

# 2023 WIC Technology Landscape Report

Using technology to improve the enrollment and certification experience for participants and WIC agencies



National WIC  
Association

**Nava**

A Collaboration of Nava Public  
Benefit Corporation and the  
National WIC Association

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## Table 1: Summary of Acronyms

| Acronym  | Definition  |
|----------|---|
| EBT      | Electronic Benefit Transfer   |
| FNS      | Food and Nutrition Services   |
| COVID-19 | Coronavirus Disease 2019  |
| GSA      | United States General Services Administration                                     |
| HIPAA    | Health Insurance Portability and Accountability Act                               |
| NWA      | National WIC Association  |
| MIS      | Management Information System   |
| SMS      | Short Messaging Service   |
| USDA     | United States Department of Agriculture   |
| WIC      | Special Supplemental Nutrition Assistance Program for Women, Infants and Children |



## Table 2: Glossary of Technical Terms

| Term                                    | Meaning in a WIC technology context  |
|---|--|
| Agile development                       | Compared to more traditional software development (often referred to as “waterfall”), where project activities are planned in longer, sequential phases that each rely on the previous one, agile software development is focused on shortening feedback loops and relying on constant feedback, iteration, and collaboration to improve products. Agile teams typically work to build a minimally viable product (MVP) as early on in the process as they can, test it with end users and business stakeholders, collect feedback, and iteratively incorporate that feedback by repeating that cycle. |
| Application Programming Interface (API) | APIs are the mechanisms through which individual software applications pass information to one another. Communications between the systems are facilitated by API calls, which are simply requests between the application to send new information to another system, or ask for updated information from another system.  |
| Decoupled technical architecture        | Compared to a monolith technical architecture where there’s a large, complex, single system responsible for many things, a decoupled technical architecture consists of microservices: small components that work independently of other software components and are connected by APIs.  |
| DevOps                                  | Practice of coordinating work between software development and systems operations  |
| Human-centered design (HCD)             | Methodology for building products and designing services that incorporates feedback from the people for whom you are designing throughout the design process. Its core principles are to build an explicit understanding of users, involve them throughout the development process, test and iterate frequently, and address the whole user experience of a product or service. For more information, see 18F’s guide for applying HCD in government   |

|               |  |
|---------------|--|
| Integration   | <p>A technical integration is what allows data in one system to seamlessly move into another system, and to move data back in reverse. It facilitates a unified experience between two separate systems or tools.</p>  |
| Portal        | <p>A portal is a website or web page that provides access or links to other sites, tools, or services. Many benefits programs (WIC included) have built portals that allow participants to log in and apply for benefits, check their balance, and perform other self-service tasks.</p>   |
| Product       | <p>A digital tool, feature, or system that is delivered to users (e.g. WIC staff and participants) that meets a set of business and user needs. Examples of products are WIC shopping apps, online forms to begin the WIC application process, and Management Information Systems.</p>   |
| Release       | <p>A release is the distribution of a version of a software application. Releases typically contain bug-fixes, enhancements, or altogether new functionality. Sometimes referred to as deployments, a release is that set of code (that delivers features and functionality) to the version of a system that end-users are using.</p>  |
| User          | <p>The consumer of a product or service. For a WIC certification tool, this can include participants, clinic staff, local agency staff, and state agency staff.</p>  |
| User research | <p>A range of techniques used to understand the target audience (or user-base) and the problems that they have. In WIC, user research would include observation of applicants and participants interacting with existing tools or prototypes of new tools, or interviews with end users to understand their thought processes. The outputs of this research would then be used to inform the design of a product or service.</p> |

## Executive Summary

In this report, the National WIC Association (NWA) and Nava Public Benefit Corporation (Nava PBC) discuss the state of technology used for certification and enrollment into the Special Supplemental Nutrition Assistance Program for Women, Infants and Children (WIC) program. This report explored the breadth of online tools being used to support WIC certification and informed recommendations to make impactful technology projects that enable program outcomes more equitable and accessible across WIC. The information in this report was gathered by Nava via surveys sent to WIC State Agencies, interviews with a sample of WIC State Agencies, and desk research.

The WIC certification process has historically relied on frequent in-person interaction and required participants to provide physical proof of eligibility. Under COVID-19, however, the United States Department of Agriculture (USDA) Food and Nutrition Services (FNS) granted waivers that enabled WIC State Agencies to provide WIC services remotely to protect the health and safety of participants and staff. WIC State Agencies adapted quickly and implemented technology and process solutions to serve WIC participants without being in person. These changes have been met with a high level of satisfaction by WIC participants and staff, but also often require added operational burden to WIC staff.



This work builds upon a [2020 WIC Technology Landscape Report](#)<sup>1</sup> WIC Association (herein 2020 Landscape Report) which sought to understand the changes to enrollment and technology during the height of the COVID-19 pandemic. The 2020 Landscape Report noted that while WIC had modernized technology in other areas of the program, like nutrition education and Electronic Benefits Transfer (EBT) capabilities, the certification and enrollment steps of the program had less nationwide attention and presented a unique opportunity to use technology to support participant-centered service delivery at these touchpoints.

This 2023 Landscape Report details the progress that has been made since and acknowledges some of the persistent structural barriers to technology equity. It highlights lessons learned from remote pandemic operations that provide a more nuanced

understanding of challenges and inform more targeted recommendations. It also calls for additional policy and systems support to raise the floor of WIC technology-enabled service delivery while uplifting the successful innovation of some states as examples to follow. Overall, the assessment found that while WIC State Agencies have made some good progress in using new technology to support participant-centered services, enabled by the relaxed program requirements under the COVID-19 pandemic Public Health Emergency (PHE), many agencies continue to face some of the same barriers outlined in the previous report.

Finally, in the context of increased federal investment in WIC modernization since the publication of the last report, this report demonstrates that now is a unique time for federal leadership, support, and resources to shepherd recommendations and multiply innovative state and local agency efforts to improve technology equity across the country.

## **Equity & Technology**

Over the past two years, many WIC State and Local Agencies have implemented new technology - such as document upload capabilities, Management Information System (MIS) upgrades to adhere to changing policies, and ways to communicate with participants by text - and successfully facilitated remote service delivery that protected the safety of participants and staff. Studies show participants have been satisfied with this mix of in-person and remote experiences, and suggest it continue after the Public Health Emergency expires. Since WIC technology disparities exist between and within states due to barriers like funding, staff capacity, access to smart devices, internet access and connectivity, technical expertise, and competing priorities, WIC State Agencies are unequally poised to support this new service model.

The application of an equity lens allows for the exploration of how program experiences and outcomes (e.g. breastfeeding, diet quality, child development) are impacted by race, ethnicity, disability status, location, gender identity, geographic location, and other social identities. As it relates to technology, equity entails complete access to technology-enabled, modern WIC service experiences for all participants.

Health equity is a priority for the National WIC Association, as reflected in the Health Equity Statement below. Delivering equity in technology can contribute to achieving health equity by improving participant experiences and resources. Thus, the National WIC Association applies this equity lens to the analysis in this report and its broader work on technology, and views technology as integral to achieving health equity.



## ***National WIC Association Health Equity Statement***

For the National WIC Association, health equity is the ability of all individuals and families to achieve optimal health, no matter their identity, race, ability, class, or location. This requires equitable access to nutritious foods, breast-feeding support, chronic disease prevention and management services, safe living environments, and good jobs with fair pay. It necessitates removing obstacles to families' short- and long-term health and wellbeing, including poverty, discrimination, and institutional racism and other forms of bias expressed through housing, healthcare, education, labor, and other public policies.

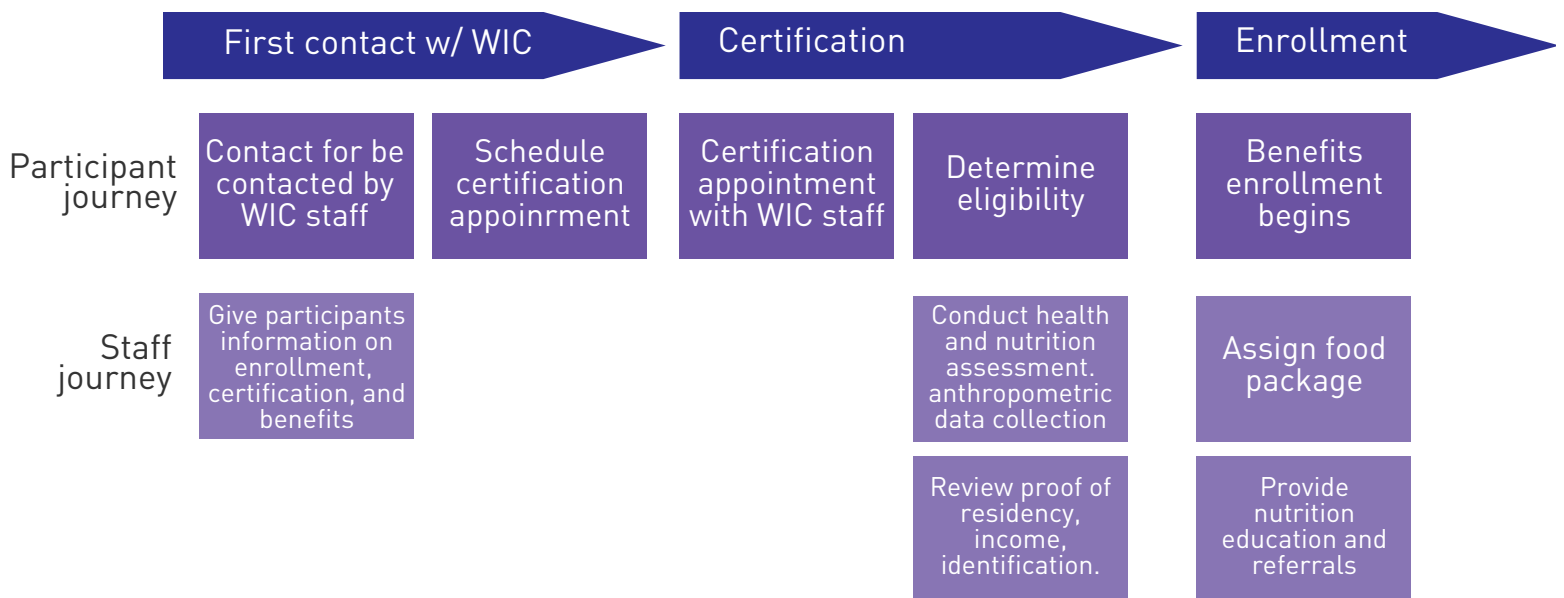
This report focuses on the state of technology and capacity among WIC agencies at the structural level, but it is also critical to recognize that inequities exist at the community and individual level as well. Frontline WIC staff report that WIC participants are eager to use technology to access different aspects of the program. COVID-19 presented a challenge and opportunity for WIC services to pivot to remote services quickly and implement new technologies. Optimizing WIC service delivery requires a thorough understanding of the current skills, needs, experiences, and desires of the families served by the program. Barriers to technology may include limited digital literacy, but may also include limited internet access, particularly in rural areas. Accessibility issues for non-English speakers as well as those who are hard of hearing or low vision are also concerns.

The gap in digital literacy and accessibility is critical to ensuring that participants are able to take advantage of the tools offered at the state level. Although participant technology capacity is outside of the scope of this report, it is a priority for NWA's work on technology. NWA supports national broadband access and views it as essential to modernizing WIC. Broadband will be essential to ensuring that WIC can offer virtual appointments, utilize online education platforms to reach families at more convenient times, minimize EBT outages for retail vendors, and conduct electronic transactions at farmers markets. Efforts to scale up broadband access should be equity-focused, prioritizing rural, remote, and tribal communities.

## ▶ Background

The WIC certification and enrollment process for participants traditionally involves making in-person contact with a WIC clinic, providing proof of income, and attending a certification appointment for a nutrition and health assessment so they can enroll in the program and start redeeming benefits from their prescribed food package. Participant certifications are time-bound and specific to the category of participant (e.g. pregnant, postpartum, infant, etc.) so participants must re-apply and generally provide updated proofs of eligibility throughout their participation in WIC. Figure 1 details the certification process from the staff and participant perspective.

**Figure 1: Certification Process Steps**



Even before the COVID-19 pandemic, WIC providers have innovated to reduce administrative burdens for applicants and leverage modern and increasingly digital tools to reach eligible families. These changes were accelerated during the COVID-19 pandemic as WIC agencies leveraged technology to deliver services in a safe, accessible manner to WIC participants. In 2021, the National WIC Association published the [Multi-state WIC Participant Satisfaction Survey](#),<sup>2</sup> which surveyed WIC participants in multiple states on their experiences and satisfaction with interactions with WIC, shopping for WIC foods, and using the WIC Card and Mobile Application (App) during the pandemic to inform future policy and operational decisions. And, remote certification appointments and service options became standard during the COVID-19 pandemic, resulting in a 12 percent nationwide increase in child participation.<sup>3</sup>

This report also builds upon the 2020 Landscape Report conducted by Nava and NWA to understand how COVID-19 and a shift to remote services impacted certification and enrollment delivery. The report defined some of the online certification and enrollment tools used across agencies that administer WIC services (geographic states, Indian Tribal Organization (ITO), and U.S. territory agencies, herein referred to as "State Agencies"): an online pre-application, a participant portal for providing individualized self-service, a document uploader to minimize extra trips to the clinic, video conferencing for remote appointments, two-way text communications to improve connections with applicants, and automated chatbots to answer routine questions. Some of these tools contributed to improved participation, retention, and participant satisfaction with the program, but have also created an additional burden on WIC staff (e.g. manual data transfer) due to a lack of direct integration with core WIC source systems. Further, the report found state agencies faced program and policy barriers to technology innovation and participant-centered service delivery, including the State Agency Model that established consortiums of states to access and share technology funding, and in-person program requirements.<sup>4</sup> The report highlighted opportunities, including for reevaluating these policies and for certification and enrollment tools to use proven technology development practices, like modular development and human-centered design, to ensure that new tools meet user needs and support the participant experience without compromising operational efficiency.




Since our last report, agencies have been continuing to operate under the waivers<sup>5</sup> prompted by the Public Health Emergency, which enabled them to provide WIC services remotely, via phone or computer, keeping their staff and WIC participants safe in the midst of a crisis. The key flexibilities granted by the waivers include allowing WIC agencies to issue benefits remotely rather than requiring participants to pick up their benefits in person and allowing participants to enroll or re-enroll without an in-person visit to the WIC clinic. And, even while navigating the complexity and extenuating circumstances of operating in a global pandemic, state WIC agencies continued to experiment with and implement new technology that serves WIC participants.

In February 2023, the White House announced that the Public Health Emergency declaration (PHE) tied to the COVID-19 pandemic will come to an end on May 11, 2023. This announcement means that WIC waivers under the PHE, including flexibilities in physical presence requirements, will expire on August 9, 2023.<sup>6</sup> USDA also announced a new round of waivers to be rolled out this summer. These new waivers, which allow for remote certification and recertification of participants while establishing a 60-day window for the collection of anthropometric data, build a bridge toward modernization of WIC services while transitioning away from the program's emergency posture adopted during the pandemic.

Given this rapidly changing context, NWA and Nava PBC are interested in learning about those projects, what progress has been made since the last report, and what barriers persist in creating and implementing enrollment and certification technology. This report aims to be a resource for State Agencies and the wider WIC community working on technology projects. It also yields technology, policy, and program recommendations for how to evolve WIC service delivery to improve program outcomes, reduce staff burden, center participant experiences, increase technology equity across states, and ultimately participant health equity.

## **Research Methods**

The information in this report was gathered by Nava PBC from October through November 2022. The research employed a mixed methods approach:

- 
1. A survey sent to all State Agencies (quantitative and qualitative, available in appendix)
  2. In-depth interviews with a sample of State Agency staff (qualitative)
  3. Desk research from 2020 Landscape Report (quantitative)

### **1. State Agency survey**

The survey consisted of several required multiple choice questions coupled with optional open-ended questions to try to minimize the burden on survey respondents. Multiple choice questions were a mix of multi-select and single choice selection, and some of the questions were the same ones asked in the first landscape assessment, allowing for tracking progress over time. However, this survey was designed to capture more information based on this assessment's broader goals for lessons learned during the pandemic and the desire to dig deeper into topics like MIS data transfer, referrals, and integrated benefits. As such, additional questions were created and/or modified from the 2020 report.

We received responses from 46 out of the 89 WIC agencies. We clustered responses based on shared themes and patterns, giving us insight into WIC directors' (or delegates') perspectives on opportunities and priorities regarding WIC technology. Examples of themes include "comments on physical presence waivers" and "technical expertise needs". Of the 46 respondents, 35 were geographic states, 10 were ITOs, and 1 was a U.S. territory. See Appendix for our survey questions.

## 2. In-depth interviews with WIC State Agency staff

We also conducted 60-minute interviews with staff at 13 WIC State Agencies to dig deeper into technology learnings and reflections. Of the 13 agencies interviewed, 11 also responded to the survey.



NWA selected the sample based on the following criteria: 1) ensuring some states selected had participated in the last assessment to reflect progress over time and 2) ensuring that a diversity of capacity, size, and geography was represented. Of the 13 agencies interviewed, 11 were State Agencies, 1 was an ITO, and 1 was a U.S. territory.

After confirming consent for these interviews, we asked about lessons learned from the pandemic, technology projects State Agencies have been working on, current barriers and opportunities for technology-supported enrollment and certification, and referral systems, MIS systems, and integrated benefits applications.

See Appendix for our interview guide

## 3. Desk research from the 2020 Landscape Report

This report leverages the 2020 report data as well as the data collected for this report. The 2020 report relied on WIC State Agencies responding to an email in order to validate whether the data we gathered from detailed desk research about which online certification and enrollment tools the state agency had was correct. That email also contained open-ended survey questions (not a link to a specific survey tool) that state agency respondents could reply to.

In this desk research, Nava cataloged and assessed the public-facing online tools available to individuals applying for WIC in each of the 89 State agencies, recording key data points including:

- ▶ Management Information System (MIS) in use
- ▶ Current MIS vendor and consortium status
- ▶ EBT status
- ▶ Availability of online tools for certification such as pre-screener, application, portal, integrated (multi-program) application, document submission, and more
- ▶ Availability of other online tools such as food benefits management portal, shopping app, nutrition education portal, and more.

We sent an email to all State Agencies to confirm their MIS system, vendor, and basic information about whether they had specific tools such as online applications. We sent this email in order to ensure the fundamental landscape of WIC technology was included for as many agencies as possible, even if agencies were unable to complete the entire survey. We let agencies know that if they did not reply, we would assume the information we had to hand from the 2020 Landscape Report was accurate. 77 agencies replied to the survey confirming or updating their data from the 2020 report.

### Research Method Strengths and Limitations

This report leveraged a multiple-choice and open-ended survey, compared with the email methodology leveraged in the 2020 Landscape Report. This year's survey response rate was higher than the previous report, with

**46 agencies responding to the survey compared with 34 agencies validating data in the 2020 report.**

Follow-up with agencies to validate basic data was a strength to ensure data accuracy to capture the full landscape across WIC State Agencies. Another strength of the study was that the order of some of the multiple-choice questions with several answer options were randomized in order to eliminate the risk that the order of response options was correlated with survey responses. Further, we conducted user testing with a state agency staff member in advance of the launch of this survey.

A limitation is that some of our non-respondents may have added additional technological tools which then would not be captured in this report. Another limitation is that, through the survey, we wanted to understand if there were differences in remote service delivery methods between certification or recertification appointments and ongoing nutrition and breastfeeding counseling appointments. The distinction between these two appointment

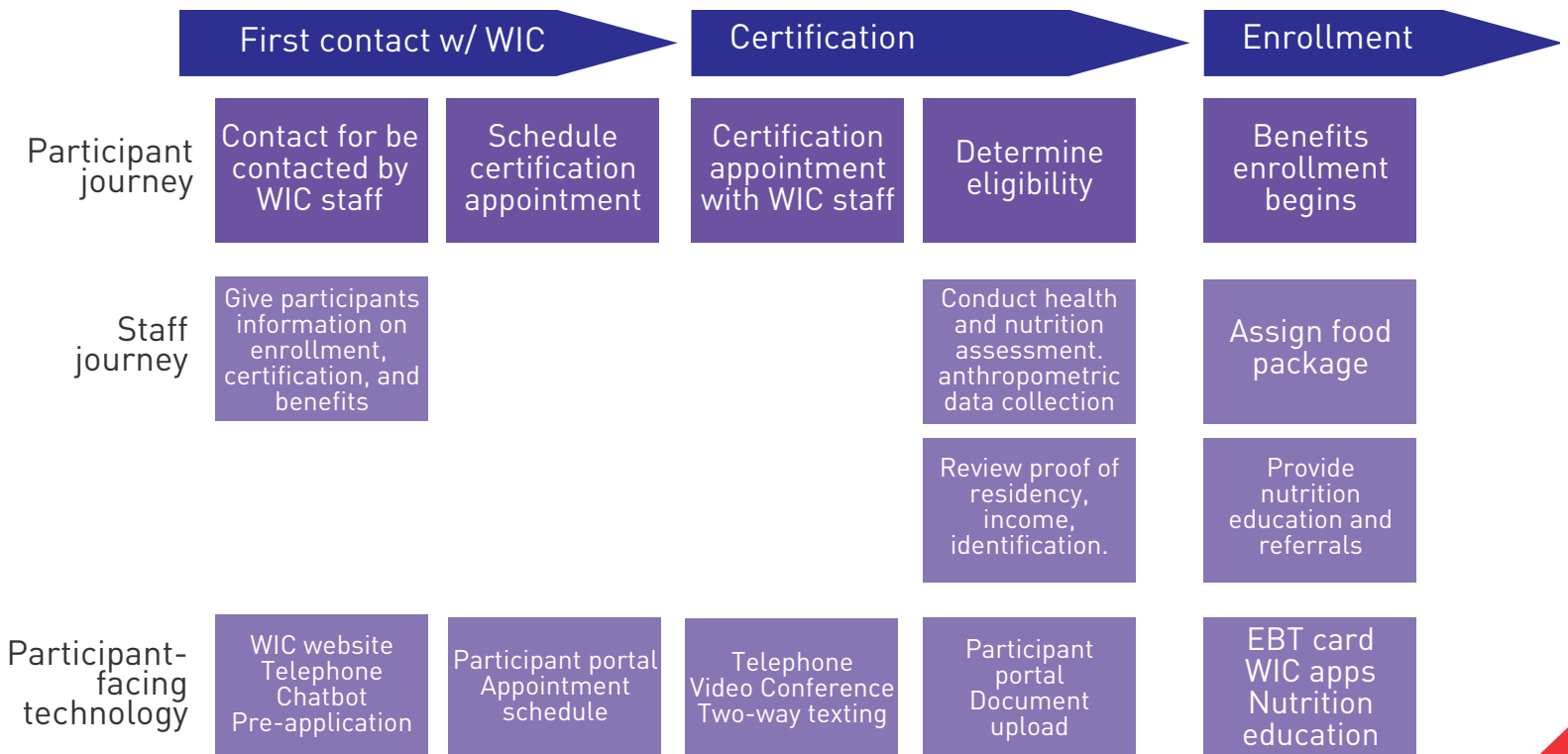
types may have video appointments more during remote nutrition and breastfeeding counseling type visits than for certification and recertification appointments, but it is possible that this finding may not accurately reflect the true differences in methods of remote service delivery between the appointment types.

## ▶ WIC Enrollment & Certification Tools

This section provides insight into the tools WIC agencies currently provide to participants that support WIC enrollment and certification and highlights the value of these tools to WIC families and WIC program operations.

An online enrollment and certification tool is any technology that enables or is required for WIC enrollment and certification. For this report, we've extended the definition of WIC enrollment and certification technology to not only include the six tools<sup>1</sup> detailed in the first report, but also technology that fuels outreach, certification requirements like appointments and nutrition education, and the management information systems (MIS) where WIC staff administer the service. With these additions, we can add context to the learnings for modernizing and increasing equity in WIC and consider further opportunities for innovation in the wider technology landscape. Figure 2 details how the certification process interacts with participant-facing technology.

**Figure 2: Certification Process Steps Alongside Participant-facing Technology**



<sup>1</sup>The previous report cataloged six tools: Online pre-app, Participant portal, Document uploader, Video conferencing, Two-way text communication, Automated chatbot

As differing language is often used for technological tools, we have detailed participant-facing technology in Table 3.

**Table 3: Technological Tools and Demonstrative User Stories**

| Tool*  | User story <sup>2</sup>  |
|--|--|
| WIC website  | As a WIC applicant or participant, I can find resources and information on the WIC program online, so I can take the next steps I need to take.  |
| Social media and outreach  | As a WIC applicant or participant, I can learn updates or gain awareness of WIC, so I can benefit from the WIC program.  |
| Online pre-application*<br><br>(Also referred to as Online Interest Forms, or Eligibility Screeners) | As a WIC applicant, I can enter some basic information and expect a call from a member of WIC staff to start the certification process, so I don't have to coordinate this all on my own.  |
| Chatbot*   | As a WIC applicant or participant or anyone interested in WIC, I can provide prompts and ask questions to get answers to common queries about the WIC program quickly and easily, without having to make a phone call.                                       |
| Participant portal*  | As a WIC applicant or participant, I can create an account (with a username and password) and log in to apply for WIC, update information about myself, complete nutrition education, and see my balance, etc., so I can more easily manage my WIC benefits. |
| Document upload*   | As an applicant or participant in WIC, I can securely submit documents (proof of income, etc.) to WIC staff by uploading a file or taking a photo of the document from the device of my choosing.  |

<sup>2</sup>A user story is a natural language description of a software feature from the perspective of a user. It's included here to provide context on how these certification tools are used by participants and/or staff.



|                                 |   |
|---------------------------------|---|
| Two-way text communication*     | As a WIC staff member, I can send personalized or automated text messages to WIC participants, and receive responses back.  |
| Appointment scheduling          | As a WIC participant, I can schedule and manage my WIC appointments online.   |
| Video conferencing              | As a WIC participant or WIC staff member, I can meet face-to-face from the comfort and safety of my home.   |
| Nutrition education tools       | As a WIC applicant, I can enter some basic information and expect a call from a member of WIC staff to start the certification process, so I don't have to coordinate this all on my own.   |
| Management Information Systems  | As a WIC staff member, I can perform tasks and record participant demographic, eligibility, appointment, nutrition education, health, and any other required program data to certify and enroll participants in WIC.  |
| Participant portal*             | As a WIC applicant or participant, I can create an account (with a username and password) and log in to apply for WIC, update information about myself, complete nutrition education, and see my balance, etc., so I can more easily manage my WIC benefits.                            |
| Integrated Benefits Application | As a WIC applicant, I can apply online for WIC and other benefit programs like Medicaid or SNAP using the same application and without having to enter the same information multiple times, so that I can quickly and easily access the benefits for which I meet eligibility criteria. |

\*Tools identified in the last report




## ▶ Continue to support WIC agencies' progress since the 2020 Landscape Report

The survey and interviews revealed that many state agencies have implemented and/or made progress on areas identified as recommendations in the last report. However, there are still some persisting barriers hindering their full implementation. We continue to stand by these 2020 recommendations in this 2023 report as strategies to contribute to achieving technology equity across states. In the next section, you'll hear additional nuanced recommendations, building upon the last report.

Our interviews and surveys informed the following visible progress scale to demonstrate what progress has been made and where we still need to focus attention. Table 4 depicts the level of progress we have made in each area of recommendation.

**Table 4: Level of Progress on 2020 Report Recommendations**

| 2020 Report Recommendation   | Level of Progress   |
|--|---|
| Widen implementation of proven participant-facing tools  |  |
| Evaluate in-person program requirements that give agencies more flexibility                                  |  |
| Evaluate existing funding models to find alternatives that give agencies more flexibility                    |  |
| Leverage modern software development practices like user-centered design, agile project management, and APIs |  |
| Strengthen the community of practice around technology by open and frequent engagement                       |  |
| Give participants user-centered choices for how they can participate in WIC                                  |  |

## Widen implementation of proven participant-facing tools

The last report found that certification and enrollment tools were not widely implemented, despite their reported positive feedback and outcomes. Two years later, implementation of pre-applications, document upload capabilities, and portals have increased. Additionally, 35 survey respondents reported taking on texting communication technology projects, 31 took on document upload projects, 23 reported taking on an online pre-application project, and 23 reported taking on an appointment scheduling project. While more states are using these and other tools, the majority of state agencies still are not reporting leveraging online tools for this phase of the WIC program.

**Table 5: Number of Agencies Using Select Certification and Enrollment Tools <sup>1</sup>**

| Tool  | 2020 Report | 2023 Report |
|---|-------------|-------------|
| Online pre-application form   | 24 agencies | 29 agencies |
| Participant portal  | 5 agencies  | 11 agencies |
| Document upload <sup>2</sup>  | 3 agencies  | 32 agencies |
| Multi-program online application for benefits (also known as "integrated benefits") | 3 agencies  | 4 agencies  |
| Appointment scheduler   | 3 agencies  | 6 agencies  |

## Evaluate in-person program requirements that give agencies more flexibility

Agencies continue to overwhelmingly agree that WIC should offer both in-person and remote services for participants and that agency operations have benefited from the COVID-era waivers remaining in place. Further, studies done within the past two years have shown the impact of relaxed in-person program requirements, showing that agencies, including

<sup>1</sup>This table represents the snapshot of tools currently in use - statewide - by WIC State Agencies at the end of March 2023. State Agencies that reported lack of statewide support but some local agencies providing these capabilities for participants, are not included in this data. When we validated data, several agencies reported that tools were in various developmental stages but were not live yet. Tools that were in development are not included in this table.

<sup>2</sup>This table includes State Agency self-reported data. Some agencies reported that participants were able to share documents electronically via email or text.

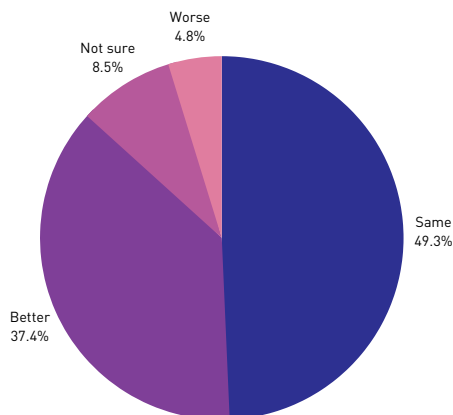
USDA, are evaluating those policies. The December 2021 USDA report found that "all, or nearly all, State agencies reported that the physical presence and remote benefit issuance waivers made WIC safer, more accessible, and more convenient for participants' schedules during the pandemic". Survey respondents shared additional benefits to remote (including video or telephone) services during the pandemic, such as increased retention of current participants, as detailed in Table 5. Similarly, this report's survey respondents perceived a number of participant-facing benefits from the waiver-enabled remote services they provided during the pandemic.

**Table 6: Benefits of Providing WIC Services as Reported by WIC Agency Staff**

|  | <b>Count</b><br>n=46 | <b>% of sample</b> |
|--|----------------------|--------------------|
| Increased participant satisfaction                   | 37                   | 80.43%             |
| Increased retention of current participants          | 31                   | 67.39%             |
| Reduced no-show rates                                | 29                   | 63.04%             |
| Increased enrollment of new participants             | 22                   | 47.83%             |
| Improved staff experience engaging with participants | 20                   | 43.48%             |

The results are consistent with NWA's 2021 Multi-state WIC Participant Satisfaction Survey, which surveyed over 26,000 WIC participants from 12 State Agencies. The vast majority (87.4%) of survey respondents reported that WIC services were the same or better quality than before the pandemic (see Figure 3).

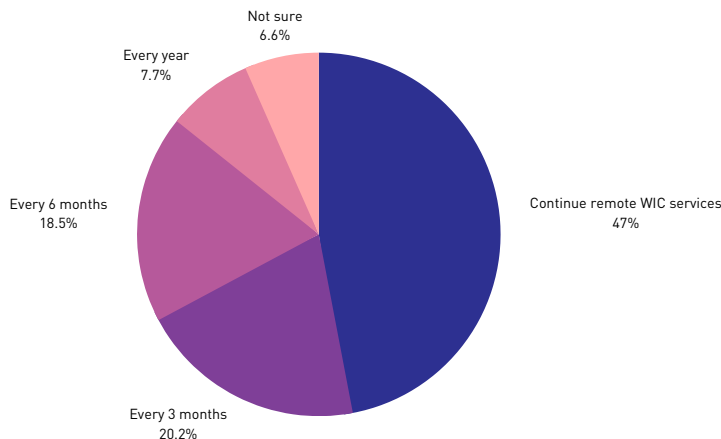
**Figure 3: WIC Participants' Perception of Quality of WIC Services During the Pandemic Compared to Pre-Pandemic**



\*Full Survey Question: During the pandemic, would you say the quality of WIC services was the same, better or worse than it was before the COVID pandemic? n=22844  
Results displayed only for those that participated in WIC before the pandemic.

The Multi-state Survey identified broad satisfaction with remote services (See Figure 4), including how more flexible service options addressed long-standing barriers like transportation, work schedules, and childcare. Notably, participants were evenly divided on whether they wanted to sustain fully remote services or return to some degree of in-person appointments.

**Figure 4: WIC Participants Preferred Frequency of Appointments**



\*Full Survey Question: Was it safe to go to WIC sites, how often would you like to go to WIC to receive services in-person? n=20978 (Question not asked of LA, NM, and OH WIC participants as offline WIC Cards must be loaded in-person approximately every 3 months.

Further, another study<sup>8</sup> of WIC participants' experiences with remote services during the pandemic found that participants reported a high level of satisfaction with the remote methods of WIC service delivery during their recertification process. "Among participants experiencing each method of service delivery, most reported high levels of satisfaction with phone appointments (96%), interactive texting (96%), online education (94%), email (93%), and video appointments (80%)." This study also found that while 75% of survey respondents still wanted some aspect of in-person services, 25% were comfortable with all remote WIC service delivery. This study, along with the additional findings from this report, continues to show evidence for the value of more flexible program requirements for WIC participants.

The National WIC Association endorses structural changes to WIC program rules that would allow for remote options – including phone and video appointments – to conduct certifications and recertifications. These changes should not come at the expense of essential health screenings. In the 117th Congress, a bipartisan group of legislators – led by Senators Kirsten Gillibrand (D-NY) and Roger Marshall (R-KS) and Representatives



Andy Levin (D-MI), Jaime Herrera Beutler (R-WA), and Lucille Roybal-Allard (D-CA) – introduced the MODERN WIC Act, which would allow for nutrition risk assessments and health screenings to be deferred for 90 days after a remote certification. This flexibility would allow participants to receive benefits and then complete health screenings either at a WIC clinic or in a healthcare setting, such as a doctor’s office.

The new waivers announced by FNS in February 2022 will allow for remote certification and recertification of participants while establishing a 60-day window for the collection of anthropometric data through at least September 30, 2026. This time frame will build a bridge toward the modernization of WIC services by building upon measures put in place during the COVID-19 pandemic.

### Evaluate existing funding models to find alternatives that give agencies more flexibility

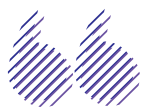


The 2020 Landscape Report outlined the limitations of MIS consortia. While the State Agency Model that established consortia was intended to reduce costs and increase efficiency, many states continue to report that this model has its challenges. It can be difficult to get new features prioritized because consortium states have equivalent voting power, regardless of caseloads or funds contributed. Self-described “smaller states” have expressed concern and uncertainty about their ability to fund their own technology development in the absence of FNS-provided funding.



The current consortium model hinders state-specific innovation and collaboration between consortium and non-consortium states because USDA has tied technology funding to consortia. However, the WIC Modernization Funds provide an influx of funding to WIC and an opportunity to experiment with alternatives to MIS consortia. For example, there is the option for states to pool funds both within and external to their consortium and pursue larger and therefore potentially more impactful technology

projects together. However, the logistics of pooling funds as a group have been challenging to navigate. USDA grant responses, which are necessary to secure funding, require quick response times and states already constrained by capacity are reluctant to lead efforts. Further, state agencies recognize the additional scope, reporting requirements, and therefore time commitment required of a lead state agency on top of the project activities put forth in the grant.



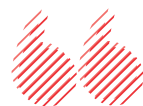
Partnering with Montana [on applying to the 2022 WIC Technology for a Better Experience grant], would have been a benefit to our state and theirs. Montana's leadership on the project would have allowed Missouri to be an active participant in the project for development and testing, despite not currently having the resources to take an active lead on the project. It would also mean that we could combine our funding to have a greater impact on the project. State approval processes can be a challenge for projects like this one with a two-year time limit. Not to mention that with limited staff and time, managing a contract and the funding can be demanding with competing priorities."

**- Jamie Bish, Data and Technology Manager, Missouri WIC**

## Leverage modern software development practices like user-centered design, agile project management, and APIs



In the years since the last report, some WIC agencies are practicing recommended software development practices. 22 out of 46 survey respondents reported they used agile software development processes in their recent technology projects.



"We learned that the agile project methodology is the key to success. The old waterfall process is antiquated. You meet with the technology vendor so they can gather the specs, and then over the course of 3 to 4 months they build out those requirements. However, when you reconnect with the vendor you discover that what they built was not what you wanted."

**- Curtis Bush, Texas WIC Director of Business Operations Unit**

More agencies are incorporating user-centered design into their practice as well. The State of Michigan shared that they conduct Business Process Analysis (BPA) sessions with local WIC staff in order to center technology projects on staff needs. Texas has prioritized collecting WIC participant input on the participant portal they've been developing using agile methodology by conducting "think alouds" with WIC participants prior to releasing new features. A third of survey respondents mentioned they conducted user research with participants, while less than a fifth conducted usability testing with participants. User research and usability testing with staff was more common, with over a half of survey respondents reporting the use of those techniques with staff (see Table 7).

**Table 7: Number of Survey Respondents Reporting Employing Human-Centered Design Techniques in Product Development (n=46)**

| Participants                          |   | Staff                                 |   |
|---------------------------------------|---|---------------------------------------|---|
| Conducting user research / interviews | Usability testing of the technology tools | Conducting user research / interviews | Usability testing of the technology tools |
| 15                                    | 8   | 28                                    | 25  |

When asked what areas state agencies wanted more resources for, the top three responses were: (1) interviewing and asking participants about the design of technology tools, (2) participating in agile software development and (3) usability testing with participants.

**Strengthen the community of practice around technology through open and frequent engagement**



The 2020 report identified existing forums, like NWA conferences, where state agencies could share technology learnings with each other. These conferences remain valuable resources. In addition, since the last report, NWA established the [WIC Technology Resource Group](#)<sup>9</sup> which has released [toolkits](#), conducted learning sessions, and held office hours to support WIC agencies in their technology implementations.

WIC agencies continue to desire this interagency sharing. When asked about what resources would be useful to identify or start technology projects, a majority of those interviewed wanted to know what other states have accomplished, what vendors they've worked with to do so, and their experiences and lessons learned from implementation.

**Give participants user-centered choices for how they can participate in WIC**



As discussed above, there has been some progress in widening the implementation of user-centered tools that enable web-based and in-person service delivery. The previous report explained that participants' experiences of the enrollment process vary depending on where they live and what investments their particular state agency has been able to make in supporting online/remote service delivery. Despite some progress, this technology inequity

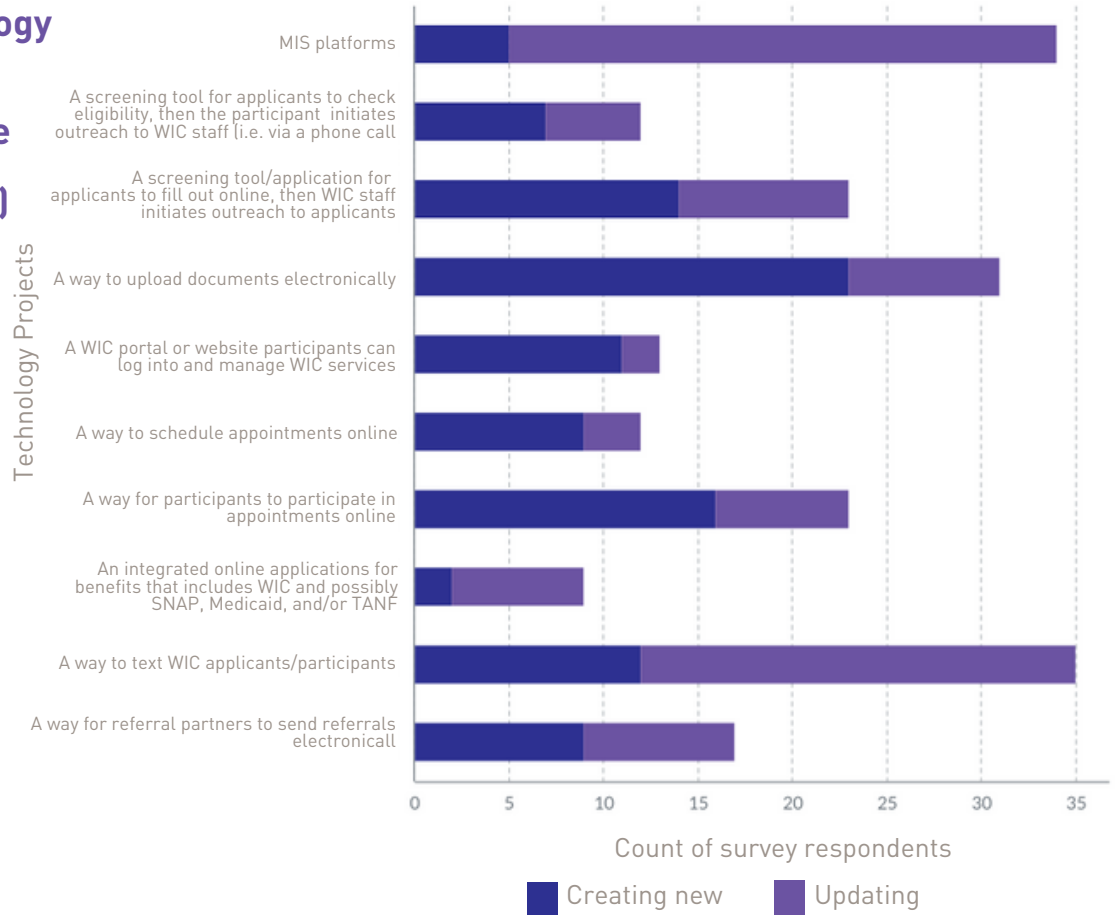


remains. States are engaging in a variety of technology projects to improve user experience, as noted in Figure 5. MIS systems were the most commonly reported updated tool, while document uploaders were the most commonly reported new tool.

"We learned that we need to meet participants where they are, and where they are is on that smart device."

- Berry Kelly, South Carolina State WIC Director

**Figure 5: Technology Projects that WIC Agency Survey Respondents Have Undertaken since March 2020 (n=46)**



## New Findings and Recommendations

These are our new findings and recommendations from this report's survey and interviews. These recommendations are primarily geared at the Food and Nutrition Service (FNS), the agency that administers WIC and an entity that is well-positioned to enact change. These recommendations may also be helpful to State and Local Agencies, who may be able to implement some of these recommendations within their state or consortium.

**Table 8: Findings and Recommendations to Improve Technologies and Enhance WIC Participants User Experience**

| Finding  | Recommendation(s)  |
|--|--|
| <p>There continues to be inequitable access to technology projects across WIC agencies.</p>  | <ul style="list-style-type: none"> <li>• Build shared federally hosted, developed, and/or managed tools that states have the option to opt into</li> </ul>   |
| <p>While telephone calls were more common for remote visits and appointments, agencies are interested in video and tele-health service delivery.</p> | <ul style="list-style-type: none"> <li>• Provide technical, user experience, and operational assistance for tele-health technology projects to increase level of innovation across all levels of capacity</li> <li>• Help agencies leverage opportunities from USDA and beyond to improve internet access</li> </ul>   |
| <p>WIC agencies want to continue offering flexible experiences for participants but struggled with health data collection.</p>                       | <ul style="list-style-type: none"> <li>• Fund projects that explore solutions for health data collection in a remote enrollment and certification environment; incentivize scaling solutions via policy, funding, or other means</li> <li>• Implement an API or other data transfer technology for health care providers to share anthropometric data with WIC agencies</li> </ul> |

|  |  |
|--|--|
| <p>WIC is not included in integrated benefits applications in most states.</p>                                   | <ul style="list-style-type: none"> <li>• Break down bureaucratic barriers with standard program-compliant data-sharing agreements</li> <li>• Provide funding and policy incentives to collaborate across state agencies</li> </ul>   |
| <p>Referrals are a core activity, but not a high technology priority due to lack of time and capacity.</p>       | <ul style="list-style-type: none"> <li>• Build pre-applications and other technology tools with both participants and referring partners in mind</li> </ul>  |
| <p>State agencies have worked hard to overcome many barriers to technology projects, but still need support.</p> | <ul style="list-style-type: none"> <li>• Provide and fund technical, user experience, and operational assistance from the federal level</li> <li>• Create a practice of product management and ownership at the state and federal level</li> <li>• Create a catalog/resource of MIS and other technology tools with reviews, assessments of user experience, accessibility, and specifications to support WIC agencies in the planning, implementation, and maintenance of technology and modernization projects</li> <li>• Reduce grant complexity and reporting requirements; provide more grant submission support, and increase length of time to respond to grants</li> </ul> |

States' MIS platforms have the ability to enhance or severely limit WIC modernization. Manual data transfer between tools and MIS is the norm for most state agencies.

- Support an API standard across WIC to enable data sharing among tools and unlock participant-facing innovation that meets state and participant needs
- Modernize MIS platforms in parallel to participant-facing modernization
- Experiment with and implement new ways for state collaboration on MIS and other technology development beyond the consortium model

## Strategically support equitable access to technology projects across WIC



**Finding:** There continues to be inequitable access to technology projects across WIC agencies.



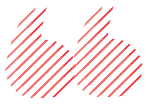
**Recommendation:** Build shared federally hosted tools that states have the option to opt into. Examples include: cloud services and hosting, pre-application form.

In the 2020 report, we highlighted the challenge for some states, especially those with lower capacity, in a consortium to be heard or prioritized. Without funding, leadership, or enough participant reach to be prioritized, some state agencies' needs for MIS modernization or other enhancements are postponed. However, this is not the only technology inequity identified in the WIC program via these assessments.

During interviews with WIC agencies, it became clear that some states faced higher barriers to implementing innovative participant-facing tools than others. For example, states that are considered "offline," meaning they still store WIC benefit balance on a physical card that requires physical upload of benefits, suffered the most during the pandemic. For offline states, their technological priority is implementing remote and automatic benefit issuance. Some states had to prioritize keeping up with regulatory and policy changes—such as the extension of the increase in the Cash-Value Voucher/Benefit<sup>10</sup>—in their MIS over other upgrades that could modernize their performance. Further, MIS upgrade projects like converting them to be web-based take significant resources and staff from other WIC projects.

Based on survey and interview data, some states need to prioritize these projects over the modernization of enrollment and certification digital services for the participant experience. Meanwhile, states with more funding, easier-to-update MIS platforms, and that have already transitioned to online issuance of benefits have higher access to and bandwidth for implementing participant-facing digital tools.

There is an opportunity for FNS to take some technology project load off of the states, such as taking the lead on building or supporting shared federally hosted tools that states have the option to opt into. Since 2020, 23 of the 46 state agencies surveyed created or updated pre-applications that participants could submit followed by a conversation with WIC staff for next steps. Each of those 23 projects uses FNS funding, resources, and staff time that could be greatly reduced and more efficiently deployed if FNS led a project like this that could serve a larger scale of states, perhaps even larger than today's consortiums. This would have an especially favorable impact on smaller states that struggle the most with capacity and funding constraints to take on technology projects.



"Technology is not always easier, cheaper, or more functional. It can create challenges for small states in particular because we may not have the resources or depth of knowledge. There should be some consideration for smaller states and what's asked of them. Technology projects need to be shared to minimize the burden for smaller states."

- Tina Fearneyhough, Wyoming WIC Director

## Accelerate scaling video and tele-health service delivery



**Finding:** While telephone calls were more common for remote visits and appointments, agencies are interested in video and tele-health service delivery.



### Recommendations

- Provide technical, user experience, and operational assistance for tele-health technology projects to increase level of innovation across all levels of capacity
- Help agencies leverage opportunities from USDA and beyond to improve internet access, supporting both WIC agencies and participants in the journey to advance technological solutions that strengthen the program

Our research found that telephone appointments were more common for WIC participants than video conference appointments, with most agencies sharing that participants and staff preferred the phone to video. In addition to preference, agencies reported poor internet access, lack of video conferencing tools, and lack of WIC staff capacity, especially when resources were strained during the pandemic.

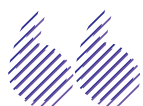
**Table 9: Types of Appointments Offered by WIC Agency Survey Respondents in 2022 (n=46)**

|           | We currently offer this type of visit. | We offered this type of visit at some point during the pandemic (since March 2020), but do not currently offer it. | We have not offered this type of visit at any point during the pandemic (since March 2020) |
|-----------|--|--|--|
| Telephone | 45                                     | 1  | 0  |
| Video     | 32                                     | 2  | 12   |

The agencies interviewed that provided video appointments overcame barriers by providing training to staff, stitching grants and other funding together, or implementing MIS enhancements and addressing security requirements to enable video conferencing. Our research indicates there is widespread interest across the community in enabling more video appointments. One WIC agency we interviewed shared enabling video appointments was a quality improvement project and two WIC agencies noted having USDA-funded telehealth projects<sup>11</sup> with Tufts University for high-risk participants in progress. FNS has an opportunity to provide technical, user experience, and operational assistance for telehealth technology projects in particular to accelerate this possible service offering and advance better access to technology among WIC participants—which is also key to advancing equity.



In addition, multiple agencies remarked that internet access and broadband speed were challenging barriers during the pandemic. In October 2022, the USDA Secretary announced<sup>12</sup> that the Department is funding high-speed internet projects for people living and working across 24 states, Puerto Rico, Guam and Palau. USDA's Rural Development office that has already made grant funding available to 49 entities across U.S. states, territories, and ITOs. There is an opportunity for FNS to work with other USDA entities around program technology modernization needs. It could also support WIC state agencies in achieving the funding and support they need for these internet access projects.



"To improve digital equity we need to ensure people have easier access to the internet. Rural areas continue to struggle with accessing the internet."

**- Melanie Murakami, Hawaii State WIC Director**

## Find ways to collect anthropometric data in a virtual environment



**Finding:** WIC agencies want to continue offering flexible experiences for participants but struggled with health data collection.



### Recommendations

- Fund projects that explore solutions for health data collection in a remote enrollment and certification environment; incentivize scaling solutions via policy, funding, or other means.
- Implement an API or other data transfer technology for health care providers to share anthropometric data with WIC agencies

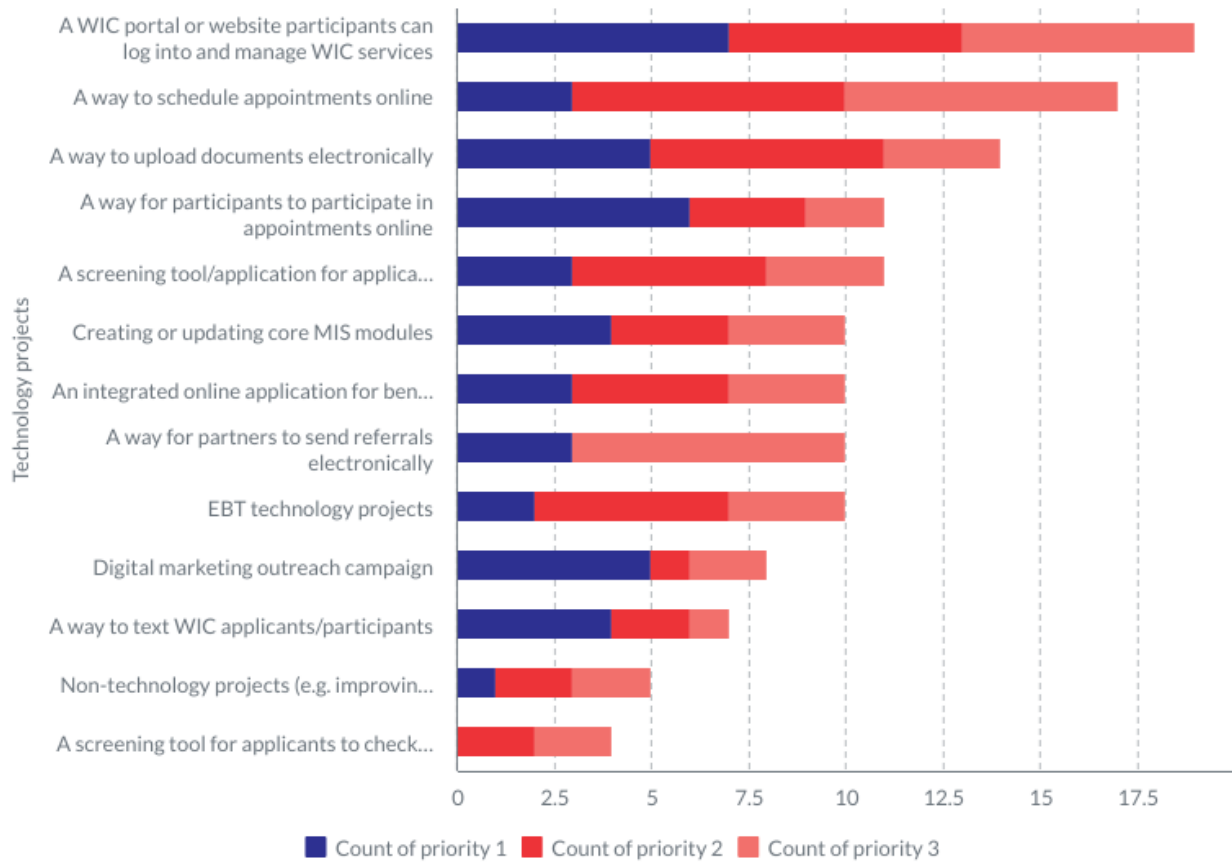
Overwhelmingly, survey respondents and interviewees remarked that they realized the need to adapt service delivery to meet participants' needs during the pandemic. WIC agencies plan to continue to offer this flexibility as long as the waivers are in place. When asked about how they'd change the current certification and enrollment process, agencies recommended continuing to offer a mix of in-person and remote services. They're eager to serve a population that they know is technologically savvy and has been used to remote services for the past few years of the pandemic. During their interview, South Carolina shared that they recently conducted a 633 participant survey, with 70% of those surveyed sharing that they preferred to receive WIC services remotely.



Survey respondents were asked how they would prioritize various technology projects and ranked tools that augmented the participant's digital WIC experience. As noted in Figure 7, the highest-ranked project was a participant portal, followed by an online appointment scheduler and then a document uploader.



**Figure 6: State Agencies Prioritization of Technological Projects (n=46)**



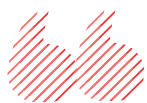
While this hybrid model of both in-person and online service delivery is appealing and more flexible for participants and staff, it also makes it difficult to collect some health data from participants. Physical presence waivers<sup>13</sup> not only enabled remote enrollment and re-enrollment, but also approved the deferral of certain anthropometric (i.e., height/length and weight) and bloodwork requirements used to determine nutritional risk. WIC is still a public health program, and the majority of WIC agencies interviewed shared that it was a challenge to collect anthropometric and nutrition data during the pandemic. This means that health monitoring throughout the past few years has been limited, despite it being a significant part of the program. Anthropometric data allows WIC and FNS to target nutrition counseling, measure health outcomes over time, and ensure near and long-term program impact for participants.



In 2023, NWA will pilot projects to test systems improvements and enhance data sharing between health providers and WIC programs. These pilots are made possible through the support of the Kaiser Permanente National Community Benefit Fund at the East Bay Community Foundation.

A variety of other State-driven innovations are underway, such as hiring medical liaisons to transmit data from healthcare providers to WIC. USDA should provide more robust technical assistance to support these efforts, including specifying the relationship between WIC confidentiality standards and the Health Insurance Portability and

Accountability Act (HIPAA), which does not apply to WIC as WIC providers are not a “covered entity” under the law. Providing guidance to states on how to best share data to coordinate care and reduce administrative burden.



“Early on, offering the option for completing the certification over the phone was much needed and very necessary. But that came with the con that we were no longer able to collect the valuable anthropometric or bloodwork data or see infants and children during mid-certification visits. But I think it was something that had to be done, to continue serving our WIC clients during the pandemic.”

**- Bagya Kodur, Data & Systems Manager**

WIC agencies were mostly able to adjust to online or telephone visits, appointments, and remote benefit issuance, but the next challenge is collecting participant health data. How might WIC agencies experiment with appointment designs that support online and in-person experiences? There's an opportunity to incentivize and fund projects that allow state

agencies to experiment with additional ways to support WIC participants with remote services. For example, one agency shared a pilot project to test out online certifications and recertifications, with a quick in-person visit solely for anthropometric data collection. Even more convenient for participants would be the implementation of an API or other data transfer technology for health care providers to share anthropometric data with WIC agencies. This would allow agencies a viable alternative to accomplish the health monitoring aspect of the program and reduce in-person appointments for WIC participants.

## Incentivize state integrated benefits applications and processes to include WIC



**Finding:** WIC is not included in integrated benefits applications in most states.



### Recommendations

- Break down bureaucratic barriers with standard program-compliant data-sharing agreements
- Provide funding and policy incentives to collaborate across state agencies

Similar to the [last report](#)<sup>14</sup>, very few—only 4—WIC agencies report having an enrollment process that's integrated with other public benefit enrollment processes, like SNAP, Medicaid, and TANF. In this case, "integrated" means that an applicant can answer eligibility and enrollment questions for multiple benefits programs at once. Though some agencies reported integrated benefits applications in their states for multiple programs—for example, SNAP and Medicaid—it was common that WIC was not included despite its desire to be.



For example, one WIC agency noted that they reached out to their partner agency to join their project integrating Medicaid and SNAP benefits. The agency shared that WIC could contribute funding toward integrating benefits because of the recent \$350K WIC Technology for a Better WIC Experience grant<sup>15</sup>. However, their partner agency said that including WIC in their integrated

benefits project would inflate the project scope and require a contract amendment with the vendor. Ultimately, the partner agency was not willing to spend the time and resources to pursue integrating WIC into the enrollment process.

When enrollment processes aren't integrated, we found that one public benefit application might still include a link to the WIC website or a state's pre-application, which participants submit in order for WIC staff to do outreach. Even more common are programs like SNAP or Medicaid sharing enrollment data with WIC to check for adjunctive eligibility or conduct outreach to those potential participants. And while many agencies interviewed noted that they shared some data between Medicaid and/or SNAP and/or TANF, most of these processes require manual data transfer or data lookups in other systems, which is burdensome to agency staff. Despite this burden, a study<sup>16</sup> from the Center on Budget and Policy Priorities found that this type of matching data across these programs can increase WIC enrollment, and therefore increase access to WIC services that promote health outcomes.

In states where health services and social services are in different departments, organizational structure was cited as a barrier to integration. Additional barriers include the lack of data sharing agreements or data sharing concerns between agencies, prioritization or scope barriers, cost barriers to fund or staff these projects, and perception that other benefits agencies don't view integrating with WIC as a priority.

There is an opportunity to incentivize state integrated benefits applications to include WIC by targeting systems' levers at the state and federal levels. FNS could provide federal funding and policy incentives to collaborate across state agencies. For example, a federal memorandum of understanding between WIC, Medicaid, and SNAP could pave the way for state agency collaboration.

Another recommendation is for FNS to break down bureaucratic barriers with vetted data-sharing agreements that already comply with WIC and other program requirements. FNS could build off of or even endorse the data sharing agreement<sup>17</sup> established between Virginia's



Department of Health (which administers WIC) and the Department of Social Services (which administers Medicaid, the Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, and Foster Care programs) alongside the nonprofit Benefits Data Trust for a pilot text-based outreach program. One agency interviewed shared that they were able to develop a data sharing agreement with their health information network within about a week, but it took months to finish the legal approval process. An established, a program-compliant agreement would allow states to accomplish technology projects more quickly, and WIC participants and staff could benefit from the associated positive outcomes sooner.

It should be noted that WIC agencies interviewed also highlighted the unique characteristics of WIC compared to other benefits programs. Unlike SNAP, WIC participants can only use their cash benefits for certain foods within their assigned food package in order to support the particular development and health needs of the WIC population. While the hypothesis is that integrating applications across programs would improve staff and participant experiences by reducing burden, there is also an opportunity to involve the WIC community in identifying how best to include WIC in an integrated benefits enrollment process.

### Prepare for future referrals priorities now



**Finding:** Referrals are often a key outreach activity, but not a high technology priority due to lack of time and capacity.



**Recommendation:** Build pre-applications and other technology tools with both participants and referring partners in mind

Referrals are a key outreach strategy for many WIC programs—a majority of survey respondents reported using a physical or digital referral tool. Over 60% of state agencies surveyed reported using paper or other physical referral forms, but only 17% reported using an online referral or screening tool that non-WIC staff can use to refer applications to a WIC clinic.

**Table 10: The Role of Technology in Referrals to WIC (n=46)**

| Technology  | Count of survey respondents<br>(n = 46) |
|---|---|
| Paper or other physical referral form   | 29                                      |
| Online referral or screening tool that non-WIC staff can use to refer applicants to WIC clinics | 8                                       |

Additionally, only 10 of 46 agencies listed enabling electronic referrals to WIC in their top three technology priorities. Our interviews revealed that some agencies were prioritizing core technology projects like moving the state's benefit issuance system and processes to be fully online. Other WIC agencies did not prioritize electronic referrals because recruitment was not a current state-identified need. One agency, for example, saw its caseload increase over the past few years and therefore are less concerned with initiating new recruiting efforts.



In addition to enabling data sharing and collaboration among benefits programs, another way to prepare for referral priorities is to consider referral partner needs on participant-facing and other technology projects because there could be lightweight opportunities to include the referral use case in the scope. For example, Oregon has an interest form<sup>18</sup> on its WIC website that is designed for both prospective applicants and referral partners. By coupling applicants and referring partner users, WIC agencies can reduce the time and financial costs of developing and maintaining pre-applications and forms for a range of different use cases.

## Support WIC agencies in successful technology projects, leveraging the influx of technology funding



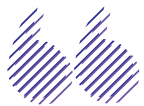
**Finding:** State agencies have worked hard to overcome many barriers to technology projects, but still need support



### Recommendations

- Provide and fund technical, user experience, and operational assistance from the federal level
- Create a practice of product management and ownership at the state and federal level
- Create a catalog/resource of MIS platforms and other tools with reviews, assessments of user experience and accessibility, and specifications to support WIC agencies in the planning, implementation, and maintenance of technology and modernization projects
- Reduce grant complexity and reporting requirements, provide more grant submission support, and increase length of time to respond to grants

Similar to the 2020 report, this report found that WIC agencies encounter challenges with staffing, acquiring, leading, supporting, and funding technology projects. Most state agency representatives interviewed said that technology projects are time consuming and difficult for which to find staff capacity. They also encounter competing priorities for funding, internal process and approval complexity, and a lack of technical expertise. And many state WIC agencies that self-describe as lower capacity have multiple staff members splitting their time between managing WIC technology and fulfilling their public health and nutrition duties. For example, a nutrition coordinator may also serve as the point person for a texting platform or another quality improvement project.



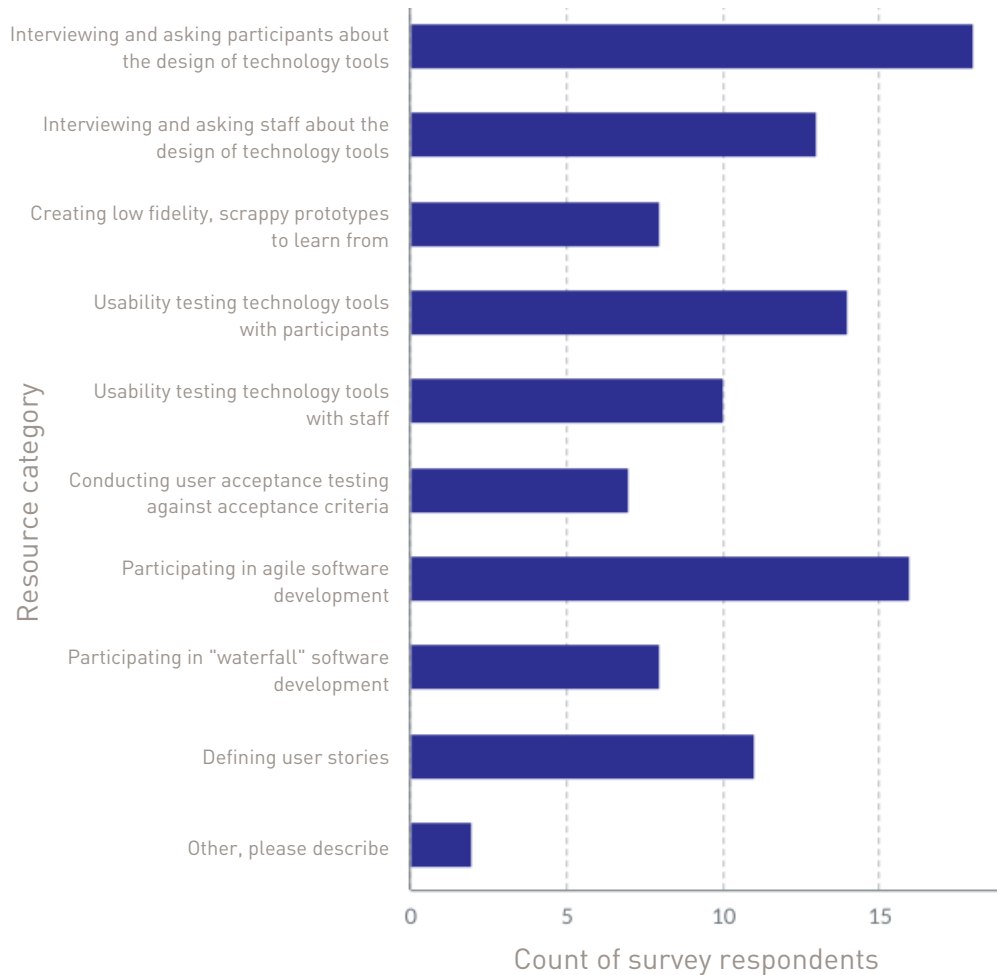
"WIC staff need to be WIC experts, not technology experts. But if we're [adding] all these systems—texting, EBT, WIC Shopper, etc.— then we need to be funded and supported to build this expertise for our program."

**- Heidi Hoffman, Colorado State WIC Director**



FNS has an opportunity to empower state leaders to undertake technology projects, beyond providing funding. FNS could fill skills and expertise gaps at the state level from the federal level. When surveyed, WIC agency respondents listed a variety of technology related topics that they'd like more resources on, ranging from agile software and human-centered design techniques like user research with participants and staff to creating prototypes and conducting usability testing [See Figure 7]. These desires can inform FNS' priorities in supporting WIC agencies. And while we mentioned the progress on providing resources to the WIC community through platforms like the [WIC Technology Resource Group](#)<sup>19</sup> and National WIC Association [conferences](#)<sup>20</sup>, there could be even higher uptake with additional resources and leadership through WIC's parent agency.

**Figure 7:  
Technology  
Topics of  
Interest as  
Reported by  
State Agency  
Staff (n=46)**



When interviewed, WIC agencies wanted a way to see other agencies' technological progress and projects. They mentioned wanting technical resources to refer to as they're planning, building, and procuring new technology. Multiple agencies suggested creating a catalog or resource of MIS and other tools that would help them decide what vendor or tool to pursue. Such a catalog might list which agencies have implemented participant portals and with what vendors, what successes, what integration capabilities, what challenges, and what lessons learned. One agency representative referred to this potential solution as "an encyclopedia of what's being utilized and modernized in WIC." Previously, the "WIC Technology Partners" website, administered by FNS, compiled MIS and EBT project data and reference documents as a resource for state agencies. FNS has an opportunity to create a new version. This type of resource could also help FNS and WIC agencies make



more collaborative and efficient use of shared vendors, which is quite common across WIC.

WIC agencies not only could benefit from tapping into shared resources and educational opportunities, but also from FNS building capacity both at the State Agency level and from central support from FNS. This is where product management and the Product Owner role fit in—FNS could fund product owners in states and/or serve the role themselves for certain projects. Luckily, forward-thinking government agencies have been sharing justifications for the importance of product management in government over the past decade. These roles must be developed in consultation with State Agencies to ensure the model supports agencies current needs and does not duplicate efforts.

WIC agencies report that it would be helpful if they had someone like a product manager on staff to bridge the gap between local agency staff and technology. This person could translate user needs into software and other requirements<sup>21</sup> that when implemented, achieve user and program outcomes.

"Product managers ensure the government's mission is supported by the technology; ownership of the product vision, roadmap, and strategy should never be outsourced to a vendor. In an environment where a lot of technology work is done by outside vendors, in-house product managers help vendor teams understand the big picture and drive day-to-day trade-offs. Without someone managing both the strategy and execution, software development all too quickly turns into a game of telephone."

**Excerpt from 18F's Building product management capacity in government, part 1<sup>22</sup>**

Product management thinking is about solving user problems. It ensures that teams are building the right product at the right time to best serve users and achieve program outcomes.<sup>23</sup> Once product teams identify user needs, they iteratively design and build solutions to meet those needs, then release products/prototypes to validate whether those

solutions provide a successful outcome. Product managers, often formalized as "Product Owners", are the people on product teams that take the lead in defining the problem and why solving it is important for the program's mission. They determine priorities among a variety of unmet needs and partner with vendors and other disciplines to implement and measure results. This enables future iterations to continually serve user needs.

There are a variety of opportunities to solve problems in WIC outlined in this report, and product leadership from the federal level could accelerate solving those problems while introducing efficiency. We recommend that FNS think through WIC technology holistically from the federal level, outlining a vision for modernization and innovation and developing a team of FNS product owners that can lead and help WIC agencies realize that vision.



Resources already exist that could support FNS in developing this capability. FNS could potentially leverage resources from 18F (the technology and design office within the General Services Administration) resources on how to develop product leadership capacity, or hiring and training processes from agencies that have brought product management expertise in house.<sup>24</sup>

Centralized support could also help WIC state agencies respond to USDA and other grants for projects. One agency explained that the same four employees work on projects and respond to the grants, which is challenging for staff. And while there are opportunities for states to collaborate on grant submissions, many agencies hesitate to be the "lead state agency" for a project given the reporting requirements and project management capacity required. FNS could experiment with a new way for states to collaborate, perhaps providing the role as "lead state agency" with an empowered product manager driving the product vision and strategy. In addition, FNS could reduce grant complexity and reporting requirements, provide more notice and transparency into the grant process, and increase the length of time WIC agencies have to respond to grants.

## Establish an API standard policy to support WIC technology



**Finding:** States' MIS have the ability to enhance or severely limit WIC participant-facing modernization. Manual data transfer between tools and MIS is the norm for most state agencies



### Recommendations

- Support an API standard across WIC, enable data sharing among tools, and unlock participant-facing innovation that meets state and participant needs
- Modernize MIS platforms in parallel to participant-facing modernization
- Experiment with and implement new ways for state collaboration on MIS and other technology development beyond the consortium model

States interviewed for this report shared similar experiences with their Management Information Systems (MIS) to the last report, leading us to double down on our recommendation for strategic technology and MIS modernization to accelerate positive program outcomes. MIS platforms benefit states because they have comprehensive functionality<sup>25</sup> that ensures that their agencies are compliant with established policies. MIS platforms include a variety of functions, such as a clinic module to manage participant certifications and benefits, and a vendor module that enables WIC agencies to manage partner grocery and other stores. Importantly, MIS platforms serve as their program's data repository for reporting and other needs. At the same time, many respondents shared that their MIS platforms were about a decade old and difficult to keep updated. Akin to the last report, some consortium states noted that issues can be hard to diagnose because states could have varying implementations of the particular MIS. Other consortium states shared they may take functionality from another member of their consortium, but may have to adapt it. Even when states do update their MIS, updates can take a long time because MIS functionality is complex and interconnected.



Many states continue to struggle to integrate or share data between their MIS and other tools. As found in the [last report](#)<sup>14</sup>, manual data transfer between tools and MIS is still the norm for most state agencies. Some report having to print and scan documents as the only way to upload that data into their MIS. While a vendor's MIS platform may be built in a modular and flexible way, WIC applicants and WIC agencies generally interact with it as if it

were a closed system. They do not get access to the inner workings of the MIS system, only the functionality for which they signed up. And, as highlighted previously, there are opportunities for even more data transfer—such as health data and integrating benefits—to enable innovation for the program.

These findings are consistent with our findings from interviews with agencies for the [last report](#)<sup>14</sup>, when we found that agencies wishing to modernize the participant experience had to choose between implementing direct extensions of their MIS platforms and building standalone tools that often require manual data transfer to the MIS, despite there being a third option that can make innovations more accessible for WIC agencies.


**Table 11: Chart from the 2020 Landscape Report Describing the Approaches WIC Agencies Could Take to Add Participant-Facing Tools.**

| Approach                       | Benefits  | Challenges  |
|--------------------------------|---|---|
| 1. Direct extension of the MIS | <ul style="list-style-type: none"> <li>• Integrated services (e.g. direct connection to MIS)</li> <li>• Can be executed by existing vendor</li> </ul> | <ul style="list-style-type: none"> <li>• Existing MIS architecture dictates workflow and user experience</li> <li>• High upfront investment of resources and time</li> <li>• Difficult to implement under a Consortium model</li> </ul> |
| 1. Stand-alone tools           | <ul style="list-style-type: none"> <li>• Not constrained by MIS configuration</li> </ul>  | <ul style="list-style-type: none"> <li>• Requires manual workarounds for clinic and agency staff</li> <li>• Fragmented participant experience</li> </ul>  |

|   |  |   |
|---|--|---|
| <p>3. Modular tools integrated by API</p> | <ul style="list-style-type: none"> <li>• Integration with MIS in low risk, MIS-agnostic way</li> <li>• Enables small and fast development of tailored tool</li> <li>• Not constrained by MIS consortium or funding models</li> <li>• Improved operational efficiency</li> <li>• Improved and consistent participant experience</li> <li>• Can adapt over time and across agencies</li> </ul> | <ul style="list-style-type: none"> <li>• Requires strong ownership from State agency</li> <li>• Requires development of MIS API endpoint</li> </ul> |
|---|--|---|

State agencies are pointing out the need for interconnectedness too. As previously mentioned, interviewees want to understand a tool's interoperability with their MIS before beginning a project. One state brought up USDA's Prescreening Tool and wondered if it was going to be updated or replaced, and whether it would be able to interface with MIS platforms.

They also expressed concern over the long-term costs required to keep their MIS updated, and recognized that the current grant funding style may not be stable enough for such an important information system. We continue to recommend that existing funding models are evaluated and to experiment with alternatives that give agencies more flexibility.



"We can't hop from grant to grant to grant for a system that is a backbone of our program."

**- Heidi Hoffman, Colorado State WIC Director**



In addition, FNS has an opportunity to support an API standard to codify data transfer between MIS and other WIC tools. An API, or "Application Programming Interface" is a technical term for a way that one computer system can talk to another. An API standard is

a shared, well-defined format for accessing and interacting with data. With this standard, WIC tools like MIS would be required to build the functionality that adheres to the defined standard, rather than define their own unique implementations, which currently makes it difficult to share technology tools across states. And, other tools, like Electronic Health Records (EHRs) could leverage a standard API to share anthropometric data with WIC. An API standard and defined data transfer protocols could help promote equity of access to modernization and innovation, reduce costs of bringing tools to production in different states, and reduce the burdens of having multiple, stand-alone tools that don't interact with each other.



Other entities also see this opportunity. In their response<sup>26</sup> to FNS' Request for Information: Center for WIC Modernization and Delivery (86 FR 61752)<sup>27</sup>, American Public Human Services Association highlighted two ways to increase WIC participation through adjunctive eligibility that could be enabled and governed by an API standard. The first is creating APIs that automate WIC referrals from new SNAP, Medicaid, or TANF applications. The second is using tech and data solutions to automate adjunctive eligibility checks and reduce participants' burden of providing documentation.

Overall, an API standard in WIC could enable states and WIC agencies to share tools (which also reduces costs); enable quicker implementations (and therefore quicker impact for WIC participants and staff); reduce states' reliance on consortium negotiation and decision-making; and enable states to implement tools that reduce participant and staff burden so they can focus on the participant's health and WIC program mission.

## Conclusion

Over the past two years, WIC agencies have continued to face the challenges brought about by the COVID-19 pandemic. A largely in-person service delivery model had to shift and offer online experiences, facilitated by flexible policies<sup>28</sup> and state technology investments. These levers enabled positive change, including increased participant and staff satisfaction, as well as increased participation in the WIC program. There is a unique opportunity for support and investment to transform the program over the long-term. In particular, the WIC Modernization Fund makes \$390 million available from FY 2021 through FY 2024 for the WIC and WIC Farmers' Market Nutrition Program, and USDA has already begun issuing grants<sup>29</sup> that state agencies can apply for to carry out projects that support program innovation and operations.

WIC agencies have offered flexible services and have ideas and visions for continuing to improve the WIC program for participants, but strategic federal investment could multiply and catalyze their efforts. In contrast to today's reality where WIC's systemic issues are tackled grant by grant, project by project, consortium by consortium, or state by state, federal and other centrally-coordinated expertise, policies, resources, funding and leadership could make WIC technology more equitable, effective, and efficient, facilitating positive participant outcomes.

## Appendix

### Survey

#### Survey responder information

- Name
- State or agency
- Email

#### Updating report information

Please reference the email sent to you with this survey for this question. It contains the information we have on file from the last technology landscape report, conducted in 2020.

Please select all the below that were correct: (multi-select)

- Correct MIS system? y/n
- Correct MIS vendor? y/n
- Correct MIS consortium? y/n
- A way for applicants/participants to apply for WIC online in order to be contacted by staff y/n
- A way to upload documents electronically y/n
- A WIC portal/website participants can log into and apply for/enroll in WIC
- A way to schedule appointments online y/n
- An integrated online application for benefits that includes WIC y/n

If no for any of these:

You indicated that one or more of the aspects of your technology systems have changed.

Please provide updated information below. (short answer)

Do you provide the option for remote visits? (multi-select)

Definition: Remote visits are when currently enrolled participants can join any appointment (e.g. nutrition counseling, breastfeeding counseling) with WIC staff without being physically located in a WIC office.



|                   | We offered this type of visit at some point during the pandemic (since March 2020), but do not currently offer it. | We currently offer this type of visit. | We have not offered this type of visit at any point during the pandemic (since March 2020) |
|-------------------|--|--|--|
| Telephone visits  | ●  | ●                                      | ●  |
| Video call visits | ●  | ●                                      | ●  |

Do you provide the option for remote certification and/or recertification appointments?  
(single-select)

Definition: Remote certification/recertification appointments are when participants can join cert/recert appointments with WIC staff without being physically located in a WIC office.

|                         | We offered this type of visit at some point during the pandemic (since March 2020), but do not currently offer it. | We currently offer this type of visit. | We have not offered this type of visit at any point during the pandemic (since March 2020) |
|-------------------------|--|--|--|
| Telephone appointments  | ●  | ●                                      | ●  |
| Video call appointments | ●  | ●                                      | ●  |

### Learnings from operating through the pandemic

What were the benefits you perceived of providing remote WIC services during the (ongoing) pandemic? Please select all that apply. If you have data to back up your perceptions, please share via email to [lauren@navapbc.com](mailto:lauren@navapbc.com). (multi-select, randomized order for options)

- Increased new participation
- Increased retention
- Increased participant satisfaction
- Reduced no-show rates
- Improved staff experience of engaging with participants
- Other, please describe:

What are the top two barriers you faced trying to provide video call visits, during the first years of the pandemic (March 2020 through December 2021)? Please select all that apply. We're interested in learning barriers whether you were successful or unsuccessful in offering video call visits/appointments. (multi-select)

- Lack of WIC staff capacity
- Funding constraints
- Lack of inter-state learning
- State bureaucracy for approvals
- Other, please describe:
- We did not encounter any barriers
- We did not attempt to offer video call visits

If selected barriers:

Have you addressed those barriers? (single-select)

- Yes
- Somewhat
- No

How, if at all, have you addressed those barriers? Please describe. (short answer, not required)

(Logic:

- If user selects "did not encounter barriers" or "did not attempt", skip "how have you addressed those barriers" question
- If yes to "have you addressed those barriers", skip "how have you addressed those barriers" question)

## WIC technology projects

What, if any, new technology projects have you undertaken since March 2020? (multi-select, matrix. Column order was randomized for 'Creating New' and 'Updating', while NA was fixed position)

| Creating new   | Updating   | N/A-Did not do   |
|--|--|--|
| <ul style="list-style-type: none"> <li>• MIS systems</li> <li>• A screening tool for applicants to check eligibility, then the participant initiates outreach to WIC staff (i.e. via a phone call)</li> <li>• A screening tool/application for applicants to fill out online, then WIC staff initiates outreach to applicants</li> <li>• A way to upload documents electronically</li> <li>• A WIC portal or website participants can log into and manage WIC services</li> <li>• A way to schedule appointments online</li> <li>• A way for participants to participate in appointments online</li> <li>• An integrated online application for benefits that includes WIC and possibly SNAP, Medicaid, and/or TANF</li> <li>• A way to text WIC applicants/participants</li> <li>• A way for referral partners to send referrals electronically</li> <li>• None</li> <li>• Other - please describe</li> </ul> | <ul style="list-style-type: none"> <li>• MIS systems</li> <li>• A screening tool for applicants to check eligibility, then the participant initiates outreach to WIC staff (i.e. via a phone call)</li> <li>• A screening tool/application for applicants to fill out online, then WIC staff initiates outreach to applicants</li> <li>• A way to upload documents electronically</li> <li>• A WIC portal or website participants can log into and manage WIC services</li> <li>• A way to schedule appointments online</li> <li>• A way for participants to participate in appointments online</li> <li>• An integrated online application for benefits that includes WIC and possibly SNAP, Medicaid, and/or TANF</li> <li>• A way to text WIC applicants/participants</li> <li>• A way for referral partners to send referrals electronically</li> <li>• None</li> <li>• Other - please describe</li> </ul> | <ul style="list-style-type: none"> <li>• MIS systems</li> <li>• A screening tool for applicants to check eligibility, then the participant initiates outreach to WIC staff (i.e. via a phone call)</li> <li>• A screening tool/application for applicants to fill out online, then WIC staff initiates outreach to applicants</li> <li>• A way to upload documents electronically</li> <li>• A WIC portal or website participants can log into and manage WIC services</li> <li>• A way to schedule appointments online</li> <li>• A way for participants to participate in appointments online</li> <li>• An integrated online application for benefits that includes WIC and possibly SNAP, Medicaid, and/or TANF</li> <li>• A way to text WIC applicants/participants</li> <li>• A way for referral partners to send referrals electronically</li> <li>• None</li> <li>• Other - please describe</li> </ul> |

How would you prioritize the below WIC applicant or participant-facing technology and innovation projects based on the program goals in your state? Please pick your top 3, #1 being the highest priority, #3 being the lowest priority. Please select priorities you have not already implemented (e.g. if you have an electronic document uploader, do not select it below.) (ranking, randomize options)

- Creating or updating core MIS modules
- A screening tool for applicants to check eligibility, then the participant initiates outreach to WIC staff (i.e. via a phone call)
- A screening tool/application for applicants to fill out online, then WIC staff initiates outreach to applicants (i.e. via a phone call)
- A way to upload documents electronically
- A WIC portal or website participants can log into and manage WIC services
- A way to schedule appointments online
- A way for participants to participate in appointments online
- An integrated online application for benefits that includes WIC and possibly SNAP, Medicaid, and/or TANF
- A way to text WIC applicants/participants
- A way for referral partners to send referrals electronically
- EBT technology projects
- Digital marketing outreach campaign
- Non-technology projects (e.g. improving breastfeeding peer counseling program; non-technology outreach)

Are there any technology projects or innovations not mentioned below that you have implemented or would like to implement? If so, please describe. (short answer)

Please refer to the below definitions for the following questions:

- User research: a range of techniques are used to understand the target audience and the problems that they have. Contextual inquiry, involving direct observation, is favored over interviews.
- Usability testing: Observation of people attempting to use a product, prototype or mockup. See Design Method: Usability Testing
- Prototype: A functional representation of a feature or group of features not meant to be sold to customers, but rather to get feedback from potential users or customers.
- User acceptance testing (UAT): Trying functionality in a test environment, before it's deployed to production, to ensure that it matches expected specifications. Often, someone on the team that did not build the functionality will perform the test. This might have been referred to as Quality Assurance (QA) testing as well.

- Acceptance criteria: A set of conditions detailing the functional goals of the user story. This is a user story-specific description of when that story is done. The acceptance criteria could be used to demo the user story or to write an automated test.
- User story: a description of functionality or value written from the perspective of the user. Each story should be made available to users as an incremental improvement; however, it often makes sense to collect a set of user stories that will be promoted or validated together as a release.
- Agile development: pertaining to the Agile Manifesto and/or Agile Principles (<http://agilemanifesto.org>). Agile is a set of values and principles that describe a way of working that promotes continuous learning, adaptation, and user-focused value delivery.
- Waterfall development: a breakdown of project activities into linear sequential phases, where each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks.

What practices have you used for your technology projects? Please select all that apply:  
(multi-select)

- Conducting user research / interviews with participants
- Conducting user research / interviews with staff
- Creating low fidelity, scrappy prototypes before building technology to learn insights about whether you have the right problem/solution fit and whether the solution is appropriate for the target audience
- Usability testing technology tools with participants
- Usability testing technology tools with staff
- Conducting user acceptance testing against acceptance criteria
- Participating in agile software development
- Participating in "waterfall" software development
- I don't know

What practices would you like more resources on? (multi-select, not required)

- Interviewing and asking participants about the design of technology tools
- Interviewing and asking staff about the design of technology tools
- Defining user stories
- Creating low fidelity, scrappy prototypes to learn
- Usability testing technology tools with participants
- Usability testing technology tools with staff
- Conducting user acceptance testing against acceptance criteria
- Participating in agile software development
- Participating in "waterfall" software development

## Management Information Systems

How does data from the below tools in your WIC program transfer data into or out of your MIS? (matrix, multi-select)

|  | Manual (a person types data into the MIS) | Manual (a person looks at data in the MIS, but does not type data into the MIS) | Automatic - API (the MIS has built-in functionality that allows the tool to directly send data to and receive data from it) | Automatic - Import/Export (the MIS has functionality that allows data to be bulk imported or exported from something like an Excel spreadsheet) | Automatic - Third Party System (the MIS does not have an API or import/export functionality, but IT staff have configured a way to automate data transfer) | Automatic - but I don't know how | N/A - we don't use this tool |
|--|---|---|---|---|--|----------------------------------|------------------------------|
| A screening tool for applicants to check eligibility, then the participant initiates outreach to WIC staff (i.e. via a phone call) | ●   | ●   | ●   | ●   | ●  | ●                                | ●                            |

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| <p>A screening tool/application for applicants to fill out online, then WIC staff initiates outreach to applicants (i.e. via a phone call)</p> | ● | ● | ● | ● | ● | ● | ● |
| <p>A way to upload documents electronically</p>  | ● | ● | ● | ● | ● | ● | ● |
| <p>A WIC portal or website participants can log into and manage WIC services</p>   | ● | ● | ● | ● | ● | ● | ● |
| <p>A way to schedule appointments online</p>   | ● | ● | ● | ● | ● | ● | ● |

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| <p>A way for participants to participate in appointments online</p>   | ● | ● | ● | ● | ● | ● | ● |
| <p>An integrated online application for benefits that includes WIC and possibly SNAP, Medicaid, and/or TANF</p> | ● | ● | ● | ● | ● | ● | ● |
| <p>A way to text WIC applicants/participants</p>  | ● | ● | ● | ● | ● | ● | ● |
| <p>A way for referral partners to send referrals electronically</p>   | ● | ● | ● | ● | ● | ● | ● |
| <p>EBT technology projects</p>  | ● | ● | ● | ● | ● | ● | ● |



|                                     |   |   |   |   |   |   |   |
|-------------------------------------|---|---|---|---|---|---|---|
| Digital marketing outreach campaign | ● | ● | ● | ● | ● | ● | ● |
| WIC Shopper                         | ● | ● | ● | ● | ● | ● | ● |

What works well about your current MIS? (short answer, not required)

What would you like to change about your current MIS, if anything? (short answer, not required)

### Referrals

How do you leverage technology to receive referrals into the WIC program (from health care providers or other organizations, like HeadStart)? (multi-select)

- Direct data sharing agreements with healthcare providers (HCPs) or other programs/organizations (i.e. Headstart)
- Online referral or screening tool that non-WIC staff can use to refer applicants to WIC clinics
- Paper or other physical referral form
- We don't use technology, all word of mouth
- Other

How is referral data stored, tracked, and acted upon in your state/agency? (short answer, not required)

Is there anything else you would like to share about WIC technology and your experience operating WIC during the pandemic? (short answer)

### Interview Guide

Note, this guide has been lightly edited — it does not include questions and script introducing staff or set-up/exit instructions for Zoom.

#### Background & introduction

Hi, I'm \_\_\_\_\_ working with Nava and the National WIC Association on an update to the

2020 landscape analysis of technology in WIC. We are part of the WIC Technology Resource Group with NWA and have been conducting learning sessions and office hours. We've also been working with Montana on two philanthropically funded projects: (1) building a WIC pre-application / screener for WIC applicants to fill out and WIC staff to follow up on and (2) a WIC recertification portal.

Do you still have time now to participate in a 45-minute phone interview?

Now that we're all set up I'm going to ask you a few questions about yourself.

- Tell me about your role in your WIC program.
- Tell me about your WIC agency. How many clinics or local agencies do you have? How many staff at the state agency level?
- Who oversees online/digital tools/services within your WIC agency?

Learnings from pandemic

- What is one important thing you learned from providing WIC services during the pandemic that you would recommend to other states?
- If there was one aspect of the WIC certification and recertification process that you could change - considering changes from the ongoing pandemic - what would it be and why?

•

WIC technology projects

- What are the recent technology project(s) you've started or completed with your program? Are you actively working towards adding any other online services for applicants and participants in WIC? (Could get from survey if we have the answers)
- Thinking about one of the projects you mentioned, can you describe the design, development, and implementation process for this tool?
- What does the ultimate success of [this tool] look like for you? What's the goal you're working to achieve with it?
- Is the process you followed to define, design, build and/or launch this tool the norm for your technology projects? If not, what were the key differences?

•

Integrated benefits

- Can you describe how WIC enrollment processes integrate or not with other enrollment processes in your state?
- If they do not integrate, what are the main barriers?
- If they do integrate, what are the opportunities and challenges you faced when integrating?

### Referrals

- Can you describe how referrals are done in your state and any supporting technology that is used?
- How would you prioritize referral partner engagement against other priorities in your state?

### Additional projects

- What resources would be helpful for you to identify, develop, and/or launch future digital tools within WIC that help certify and recertify participants?

### Management Information Systems

- What is one thing you like about your MIS and what is one thing that you wish you could change?
- How do you troubleshoot issues with your MIS?
- How do tools "integrate" with the MIS?

### Reflections

- Do you have any questions about the survey you filled out, any detail you'd like to cover from your answers, or any final insights you'd like to share with us about WIC technology and innovation/modernization?

Well [participant name] that does it for us. Your feedback is very important to us and I want to thank you for your time today. If we have any follow-up questions, would it be alright for us to contact you again?

Thanks so much for participating, and have a great day!

## Endnotes

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