

Insights from Washington's COVID-19 response: A mixed-methods evaluation of WIC remote services and expanded food options using the RE-AIM framework

Evelyn Morris

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Committee:

Jennifer Otten

Emilee Quinn

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Evelyn Morris

University of Washington

**Abstract**

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Evelyn Morris

Chair of the Supervisory Committee:

Jennifer Otten

Nutritional Sciences

In March 2020, in response to the COVID-19 pandemic, Washington WIC (WA WIC) adopted federal waivers to facilitate transition to remote service delivery for both certification and education appointments. Due to challenges the WIC participants were facing when purchasing WIC-approved items in the stores during the pandemic, WA WIC also expanded the approved food list by more than 600 items. This study assessed the reach and effectiveness of the programmatic changes instituted by WA WIC during the pandemic; the processes, facilitators, and challenges involved in their implementation; and considerations for their continuation in the future. This mixed-methods study included virtual, semi-structured focus groups with WA WIC staff, virtual, semi-structured interviews WA WIC participants, and quantitative programmatic data provided by WIC agencies across the state of Washington. Fifty-two WIC staff from numerous agencies with various jobs and levels of practice participated in focus groups. Forty WIC participants of various races, ethnicities, urbanities, languages, and experiences with WIC

participated in interviews; 10 interviews were conducted in Spanish and 30 interviews were conducted in English. Thematic coding analysis with Dedoose (ver 8.3.45) was used to organize and interpret qualitative data, alongside quantitative analysis completed Microsoft Excel focusing on descriptive statistics. Compared to key months in 2019, overall participation on WIC increased, and completion rates for nutrition education and certification appointments increased in 2020 after WA WIC adopted the programmatic changes. Food benefit redemption also increased immediately after the food list was expanded in April 2020. Staff and participants were highly satisfied with remote service delivery, predominately via the phone, and participants appreciated the expanded food options. Staff and participants would like to continue having a remote appointment option in the future, and suggested various changes to improve service quality.

## **Introduction**

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is a federal program that provides health screening, nutrition education, breastfeeding support, referrals, and nutritious food to more than seven million low-income and nutritionally vulnerable women, infants, and children across the United States – including nearly half of all infants and 25% of young children.<sup>1</sup> Forty-two percent of WIC participants are Black, Indigenous, and People of Color (BIPOC)<sup>2</sup> and the percent of eligible families participating in WIC is higher in rural communities than urban ones.<sup>3</sup> Participating in the WIC program is associated with healthier diets, increased purchases of healthy foods, and improved rates of infant morbidity and mortality.<sup>4,5</sup>

Despite program benefits, only about half of eligible individuals enroll in WIC.<sup>6</sup> The barriers to utilizing WIC services are well-documented and include having to be physically present at WIC offices for appointments and limited foods meeting WIC eligibility requirements.<sup>7-9</sup> The COVID-19 pandemic exacerbated these barriers, since people were encouraged or required to stay home to limit coronavirus transmission and grocery stores experienced shortages of food items.<sup>1</sup> WIC participants reported trouble accessing WIC-eligible foods such as infant formula, milk, eggs, and bread.<sup>10</sup> At the same time, the outbreak created economic conditions that increased rates and severity of food insecurity among vulnerable families.<sup>11</sup>

In March 2020, Washington state WIC (WA WIC) began offering WIC enrollment appointments (certifications) remotely based on a waiver made allowable through the Families First Coronavirus Response Act.<sup>12</sup> WA WIC also permanently expanded the list of allowable foods by more than 800 items in April 2020. Based on previous a state policy change, WA WIC

had already been loading food package benefits onto an EBT card remotely. Together, these federal and state policy changes allowed eligible households to enroll and participate in WIC while clinics were closed to the public, and to access more foods to help offset retail shortages.

The programmatic changes to WIC services were implemented swiftly in response to the pandemic but provide an opportunity to gain insight into potential ways to reduce barriers to participating in WIC over the long-term. This study aimed to assess the programmatic changes instituted by WA WIC during the COVID-19 pandemic, including waiving the physical presence requirement for certification appointments and providing nutrition education and breastfeeding support remotely (together referred to as remote services), and expanding the list of allowable foods. The study drew upon statewide WIC programmatic data and a purposive sample of WIC staff and participants to examine the reach and effectiveness of the programmatic changes, including how the changes impacted enrollment, participation, staff and participant satisfaction, and food purchasing. Further, this study investigated the processes, facilitators, and challenges involved in the adoption and implementation of the programmatic changes along with considerations for their continuation in the future.

## **Methods**

This mixed methods study used semi-structured interviews with WIC participants, focus groups with WIC staff, and programmatic data to examine the reach, effectiveness, adoption, implementation, and maintenance of Washington WIC's programmatic adaptations to remote services and expanded food options during COVID-19. Qualitative data were collected between December 2020 and April 2021, nine to thirteen months into the coronavirus pandemic. Programmatic data from both before and during the pandemic were included when possible.

Study protocols were determined exempt from human subjects review by the University of Washington Human Subjects Division and Washington State Institutional Review Board.

*Framework*

The RE-AIM framework guided the research aims and study design process.<sup>13</sup> The RE-AIM framework provides a structure for evaluating the reach, effectiveness, adoption, implementation, and maintenance of programs and policies.<sup>13</sup> In this study, RE-AIM was used to examine the experiences and impacts of WIC programmatic adaptations and consider future changes to WIC.<sup>13</sup> Applying qualitative and quantitative data to the RE-AIM dimensions allows for iterative data collection that generates a holistic view of evidence-based adaptations that could be maintained in the future.<sup>14</sup> Qualitative data collection within the REAIM framework deepens the understanding of how and why certain quantitative data trends occurred.<sup>14</sup> Table 1 presents each construct of the RE-AIM framework, the definition as it was applied in this study, and the data sources used as evidence.

Table 1. Constructs of the RE-AIM framework and construct definitions and data sources for the constructs in the context of this study

<b>Construct</b>	<b>Definition Applied in this Study</b>	<b>Data Source</b>
Reach	The number and proportion of WIC participants who experienced the program adaptations.	<ul style="list-style-type: none"> <li>• Programmatic participation data</li> </ul>
Effectiveness	The extent to which WIC adaptations were associated with maintained or improved:	<ul style="list-style-type: none"> <li>• Programmatic participation data</li> </ul>

	<ul style="list-style-type: none"> <li>• WIC participation</li> <li>• Appointment completion</li> <li>• Food benefit redemption</li> </ul>	<ul style="list-style-type: none"> <li>• Appointment completion data</li> <li>• Food benefit redemption data</li> <li>• Staff focus groups</li> </ul>
Adoption	<ul style="list-style-type: none"> <li>• Programmatic changes adopted by WA WIC</li> <li>• Reasons for adopting these changes</li> </ul>	<ul style="list-style-type: none"> <li>• Staff focus groups</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>• How the adaptations were implemented</li> <li>• Supports needed to implement the adaptations</li> <li>• Facilitators and challenges to implementation</li> <li>• Satisfaction of WIC participants and staff including advantages and disadvantages.</li> </ul>	<ul style="list-style-type: none"> <li>• Programmatic data</li> <li>• Staff focus groups</li> <li>• Participant interviews</li> </ul>
Maintenance	<ul style="list-style-type: none"> <li>• Staff and participant interest in maintaining the adaptations</li> <li>• Supports needed to continue or improve the adaptations.</li> </ul>	<ul style="list-style-type: none"> <li>• Staff focus groups</li> <li>• Participant interviews</li> </ul>

	<ul style="list-style-type: none"><li>• Improvements to WIC remote services and food list</li></ul>	
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*Sample and recruitment*

WIC staff

A convenience sampling approach was used to recruit state-level staff to participate in focus groups. Contacts within the Washington State Department of Health WIC program (WA WIC) identified 10 state-level staff most involved in the transition to remote services and expanding the food list during the pandemic. The study team provided information about the study pertaining to informed consent to all identified state-level staff and, if staff were willing, scheduled them to participate in one of several focus groups.

To recruit a sample of local WIC staff, a convenience and snowball sampling approach was used. The research team first selected 10 of the 52 local WIC agencies from which to recruit staff. Agencies were selected to ensure diversity with respect to the rurality of counties served by the agencies, number of clients served by the agency, region within the state, and the agencies' reported service status early in the pandemic (e.g., if offering any curbside or face-to-face services as of May 2020). A contact at WA WIC then identified one or more WIC program coordinators from each selected agency and emailed them information about the study. Program coordinators were instructed to email the study team if they were willing to participate. The study team also asked each program coordinator to share information about the study with other certification, nutrition education, and breastfeeding education staff at their agency; these individuals were also instructed to contact the study team if interested in participating. The study

team provided information about the study pertaining to informed consent to all local agency staff who volunteered and, if staff were willing, scheduled them to participate in one of several focus groups. Using this approach, 42 local staff consented and enrolled in focus groups.

### WIC participants

WIC participants were recruited through a banner placed on the WICShopper app in English and Spanish for 1 day. In that time, 147 WIC participants volunteered to participate through the app by clicking on a link from the banner to a REDCap page that included the study procedures and a short demographic survey. This recruitment mechanism was chosen because WA DOH indicated that the WICShopper app was reportedly used by approximately 90% of Washington WIC participants at the time of recruitment.<sup>15</sup>

Seventy-two survey respondents were contacted to schedule their interview using a maximum variation approach to ensure the sample was reasonably representative of the Washington State WIC participant population with regard to race/ethnicity, rurality, and WIC-eligible household composition. The study team aimed to oversample participants identifying as American Indian and Black since these groups experience nutrition<sup>16</sup> and maternal health disparities<sup>17</sup> in Washington State. Participant recruitment continued until the target goal of 40 total interviewees, 10 of whom spoke Spanish, was reached. Of the 72 respondents contacted, 15 were not heard from or lost to follow-up, 6 changed their mind about participating, and 11 were scheduled but did not complete interviews, leaving 40 who completed interviews.

### *Data Collection*

#### Programmatic data

Non-identifiable, programmatic data were provided by WA WIC to examine reach and effectiveness through temporal trends in participation (i.e., number of people receiving WIC

benefits by participant type such as breastfeeding women, infant, or child), unmet need (i.e., percent of state Medicaid enrollees eligible for but not enrolled in WIC), and food benefit redemption (i.e., percent of food benefits redeemed of those issued in total per participant and by food type). The study team received reports collected by WA WIC from local WIC agencies at two time points (May and August 2020) with data pertaining to the status of their WIC services (e.g., number of staff; number staff working remotely; number of sites; and number of sites that were working all remotely, closed, offering curbside or face to face services) and supports needed or challenges experienced. These data were explored prior to beginning the staff focus groups and WIC participant interviews so that emergent quantitative trends could inform questions in qualitative data collection phases. These data also helped to triangulate findings from the qualitative focus groups and interviews when they were complete.

#### Staff focus groups

Twelve focus groups were organized to include staff with similar perspectives. One focus group comprised state staff who worked on the expanded food list, another comprised state staff who assisted in rolling out remote services, and the remaining 10 comprised local staff grouped to the extent possible by role (i.e., program coordinators, certifiers, nutrition educators, and breastfeeding educators and peer counselors).

The semi-structured focus group guide was developed using the study aims and the RE-AIM framework for initial question development; the research team collaborated with WA WIC to ensure the guide included questions that would address their internal programmatic needs. The questions asked about factors, processes, facilitators and challenges that accompanied the switch to remote services and the expanded food list. Staff were also asked about the feasibility and supports needed to maintain a remote or partially remote model of service in the future. Trained

interviewers conducted interviews via the Zoom videoconferencing platform from January 2021-February 2021. Focus groups took approximately 70 minutes and all were recorded.

### Participant interviews

The semi-structured interview guide for WIC participants was informed by the study aims, the RE-AIM framework, and emerging themes from the staff focus groups. Questions were initially developed by the research team and reviewed by WA WIC for clarity. WIC participants were asked about their prior history with WIC, their most recent remote WIC appointments, their experiences with and perception the expanded food list, their interest in seeing remote services continue, and how these aspects of WIC could be improved in the future. Several questions were also asked about ways in which participants may could been impacted by the pandemic (e.g., loss of job or difficulty accessing food or health care), other benefits they received during the pandemic (e.g., Pandemic EBT), and services provided by WIC that they valued most for context. Interviews were conducted March and April 2020 via the Zoom platform, without using the video feature, and recorded with interviewees' permission. Interviews were conducted in English or in Spanish with a professional translator on the line. They lasted approximately 30 minutes. All English-speaking interviewees were offered gift cards in the amount of \$25 and Spanish-speaking volunteers received gift cards in the amount of \$40, acknowledging the additional time required due to translation.

### *Data Analysis*

#### Programmatic data

Programmatic data were analyzed in Microsoft excel using descriptive statistics and were visualized in Tableau to demonstrate trends over time when appropriate.

#### Focus groups and interviews

Focus groups and interviews were recorded and transcribed using the zoom transcript function. Members of the research team reviewed transcripts for accuracy, referring back to the audio recording as necessary. The team used Dedoose<sup>18</sup> software to apply deductive codes generated from the RE-AIM constructs, adapting the original codebook to include a list of inductive parent and child codes that emerged while coding.

Team members engaged in an iterative process of independently coding a small subset of the transcripts, then comparing and contrasting code applications and further refining code definitions. Data saturation, meaning no new themes were emerging from the data<sup>19</sup>, occurred before all 14 focus group transcripts and 40 interview transcripts were coded; however, the team decided to code all transcripts because the sample of interviewees and focus group participants intentionally captured a diverse set of experiences on WIC. Coding inter-rater reliability (IRR) between two pairs of coders were assessed using the IRR feature in Dedoose; upon reaching Kappa statistics signifying “good” IRR (i.e., .79 or greater), team members completed the remaining coding independently. After coding, one team member summarized coded text from focus groups and another from interviews according to definitions of each RE-AIM construct used for the study.

Reflexivity, an evaluation of researcher’s positionality and potential areas where these experiences and identifies can influence the research, is critically important in qualitative research.<sup>20</sup> The researchers involved in this study identify as women of childbearing age, who live in the same state as the staff and participants interviewed. This difference in perspective between the research team and study participants has the ability put the study participants in the expert position and allows the research team to contribute new perspectives to the research on WIC.<sup>20</sup> However, there were also ways in which the identities and lived experiences of those on

the research team had the potential to influence the study design, data collection, and data interpretation.<sup>20</sup> To account for this, the team met regularly to reflect on their thoughts and experiences throughout the interviewing, coding, and summarizing processes, wrote notes and reflections after focus groups and interviews, consulted co-researchers when coding and analyzing data to ensure accurate interpretation, and discussed findings with staff at WA WIC to ensure accuracy of summaries.

## **Results**

### *Participant sample*

The sample included 52 WIC staff from both the state (N=10) and local (N=42) level and 40 WIC participants in Washington state. Together, the staff represented 11 total WIC agencies across the state. Staff focus groups were separated by level and grouped by topic, which included: remote services (1, state), expanded food list (1, state), WIC program coordinators (3, local), certifications (1, local), breastfeeding support (2, local), nutrition education (2, local) and mixed staff (2, local). See Table 2 for WIC participant characteristics. When asked about their level of concern for the pandemic, the WIC participants averaged a 1.9 out of a 4-point scale (0= not at all concerned, 1= a little, 2= moderately, 3= very concerned) indicating slightly below moderate concern for the pandemic. The impact of the pandemic was also estimated through self-reported experience with 6 possible impacts: disruption or difficulty with job/hours/wages, childcare/school closures, transportation, food access, rent or mortgage and getting or paying for medical care/expenses; the participants reported an average of 2.5 pandemic-related impacts.

Table 2. WIC Participant characteristics, COVID-19 programmatic adaptation interviews, Washington State

Category	# (%)
WIC Participant characteristics (n=40)	
Race/ethnicity <sup>a</sup>	
American Indian or Alaska Native	3 (8)
Asian	3 (8)
Black/African American	3 (8)
Hispanic	14 (35)
Multiracial	3 (8)
White	21 (53)
Other	4 (10)
Missing	3 (8)
WIC enrollment <sup>a</sup>	
Self	17 (43)
w/one or more infant(s)	14 (35)
w/ one or more child(ren)	30 (75)
Urbanicity <sup>b</sup>	
Urban	33 (83)
Rural	7 (17)
Geography <sup>b</sup>	
Eastern WA	13 (32)
Western WA	27 (68)
When enrolled in WIC	

Prior to pandemic (before March 2020)	35 (88)
During pandemic	5 (12)

<sup>a</sup> Categories are not mutually exclusive

<sup>b</sup> Based on WIC agency they enrolled in

*Reach*

Because the food list expansion included new food categories and brands and was implemented across the state, all WIC participants experienced the additions to the allowable food list. Based on data reported by agencies and focus group respondents, all WIC participants who had an appointment or were certified during the pandemic also experienced some aspect of remote services.

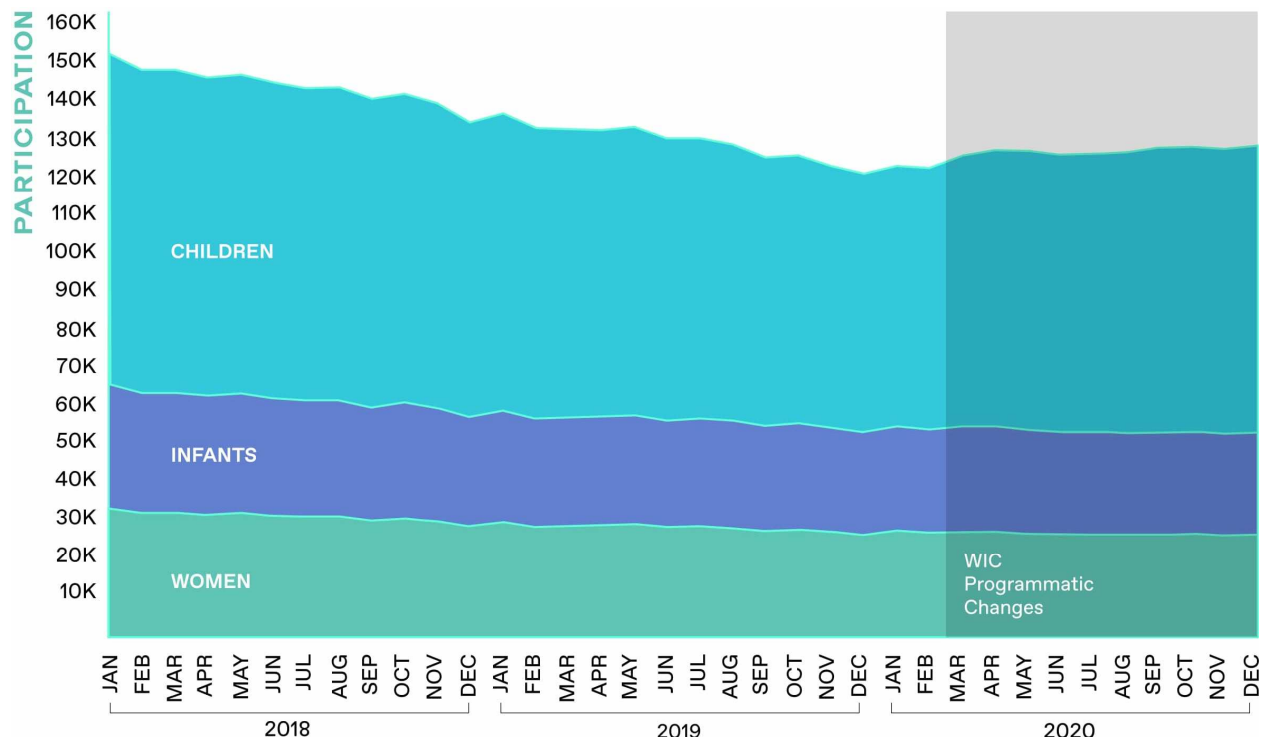
In May 2020, the WIC participant population reached with these changes included 26,891 women, 26,378 infants, and 72,010 children in Washington State; the population was predominantly white (70%), followed by multi-race (10%), Black or African American (8%), American Indian or Alaskan Native (5%), Asian (5%), and Native Hawai’ian or Pacific Islander (2%). In terms of ethnicity, 42% of total WIC participants identify as Hispanic.

*Effectiveness*

WIC participation.

As seen in Figure 1, participation had been steadily declining since 2017. The increase in participation begins just before the start of the pandemic and continues to increase after the programmatic changes were made to WIC in March. From March to December 2020, there was a 1.96% increase in participation (124,016 total participants in March and 126,244 in December)

and a 5.9% increase in participation from December 2019 to December 2020 (119,390 in 2019 and 126,244 in 2020).



**Figure 1.** Overall Participation in Washington State WIC (2017-2020).

This participation growth occurred to a greater degree among children participating in WIC, than women or infants. Participation growth also differed by race; from December 2019 to December 2020, participation increased among children identifying as Native Hawai’ian or Pacific Islander (18.3% increase), Black or African American (17.20% increase), Multi-Race (13.64% increase), White (10.96% increase), and Asian ( 8.93% increase); participation decreased for children identifying as American Indian or Alaskan Native (-6.43%).

Appointment completions.

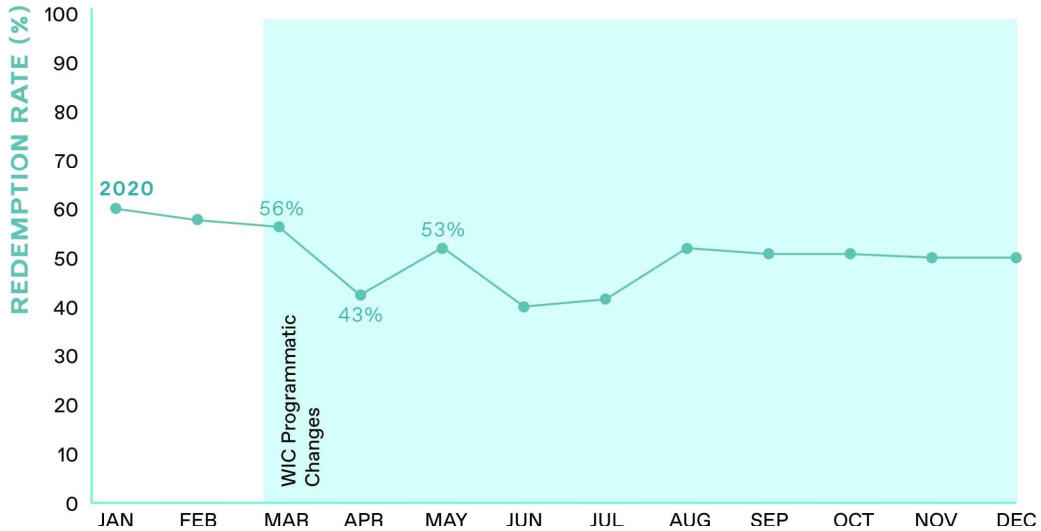
Local and state staff described noticing an increase in show rates for WIC appointments during the period in which the adaptations were implemented and postulated that this increase in appointment completion was related to the ease and convenience of remote services. As

described by one WIC staff, *“our show rates are much higher because there isn't the barrier of gathering all of your kids and your things and either driving or taking public transportation to get to WIC.”* Programmatic data from two sample months before and during the implementation period corroborated this; nutrition education completion rates increased from 78% in June 2019 to 96% in June 2020 and WIC certification show-rates increased from 72% in June 2019 to 77% in June 2020.

#### Redemption of food benefits.

WIC staff said they felt the expansion of the WIC allowable foods in April helped to increase availability and access to food package items for WIC participants during pandemic-related food shortages. The participants echoed this statement, and one participant shared: *“at the beginning, it was hard to get milk, cheese, and cereal, but then WIC updated the list of available foods and now I am able to get them with no problem.”*

WIC food benefit redemption data throughout 2020 in Figure 2 show that the average percent of all food items redeemed by WIC participants declined at the start of the pandemic from March to April, then increased almost back to the pre-pandemic levels right after the food list was expanded. Redemption rates then dipped once more before returning to rates near those experienced in early 2020.



**Figure 2.** Total food redemption rates by month in 2020.

*Adoption*

WIC Staff described three key federal waivers adopted that decreased barriers to providing services to participants during the pandemic, listed in Table 3. These waivers were implemented to allow for WIC services to continue while offices were closed to the public, and reduce the administrative burden on clinics, some of which were short staffed due to some staff being pulled away to pandemic response teams.

**Table 3.** Key Waivers WA WIC adopted during the pandemic.

Adaptation	Explanation
Physical Presence Waiver	Participants are allowed to certify and re-certify for WIC services remotely (via phone or video appointment) and defer height, weight, and lab value measurements
Remote Benefit Issuance Waiver	Staff are allowed to issue a participant’s benefits remotely, and do not have to conduct a second

	nutrition education contact in order to issue the benefits.
Separation of Duties Waiver	A single employee is allowed to evaluate a participant's eligibility for all certification criteria, and issue food instruments, cash-value vouchers and supplemental food.

Additionally, the other major programmatic change was a large-scale expansion of the approved WIC food list. In response to reported food shortages and challenges finding WIC-allowed foods in the store related to pandemic purchasing trends, two State WIC staff evaluated and added approximately 800 new items to the food list. State staff chose not to utilize the waivers related to food items, and instead chose to expand access to more brands and food items permanently.

*Implementation*

How remote services were implemented.

Phone appointments were mentioned by all staff in the focus groups as the most common way of reaching clients remotely. While some local staff had attended state- and/or agency-led training on use of video conferencing for appointments, the majority of local staff said that video appointments were not yet being offered to WIC participants. A small number of staff had tried the video appointments but found them too challenging. Others had plans to roll out video appointments soon or did not yet have any plans to incorporate video appointments. Perceived

challenges or barriers to offering video appointments included hesitancy from staff and clients related to discomfort and embarrassment, a lack of training, and limited access to video equipment. To help maintain contact with WIC participants, local staff, especially breastfeeding support staff, reported texting more frequently between appointments.

All appointments were conducted remotely but based on agency reporting data there were some staff working all remotely, some doing a mixture of remote and in-office, and some working all in-office. To supplement the phone appointments, video appointments, and texts, most of the local staff in the focus groups described mailing handouts and brochures to participants; handouts were mailed prior to the appointment so participants could follow along with the content while on the call, and also after the appointment when participants requested additional information. The majority of staff also described their agencies implementing pick-up services for things like breast pumps, diapers, and educational materials. A small subset of staff mentioned putting infant scales outside the office and having parents come by if growth was of particular concern.

#### What supported and facilitated implementation of remote services.

Transitioning from in-person to remote services required numerous supports from federal, state, and local agency staff. The federal waiver to defer measurements combined with state-level policy to defer submitting proofs and signatures on documents helped improve the flexibility of the certification process. As a result of these federal and state waivers, the appointments became quicker and more efficient; one staff member said, *“when you're doing everything over the phone things are just a bit quicker... we're not doing any kind of hemoglobin checks. we're not doing heights or weights... we're allowed to skip those so that saves a lot of time.”* State staff also provided various trainings and bi-weekly webinars during the transition to

help agency staff implement new technologies and virtual appointments. Additionally, state staff described creating handouts for local staff to share with WIC participants to help them adapt to video conferencing platforms. At the local level, common requests from local staff included cell phones, laptops with cameras, and attachable webcams for desktops without cameras to prepare for remote services. Local-level staff who were working from home requested various office items to improve data security, like lock boxes for paperwork, and occupational health, like standing desks and ergonomic chairs. To improve workflows in the context of the pandemic, a new service delivery model, and staffing-issues, local agencies shared resources and videos with each other to utilize existing knowledge and expertise to facilitate WIC participant interactions. One local staff member shared that *“it was nice to have that [breastfeeding powerpoint] that they shared with us that we can use so that we didn't have to all of a sudden, you know, spend all this time creating our own videos and things like that in order to be able to share with our participants,”* illustrating the support they received from other local staff members.

#### Staff and participant satisfaction with remote services.

Both staff and participants expressed high satisfaction with remote service delivery. Perceived advantages and disadvantages of remote services from the staff perspective are found in Table 4, and Table 5 contains perceived advantages and disadvantages from the WIC participant perspective. It is important to note that the advantages of remote services were mentioned more often and outweighed the disadvantages presented; participants understood why these challenges had to be experienced for now, given the pandemic.

Members of both local and state staff appreciated being able to “meet the clients where they are” and reduce longstanding barriers to participation which, from their perspective, was reflected by the increased appointment completion rate. Phone calls worked well for most

appointment types according to the majority of local staff. The appointments types that were mentioned as more difficult remotely included enrollment appointments, and some types of breastfeeding support services including latch and positioning support. For example, one staff member shared that *“it's been very challenging offering these breastfeeding support services remotely. It's hard to...convey the different positions or movements just, you know, over the phone.”* However, while enrollments and various breastfeeding support appointments were brought up by various staff as challenging, these opinions were not shared unanimously. For example, one breastfeeding educator said *“I was able to save that breastfeeding relationship by being able to meet that mom in that moment. When she needed help right then with feeding so that was really great for remote services”*; in this way, remote services were mentioned as a tool to help breastfeeding participants in the moment, quicker than having them come in for an appointment. Some of the challenges that can detract from remote appointment satisfaction include feeling uncomfortable using video platforms to hold appointments, believing that some participants seem distracted over the phone, and not being able to read visual cues to determine comprehension of information when interacting with a participant who needs an interpreter during remote appointments. These challenges were mentioned less than the success of increasing convenience for participants with remote services.

Participants viewed phone appointments as easy to complete, convenient, and sufficient for both sharing and receiving necessary information. It was easy for the participants to connect with, hear, and complete the appointments over the phone and they felt as or more comfortable receiving WIC services on the phone as they did in-person. About half of the participants interviewed indicated they occasionally took appointments away from home, including at work and while running errands. One participant noted that having appointments on the phone *“just*

*made it really easy. It was convenient that as I'm doing my normal everyday things that I can still do my appointment.*” None of the participants interviewed had conducted a video appointment and thus could not speak to elements of satisfaction regarding video appointments. Similarly, while staff indicated that at times it was difficult to conduct remote appointments via the phone with participants who needed interpreters, the Spanish-speaking participants interviewed had not used interpreters for services but had appointments with Spanish-speaking WIC staff and did not share similar concerns as the staff in the focus groups.

**Table 4:** Perceived advantages and disadvantages of remote services reported by the WIC staff focus group participants

Theme	Quote
<i>Advantages of remote services</i>	
Increased convenience for working parents, large families, those with transportation barriers	<i>“I think the majority of our clients like it, because it's quicker and they don't have to come in”</i>
Increased ability to adapt services to address participants needs in the moment	<i>“I was able to save that breastfeeding relationship by being able to meet that mom in that moment when she needed help right then with feeding. So that was really great for remote services.”</i>
Decreased barriers to participation such as:	<i>“I've seen [phone appointments] as a positive way to meet the needs of our clients without</i>

<ul style="list-style-type: none"> <li>• Having to take time off work for appointments</li> <li>• Having to bring multiple children to office for one child’s appointment</li> <li>• Having to secure access to reliable transportation</li> <li>• Having to travel a long way to reach the WIC office in remote/rural areas</li> </ul>	<p><i>creating more stress of how to get to the office and get in at a certain time for an appointment.”</i></p>
<p>Increased richness in conversations over the phone</p>	<p><i>“I think in part of the certification they have richer discussions. Participants are willing to share a little bit more over the phone versus face to face”</i></p>
<p>Increased ability to follow-up and service continuity with remote services because staff can communicate with participants from any office if necessary.</p>	<p><i>“I do like the fact that I can go back and forth, to the different areas and help each client from all the different areas there's no break in services”</i></p>
<p>Increased ease of sharing resources virtually with participants</p>	<p><i>“A lot more giving people links that they can keep on their phone, which I think people are appreciating because they can easily refer back to that later rather than ‘where did I find that pamphlet?’”</i></p>

<p>Increased amount of communication between staff and participants (i.e. between appointments, for questions etc.)</p>	<p><i>“People used to save up their little questions for the end of an appointment and go ‘Oh, there was something else I wanted to ask’ that they couldn't remember and now they're texting me more than they used to with just little questions intermittently”</i></p>
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*Disadvantages of remote services*

<p>Difficulty obtaining consistent height, weight, and hemoglobin measurements for infants and children</p>	<p><i>“Not having measurements, not having hemoglobin really bothers us as a whole because you don't know if a child growing properly or if a woman has an iron deficiency or whatever so that's a challenge... it's one thing to get it from the doctor's office, but a lot of the clients aren't going to the doctor.”- WIC Staff</i></p>
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<p>Missing in-person relationships and interactions with participants</p>	<p><i>"Seeing clients in person you get to see how they're feeling in their expressions when they're talking to us and you don't pick that up remotely when you're just talking on the phone or even in a text and so we tend to miss out on a lot of information that we could pick up if we were with them in person”</i></p>
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Increased difficulty of some appointment types (esp. new participants and participants using interpreters)	<i>“Those new certifications are harder. I find I take probably 15-20 minutes more than I used to”</i>
Difficulty engaging participants without all of the handouts and materials to share and describe in-person	<i>“When we’re educating new clients on how to use the WIC card and about the app and what foods that they can purchase it is pretty intensive...and when it’s over the phone, when they don’t have anything in front of them, it makes it really difficult.”</i>
Scheduling and dividing the caseload fairly became more challenging for various agencies during remote services	<i>“Sometimes a certifier will get four of those five appointments at the same time versus, you know, somebody else who will get a nice spread out schedule. When you have as many as 100-250 200 clients a day, you can’t go through and just individually piece it out”</i>

**Table 5.** Perceived advantages and disadvantages of remote services reported by the WIC participants

Theme	Quote
<i>Advantages of remote services</i>	
Not having to secure childcare or bring children to appointments	<i>“It was more convenient for me to do it over the phone because, with my kids, that meant I didn’t have to bring them or find a babysitter</i>

	<i>for them. I was able to just be at home and have all the information ready for it”</i>
Saving on travel time and cost of transportation	<i>“It's just convenient. You know, I don't have to drive all the way to the actual office itself.”</i>
Not having to take time off from work	<i>“I can have my with appointments on calls from anywhere...I'm able to you know, be at work.”</i>
Accomplishing other tasks during appointments	<i>“I can have my with appointments on calls from anywhere... I'm able to, you know, be at work and take the call or you know doing whatever it is and I'm not having to get up to go somewhere and all of that so it's pretty great.”</i>
Feeling safer during the pandemic	<i>“It's actually better, it's safer for people to be at home and especially because going to the WIC office, the office is really small, so they wouldn't be able to keep the social distancing.”</i>
Appointments seeming more focused and personalized	<i>“Most of the time, it's the same lady that calls me. So I mean... It kind of gets a little personal because we kind of get to know each other over the phone.”</i>

<i>Disadvantages of remote services</i>	
Missing information on height, weight, and iron for infants/children	<i>“Before, when we went in in person, we would know how the baby what was thriving and his weight and right now on the phone we wouldn't be able to know.”</i>
Missing interactions between staff, other parents, and children	<i>“She misses the ”Hello, how are you? How's your daughter?” Those interactions that she enjoyed while being in person.”- interpreter for WIC participant</i>
Feeling some appointments seemed rushed or brief	<i>“On the phone, it is kind of just quick like, ‘Well, we're going to add this, and this is going to happen like this and we'll see you talk to you in like three months or something.’ So, I don't know if we miss anything, but it's just really different.”</i>
Feeling that some appointments might not allow enough space and time to observe and interact with children, especially for new parents	<i>“I feel like they give more information when the child is in the room, and then they can see, ‘Oh your child can do this. Your child can do that.’ So, they can provide more information about specifically my child.”</i>

Satisfaction with the expanded food list.

When asked about their experience with the expanded food list, participants reported mixed awareness about the additional allowable foods; the half of participants who were aware of the additions said they were happy about them. Participants expressed appreciation for having an increased variety of foods to choose from during food shortages that occurred during the pandemic, specifically kid-friendly foods. To illustrate the appreciation for the expanded food options that children like, one participant said *“Yes, I like them, because we have more and more of an option of how to get cheese and yogurt because that's what [my son] likes.”* The foods participants mentioned when asked which they most appreciated included string cheese, shredded cheese, flavored yogurt, canned beans, cereal, milk, and juice. The WICShopper app was mentioned by participants as a helpful tool to use while planning for and actively shopping, especially in light of the expanded food list. The scanning feature, in particular, was called out for helping make it easier for participants to confirm which foods were eligible. One participant recounted that *“at the store, they don't identify which products are WIC and which aren't, but if you use the scanner it tells you whether or not it's approved.”* While the WICShopper app was particularly useful for a majority of the participants interviewed, participants still noted difficulties around determining which foods were added to the food list and items deemed not allowable at the register.

### *Maintenance*

#### Interest in maintaining remote services.

Both staff and participants expressed hope that remote services would continue beyond the pandemic. Almost all of the state and local staff advocated for a hybrid model that would include a mix of remote and in-person visits with participants. They recognized the benefits that

come with increasing the convenience and accessibility for appointments, but also noted that an in-person option could be useful for certain types of services and to hold space for parents to share any sensitive information including disclosure of domestic violence. When describing the WIC environment, one staff shared that *“moms sometimes like to come and share what's happening in their homes and I have many stories to tell about how some moms were really comfortable coming and sharing the kind of abuse, they were facing or things like that... so a hybrid fashion, I think, is a better idea.”* an anticipated decline in caseload and pushback from WIC participants if they revert back to in-person appointments after the waivers expire; one staff postulated, *“our show rates are much higher because there isn't the barrier of gathering all of your kids and your things and either driving or taking public transportation to get to WIC. And so if that's required again... I'm curious if we will have a big dropping case load, or just a lot of pushback from participants.”* When asked about a return to in-person services, participant interviewees generally said they would be fine with this. One third of the participants said they would want to make sure returning was safe in terms of the pandemic protocols prior to receiving in-person services and another third said they would return if it was required.

Nearly all of the participants interviewed hoped that remote services continued beyond the pandemic. The most common reason given for hoping to continue remote appointments was the improved convenience of the phone and video appointments. One participant described specific aspects of convenience, saying, *“it's far more conducive with everyone's busy lifestyle, instead of dropping everything and trying to physically go in trying to find a sitter, it's just so much easier to be able to do stuff over the phone or online.”* Out of 40 participants, only one spontaneously suggested reverting back to all-in person appointments and three said they would prefer all in-person services. Most of the participants supported having an option for in-person

appointments. For example, when discussing the preferred mix of in-person and remote appointments one participant suggested that *“as far as reloading the card, then yeah, phones fine. But if it has anything to do with checkups or with growth information, then I would like those to be in-person.”* Other suggestions for in-person appointment options from the WIC participants included enrollment appointments, breastfeeding support, and the discussion of sensitive topics.

#### Suggestions for improving remote services.

The staff proposed many ideas for how to incorporate remote and in-person appointments into the service delivery model including: drop-in days for heights and weights and conducting the rest of the certification appointment remotely, giving participants the option of certifying remotely or in person, and conducting biannual certifications in-person and the rest of the appointments remotely. Staff expressed strongly that consistent and accurate measurements are essential to assessing nutritional risk and, further, that WIC is typically unique in its ability to collect and use this information. Most staff members agreed that families with multiple children enrolled in WIC should be allowed to re-certify on the same day in the future. Approximately one quarter of the staff expressed interest in incorporating more video appointments in the future, and participants had mixed views on video appointments based on speculation since most had not yet been offered an appointment via video when the interviews were conducted. From the participant perspective, perceived advantages of incorporating video appointments included seeing demonstrations, having staff interact with children, and feeling more comfortable talking to someone they could see. Although, the main perceived disadvantage of video calls from the participants was that they would not be able to take calls “hands free” which is an important aspect of the convenience of the phone appointments.

### Supports needed to maintain remote services.

In order to continue providing remote services in the future, staff described supports at both the federal and state level that would be necessary. State and local staff discussed wanting to see flexibility in the physical presence regulations on the national level so the program can “become more nimble” and continue meeting the needs of their participants in this modern era. When the interviews were conducted, local staff felt both excited and hesitant to incorporate more video appointments in the future; approximately one quarter of the staff expressed readiness to learn and implement the new technology, while others weren’t comfortable with the technology and anticipated barriers to video appointments for participants. State staff recognized the importance of further training on video conferencing, describing a significant learning curve for staff and participants.

### Interest in and improvements recommended for a maintained expanded food list.

Participants made clear that they would like the list of allowable food to remain expanded, with even more foods added. Participants said they would like to see additional approved food brands, more organic options, and more flexibility in allowable food package sizes. Participants also suggested improvements to the WICShopper app, EBT card, and food list that could improve their shopping experiences. Within the app, participants would like to see improved search features, increased speed and scanning reliability, and additional meal planning features. They would also like to be able to order WIC groceries online and pick-up curbside. This addition of online ordering services and expanded pick-up and delivery options was suggested by staff based on what they had heard in their interactions with WIC participants.

### **Discussion**

There has been a call for thorough evaluation of WIC service changes implemented in response to the COVID-19 pandemic in order to provide evidence that could be used to strengthen WIC and inform the upcoming Child Nutrition Authorization process.<sup>21</sup> This study was designed to generate evidence-based suggestions for implementing, maintaining, and improving the programmatic flexibilities adopted by Washington State WIC in response to the pandemic for future practice. Overall, these results illustrate that appointment show rates improved when remote services were implemented and that WIC participants and staff were highly satisfied with both remote services and the expanded food options. Stakeholders communicated strongly that they want to see both changes maintained in some form. The impact of these changes on WIC participation trends and food benefit redemption is less clear given the many contextual factors also influencing WIC eligibility and food shopping experiences during the pandemic period; while WIC participation improved over the period in which changes were enacted, particularly among children, the combined effects of increased unemployment<sup>22</sup>, increased food insecurity<sup>22</sup>, and decreased access to other important food-related safety net programs such as school meals<sup>23</sup>, make it difficult to determine the extent to which participation increases are attributable to WIC programmatic changes as opposed to increased need.<sup>1</sup> However, the changes demonstrate promise for optimizing WIC services beyond the pandemic.

This study aligns with recent research on WIC participants' experiences with remote services during the pandemic, and also delves deeper into specific reasons why remote appointments are easier than in-person. Participants in Tennessee, California, and now Washington have indicated that phone appointments have been more convenient than in-person appointments.<sup>24,25</sup> Similar to participants in California, the participants in this study felt comfortable with appointments over the phone and sharing documentation remotely.<sup>25</sup> Uniquely,

participants in this current study highlighted many specific advantages of the remote appointments that are convenient and address longstanding barriers to WIC; the most notable benefit of remote services cited by the current study's participant sample involved not having to secure childcare to attend appointments or bring multiple children to appointments, both of which would present more difficulties during a pandemic than in typical times. Past research has demonstrated that bringing children into the office is one of the most common barriers to recertifying and utilizing WIC benefits<sup>7</sup>, and this study highlights remote services as a potential way to increase certification rates that was facilitated by parents not having to secure additional childcare to attend appointments. Other advantages mentioned by participants in this study that address previously reported barriers to utilizing WIC services<sup>7</sup> include saving on travel time and costs, taking appointments on breaks from work, and feeling like the services were more personalized on the phone. Similar to California<sup>25</sup> and New York WIC<sup>26</sup> participants, Washington WIC participants were highly satisfied with the services WIC provided remotely, and Tennessee<sup>24</sup>, New York<sup>26</sup> and Washington WIC participants both explicitly suggested the carryover of remote services beyond the pandemic.

Findings from this research showcase high satisfaction with the additional food options made allowable during the pandemic and suggest that the expanded food list likely offset a further decline in food benefit redemption rate due to pandemic-related food shortages.<sup>10</sup> This study provides unique insight into participants' opinions on which of the expanded foods options were most appreciated during the pandemic, and results included kid-friendly items such as string cheese, yogurt, milk, and cereal. Washington WIC made the decision to expand these categories of items without utilizing waivers, making these additional items permanently allowed to increase access to participants' desired foods. States that relied on waivers should determine

which foods can be permanently added to the allowable food list to maintain increased access to participants' desired food options. While both Washington and Tennessee<sup>24</sup> WIC participants appreciated the expanded food items, they noted pandemic-related barriers to shopping including empty shelves of WIC allowable foods and inconsistent stocking of WIC items. To help determine which new items in the store were WIC allowed, both California and Washington WIC participants noted that the WICShopper App was particularly helpful.<sup>25</sup> Despite the helpfulness of the expanded food list and WICShopper App, participants from the current study noted that package size constraints were magnified during the pandemic. Some of the Washington WIC participants noted that, while the number of approved brands of certain foods like cereals grew, the allowable sizes of food items remained a constraint because food packaging sizes in stores differed. Package size availability has been a longstanding challenge reported by WIC participants<sup>7</sup> and this study indicates it has continued to impede WIC benefit redemption even within the context of the expanded food options during the pandemic; the Washington WIC participant perspective adds further urgency to existing advocacy for policy change regarding allowable package sizes of WIC approved foods.<sup>27</sup>

This the first study that presents the staff perspective of how programmatic changes were implemented, facilitators and challenges to implementation, and suggestions for future practice informed by their experience working for WIC during the pandemic. Interestingly, the staff perspectives were similar to WIC participant perspectives when describing the ease and convenience of remote services, aspects of remote services that decrease participation barriers, discussing the WICShopper App and EBT card as helpful shopping tools, and outlining the appreciation for the expanded food list. The main drawbacks to remote services outlined by staff also aligned with the participants' perspectives: they wanted a way to capture consistent

measurements remotely and they missed interacting with the WIC participants in the clinic. While there were many similarities between staff and participant perspectives, they also diverged in several areas. First, some staff felt like at times participants seemed distracted during phone appointments, noting that sometimes participants would take appointments from locations outside the home. Participants did discuss taking appointments away from the home, but within the context of convenience, highlighting the ability to multi-task or maximize breaks from work while conducting WIC appointments as a benefit of remote services. Second, a common concern noted by staff was that participants would drop off of the program once in-person services were re-established. Participants do want to continue receiving WIC services remotely after the pandemic but none said they would drop out of the program if in-person services were required. Staff and participants also had similar suggestions for programmatic changes in the future, including transitioning to a hybrid model of services, and improving the shopping experience through online ordering and pick-up/delivery options. Staff had more specific ideas for capturing accurate measurements without reverting back to the physical presence regulations in place prior to the pandemic; they suggested improved data sharing amongst other providers and programs that capture measurements,<sup>1,28</sup> walk-in height and weight measurements done prior to remote certifications, and new technology for at-home measurement collection. The staff perspective should be incorporated into future research when possible, as it is valuable to know where both WIC staff and participants align in their priorities in order to make recommendations for programmatic changes.

Maintaining some of the programmatic changes beyond the pandemic would require various federal policy changes. Findings from this study add to a base of evidence that supports continued access to remote WIC services,<sup>1,24,29</sup> specifically Washington WIC staff and

participants suggested a hybrid model that mixes in-person and remote services. A hybrid model would maintain the ease and convenience of remote appointments, while also recognizing the importance for participants to have the option to receive services in-person if desired. In order to continue certifying and re-certifying participants fully remotely either by video or phone, the federal physical presence requirement would need to be amended. If a hybrid certification were to be pursued, including measurements taken in-person and the rest of the appointment conducted virtually, the physical presence requirement would also likely need to be amended to include that option. Some of the reasons the physical presence requirement exists are to observe WIC participants<sup>30</sup>, identify health concerns<sup>30</sup>, personalize service delivery<sup>30</sup>, and protect against fraud.<sup>31</sup> Video appointments could be a substitute for physical presence as they allow for observation and visualization<sup>32</sup> of the participants and can be used to identify health concerns as seen with the increasing use of videoconferencing in telemedicine<sup>32</sup>, and some participants in this current study felt as though remote appointments were more personalized and focused compared to in-person appointments.

To facilitate the continued success of remote appointments, additional means of collecting height, weight, and hemoglobin measurements would need to be piloted and evaluated. Future research should evaluate potential options such as drop-in hours for collecting measurements along with the ability to certify remotely. Additionally, trainings and technological resources to maximize remote service quality in the future should be strengthened.<sup>1,33,10</sup> Washington WIC staff advocated for additional video appointment platform trainings for both staff and participants to feel comfortable providing and receiving services via video, as well as pre-recorded video orientations about how to shop with the WIC EBT card and WICShopper app created in multiple languages. To improve the shopping experience and food security of WIC participants, state

WIC programs should look beyond the waivers and expand their approved food lists within the current federal regulations. However, federal policy change will be needed to address food package size discrepancies that impede complete use of allotted benefits. As many of these proposed recommendations would be taking place in a non-pandemic setting, any change to WIC service delivery should be tracked and evaluated for both successes and unintended consequences.

There are multiple strengths of the design, methods, and analysis of this study to consider when drawing conclusions. Key strengths include the mixed-methods design, the participation of a diverse participant sample, the iterative approach to coding qualitative data, and the member-checking process with WA WIC staff. Integration of programmatic data with staff focus groups and participant interviews allowed for contextualization and explanation of the programmatic data.<sup>34</sup> Use of both quantitative and qualitative data within the RE-AIM framework has been recommended, and both were employed in this study to guide a more rigorous exploration and explanation of multiple aspects of the changes, including how and why they were adopted and implemented, their impacts, and considerations for their maintenance.<sup>13</sup> Further, having multiple coders read and code a subset of the transcripts, discuss coding discrepancies, and collaborate on and refine the themes enhanced the data triangulation process<sup>35,36</sup> and confirmability of these results.<sup>37</sup> The participant sample interviewed represented multiple races, ethnicities, rural and urban locations, tribes, staff roles, lengths of time on WIC, breastfeeding statuses etc. to capture a diversity of perspectives about the programmatic changes as suggested by McElrone et al. in their study of predominately White, non-Hispanic WIC participants in Tennessee.<sup>24</sup> Though there were not sufficient time to conduct a member-checking process with the WIC participant

sample, member-checking was conducted with WA WIC staff. Preliminary results were shared, and staff discussed their reflections on whether the findings resonated with their experiences.<sup>37</sup>

There are also limitations to this study. First, all participants lived in Washington state at the time of data collection, limiting the national generalization of the results. Second, interviews were only conducted in English and Spanish, adding more languages could have allowed for increased diversity of the WIC participant sample interviewed. Third, the team engaged in a collaborative and thorough coding process and discussed preliminary findings with state-level WIC staff, however there was not sufficient time to conduct a member-checking process with the WIC participant sample.<sup>36</sup> Fourth and finally, the sample of WIC participants were recruited through the WICShopper App, which may have generated a sample that would be more comfortable with the technology and experience of remote service delivery; however, approximately 90% of the WIC participants in Washington state utilize the WICShopper App and all have experienced remote services so the potential for a biased sample is likely low.

## **Conclusion**

This study explored the reach, effectiveness, adoption, implementation and maintenance of remote services and the expanded food list, the major changes that WA WIC executed in response to the pandemic. After these changes were implemented, participation, appointment show rates, and food redemption increased. Both staff and participants were highly satisfied with remote services and envision a combination of remote and in-person services offered in the future. Participants who were aware of the expanded food list were also appreciative of the increased variety of kid-friendly options. Some of the changes to WIC suggested by staff and participants, especially the continuation of remote certifications, would require federal policy

change while others, including increased staff and participant training for video appointments and additions to the app and food list, would not.

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