

11. Discussion

This study is intended to help FNS better understand how WIC local agencies and clinics conduct the nutrition assessment and use the information gathered to tailor benefits they provide to WIC participants. In this report, the study team conducted an analysis of data collected during remote and in-person site visits to WIC clinics, including observations of clinic visits and interviews with site directors, WIC staff, and WIC participants to describe the assessment process and its outcomes. Analysis of the data allowed the study team to draw the conclusions presented in section 11.1. This chapter also describes study limitations and possible future research to further illuminate and expand study findings.

11.1 Conclusions

The study team has drawn the following conclusions from the report findings:

- The nutrition assessment was conducted in a similar manner in both remote and in-person appointments. Staff used the MIS to guide the assessment, which ensured that they asked the same questions, regardless of the mode of the appointment. The overall processes for determining and documenting risk criteria, prioritizing risks, clarifying information, and determining high-risk status did not vary greatly between remote and in-person appointments. However, missing anthropometric and bloodwork data was a challenge in remote appointments as some staff felt they were not able to conduct a complete nutrition assessment because of this. On the other hand, participants in the remote environment had minimal negative feedback about their appointments. They liked the convenience and efficiency of remote services.

- The programmed questionnaire contained in the WIC clinics' MIS served as the backbone for the nutrition assessment in all clinics for both remote and in-person certifications. The questions in the MIS served as a guide for the discussion with the participant or caregiver and ensured that the WIC staff touched on all topic areas and considered all allowable risk criteria. Staff must be careful, however, to ensure reliance on the MIS question list does not result in assessments where WIC staff are more focused on the computer screen than the participant or where the conversation becomes just a depersonalized list of questions.

- Clinics infrequently receive medical information from healthcare providers. More interaction between WIC staff and healthcare providers could benefit participants.

- While about 70 percent of participants in both the remote and in-person environments agreed with the statement that WIC staff asked them about their ideas and beliefs about food, the study's observation data found that discussion of ideas and beliefs about food occurred in less than 10% of observed appointments. This conflicting data may show the extent to which WIC participants did not want to say anything in their interviews that they thought could be perceived as negative toward WIC staff. Observers, however, determined that WIC staff rarely explored participants' ideas and beliefs about food. A lack of questions related to these issues in the programmed MIS questionnaire may be why this issue is not routinely explored by WIC staff.

- Staff are careful not to overwhelm participants with too much information. While staff often appear to have lots of options for topics to discuss, they are aware that too much information can be off-putting or may make a participant feel they are doing something wrong.

- Staff had contrasting viewpoints as to how much tailoring is possible within the food package. Only 61 percent of staff in the in-person environment agreed with the statement that the nutrition assessment results in an appropriately tailored food benefit package. Twenty percent were undecided, and another 20 percent disagreed with the statement. It may be that regardless of how the nutrition assessment process is conducted, some staff believe it will not result in an appropriately tailored food package for some participants due to restricted options for food package tailoring.

- Nutrition education is tailored to participants' needs in many ways. The most common way that staff tailored nutrition education was by varying the topics discussed according to the individual's interests, concerns, and identified nutrition risks. Staff also varied the counseling methods they used when providing nutrition education based on a participant's level of interest, comprehension, or experience.

- Participants often do not express any needs or concerns to WIC staff. As a consequence, WIC staff more often use their own judgment to identify topics for nutrition education rather than choosing topics in discussion with caregivers and participants. This also results in a lack of participant input in goal setting.

- The MIS generally does not facilitate tailoring but is used primarily to document the tailoring that occurred. The only way in which the MIS did facilitate tailoring was for certain kinds of referrals where it may automatically suggest referrals associated with certain identified risks.

- VENA guidance's participant-centered approach is imbedded in how WIC staff conduct assessments. As a result, participants overwhelmingly reported good experiences at study sites.

- Clinics want to be flexible in scheduling, allowing same-day appointments and service for walk-ins, which participants need and prefer, but walk-in appointments can negatively impact clinic flow and make the workday harder for staff.

- For staff who felt they did not have the resources they need to conduct nutrition assessments and tailor benefits appropriately, their primary suggestions for needed resources included a range of technology upgrades most commonly including sending text-based or email-based appointment reminders to participants.

- Participants are satisfied with the services they receive from WIC clinics across the board. They found remote service delivery to be the same quality as in-person delivery but, like staff, want additional options for modifying the food package.
- Across the study, when findings were less positive, they appear to be related to time available for interactions between WIC staff and participants, limited cultural adaptation of the nutrition assessment, and the inflexibility of the WIC food package.

11.2 Study Limitations

An important limitation of this study is that the study design relies on the selection of a nonprobability sample. The goal of the study design is to ensure the selection of a diverse set of State agencies, local agencies, and clinics in order to capture as much variation in the nutrition assessment and benefits tailoring process as possible. Due to the nonprobability nature of the sample, the study findings are not nationally representative (data are not weighted) and apply only to participating State agencies, local agencies, and WIC clinics. Still, the findings provide valuable insight into the diversity of ways clinics conduct WIC nutrition assessment and benefit tailoring.

The research protocol assumed observers would be able to record separate times for individual activities. However, observers discovered that appointments were generally not conducted in a manner that allowed for times to be recorded by activity. In most cases, activities such as education and counseling, referrals, and the food package prescription were conducted in the same session as the assessment. As a consequence, there were limited data available on the time it took to conduct the various components of the assessment process and the analysis was unable to answer research questions asking how long it took WIC staff to conduct specific activities such as the assessment, nutrition education, and referrals. Further, there was a VENA indicator (inviting participants to look at the computer screen) that was based on the WIC NATS expert panel members thoughts of a good indicator of VENA and not explicitly based on VENA guidance. Since the VENA guidance does not explicitly mention this as an application of VENA and given that in nutrition assessments there may not be the weight and height information collected for WIC staff to show WIC participants on their screen, these are reasons that may have resulted in the low levels of observation of this practice that impacted both the observations of this practice and the VENA composite measure scores.

Following each observed appointment for both remote and in-person data collection, staff were asked if the food package prescription was tailored for one or more of the participants certified during the appointment. The study team did not provide WIC staff with a definition of tailoring, and staff had differing views of what constitutes tailoring the food package. Some staff considered adjusting the ratio of milk, yogurt, and cheese based on participant preferences to be tailoring, while others did not consider this to be a tailored modification since it is allowed within the standard food package. These different ideas of what constitutes tailoring of the food package undoubtedly influenced both the qualitative and quantitative data collected on food package tailoring.

11.3 Future Research

The findings described in this report have suggested two possible avenues for future research. Both are focused on aspects of the assessment and benefit tailoring that may be under-utilized and could be further developed to improve WIC service delivery. These avenues for future research are:

- Data collectors did not often observe WIC staff exploring participants' cultural behaviors and beliefs about food during the nutrition assessment. Exploring a participant's cultural behaviors and beliefs was observed in just 9 percent of remote appointments and 4 percent of in-person appointments. In interviews, staff noted that they did not have questions in their risk assessment process that explicitly asked about cultural food preferences, but this information would come up through the assessment questions about food consumption and other health-related behaviors. In participant interviews, 71 percent of participants agreed or strongly agreed with the statement that "WIC staff asked me about my ideas and beliefs about food," which suggests this is one aspect of a patient-centered approach that may not be a routine part of nutrition assessments. A possible reason for this is that WIC staff may be asking about ideas and beliefs about food only with participants of minority groups or recent immigrants, while in practice everyone has ideas and beliefs about food. Another possibility may be that WIC staff discuss food less the longer a participant is part of the program as counseling shifts away from just "food." Future research could explore when staff ask these types of questions and how they approach this subject with WIC participants with the goal of developing questions that State agencies could add to their MIS and guidance for how to talk with participants about this subject and use the information learned. Research could also identify best practices for discussing cultural behaviors and beliefs and consider how to incorporate those into the training staff receive in cultural differences.

- Only 61 percent of staff in the in-person environment agreed with the statement that the nutrition assessment results in an appropriately tailored food benefit package. Twenty percent were undecided, and another 20 percent disagreed with the statement. It may be that regardless of how the nutrition assessment process is conducted, some staff believe it will not result in an appropriately tailored food package for some participants due to restricted options for food package tailoring. WIC staff appeared to have contrasting viewpoints as to how much tailoring is possible within the WIC food package. The issues raised by staff who see options for tailoring as unnecessarily limited seem to be twofold: frustration over the fact that they could remove items from the WIC food package that families did not consume but could not add replacements to the package to provide a "full" benefit and limited tailoring options in general for special diets (a common example was for families with allergies). While WIC has worked to improve the food package in recent years,[33] the program may benefit from further research that explores the limitations staff see in their daily practice and possible revisions to address these. This research could include the development of guidance from WIC about best practices for tailoring food packages based on allergies or preferences such as vegan diets.

- Other research suggested by these analyses include:
  - Further analysis of data to describe the use of participant-centered services in the nutrition assessment, including how decisions are made regarding what nutrition education topics to pursue.
  - Explore how redemption of benefits is used in the nutrition assessment and the extent to which benefit review could be helpful for tailoring benefit packages.
  - Explore optimizing the MIS to collect information without having staff enter it into the system. Could artificial intelligence have a role in recording data in the MIS?
  - Explore the efficacy of additional education methods such as sending video clips in text messages or having informative texts generated from the MIS and sent weekly to participants.
  - Explore how well the WIC food package works for participants with multiple and/or severe allergies.
  - Explore how to increase connections between WIC clinics and healthcare providers.
  - Explore how VENA guidance can be updated for remote services.

The analyses described in this report used data collected at the clinic level for both remote and in-person services, examining actual nutrition assessment and benefit tailoring practices in WIC clinics. Together with the study's Part 1 Report, these analyses provide a comprehensive account of WIC nutrition assessment and tailoring processes. Findings from these reports will

[33] With the help of the National Academies of Science, Engineering, and Medicine (NASEM), research was completed evaluating the types of concerns identified by staff and participants in this study. The Proposed Food Rule: Special Supplemental Nutrition Program for Women, Infants and Children (WIC): Revisions in the WIC Food Packages was published in November of 2022.

enable FNS to develop guidance to enhance WIC service delivery and improve staff and participant satisfaction and participant retention.