

WIC2FIVE: USING MOBILE HEALTH EDUCATION MESSAGING TO SUPPORT PROGRAM RETENTION



Vermont 2014 WIC Special Project Mini-Grant

Final Report

June 2017

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TABLE OF CONTENTS

Acknowledgements.....	4
Project Summary	5
Introduction and Background	6
Project Environment	7
Methods.....	9
Intervention design.....	9
Site selection.....	9
Text message development	10
Texting Platform.....	11
Training and Recruitment	11
Implementation	12
Evaluation and Results.....	14
Goals and Objectives.....	14
Opinion Survey.....	20
Limitations	25
Challenges and Lessons Learned.....	26
Recommendations and Sustainability.....	28
Recommendations	28
Sustainability.....	28
Discussion: WIC Today	31
References	32
List of Appendices	33

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PROJECT SUMMARY

The FY 2014 WIC Special Project mini-grants focused on WIC child retention. Vermont's project, *WIC2Five: Using Mobile Health Education Messaging to Support Program Retention*, aimed to increase retention through weekly automated text messages. WIC2Five was designed to enhance quality nutrition services, increase participant satisfaction, and improve child retention by:

- Strengthening our connection with families by keeping in frequent contact with them.
- Engaging parents/caregivers more fully by providing them with nutrition and health information of value, and inviting them to take action on this information.
- Using parents' preferred communication channel - text messaging.

The model for WIC2Five was the highly successful Healthy Mothers/ Healthy Babies Coalition Text4Baby program. Parents/caregivers who consented to participate in WIC2Five received automated text messages weekly from August 2015 - August 2016, containing health and nutrition information targeted to their child's age and stage of development. The automated series presented a consistent, sequential and evidence-based body of educational content, and each parent was sent the full 52-week series in sequence, no matter when they opted-in. Additionally, families received occasional "ad-hoc" messages inviting them to specific nutrition education classes and events, and prompting them to keep their WIC benefits active by making/keeping certification appointments. Much of the messaging content was repurposed from two previously funded Vermont WIC Special Projects Grants: *Fit WIC* and *Brighten My Life with Fruits and Vegetables*.

A proxy measure of child retention, as measured by the percentage of infants enrolled over the previous four years compared to the current child enrollment, showed a decrease during the intervention period in both intervention and non-intervention sites. As a second proxy measure, we compared child participation at baseline (July 2015), to child participation one year later (July 2016), in study and non-study sites. Although participation decreased in all sites, most likely due to concurrent major changes in the Vermont WIC program, the decrease was smaller in the five sites that implemented the text messaging.

Parents had the opportunity to opt-out of receiving the automated texts at any time during the project; 86% remained enrolled for the duration of the intervention.

At the end of the project, we conducted an opinion survey via text message. The responses were strongly positive; however, the response rate was low (20%).

Although we experienced many challenges implementing and evaluating this project, we believe there is some evidence to support WIC2Five as a worthwhile strategy to include as part of a multi-component approach to child retention.

INTRODUCTION AND BACKGROUND

Prior to this project, coverage nationally for WIC-eligible infants averaged 83%, but dropped to only 54 % for children ages one through four years ([USDA/FNS 2011](#)). Vermont WIC experienced a similar pattern of high program attrition after the first birthday. While Vermont's WIC coverage rate for all participants was the highest in the country at 87 percent, we were experiencing a similar drop in child participation. Although Vermont birthrates were also on the decline, a gap existed. Between January 2011 and May 2014, overall WIC participation in Vermont decreased by 11.9 percent, compared to a decrease in birthrate of 1.3 percent (2014 Vermont WIC and Vital Statistics data).

In 2013, only 25% of terminations of children birth up to age five were Vermont "WIC graduates" who had reached their fifth birthday. When children exit the WIC program prematurely before their categorical eligibility ends, they lose out on important benefits and services that are known to improve life-long health outcomes. Failure to schedule/keep a WIC certification appointment was the most frequent reason for early termination. In 2013, 3499 children birth to age five years (48.2% of all terminations) lost benefits, at least temporarily, because they didn't attend a certification appointment. Failure to participate due to non-pick up of food instruments also contributed significantly to program attrition. At the start of this project, Vermont WIC was providing food benefits via home delivery; at the end of each month participants had to sign and return a paper Proof of Delivery (POD) form acknowledging receipt of foods and detailing any missing foods. During 2013, almost 10% of children birth to age five stopped receiving benefits due to non-return of their POD (2013 Vermont WIC System data).

WIC's ability to reach young families is hampered through reliance on outmoded forms of communication. Rescue Social Change Group (Rescue SCG) conducted formative research among Vermont low-income, Supplemental Nutrition Assistance Program (SNAP)-eligible women with young children ages 2 to 10 in July 2014 ([Rescue Social Change Group 2104](#)). Over 41% of the focus group participants were currently receiving assistance from WIC. Regarding communication preferences, the women reported:

- Text messaging is the most convenient way to contact them.
- Text messages for reminders, tips, and other short notifications from VDH would be appreciated.
- Phone calls are too time-consuming and are often missed.
- Mailed materials from WIC often go unread or misplaced.
- Facebook messaging would be an effective means of ongoing communication that would be helpful and utilized.
- Message themes that related to sustaining or increasing the health of participants' children resonated best, and were most motivating.

The focus group participants also reported there was little ongoing communication or support other than the routine WIC appointments. Among the recommendations from the report: *"Rescue SCG strongly recommends using text messaging as a primary channel of communication"*

with SNAP-eligible women. Nearly all focus group participants felt that texting was the easiest and most efficient way to provide them with important information including appointment reminders, coupon and sale updates, farmers market coupon pickup, and promotion of other available or new programs being offered. One to two texts per week would be the ideal number of this type of communication. Texting can also be used to pique interest, which can then be supplemented with mailers or emails that contains further information. Since mass texting service is relatively cheap, this can be an extremely cost-efficient way to disseminate information quickly to the target audience.”

The Centers for Disease Control (CDC) also recommends texting as part of an integrated health communications strategy ([Centers for Disease Control and Prevention](#)).

PROJECT ENVIRONMENT

Vermont’s current population is 625,000. Total WIC enrollment is 13,924; 58% (8,107) are children ages one to five years. Eighty-five percent of enrollees, including 6,928 children, are currently participating and receiving benefits. (December 2016 Vermont WIC data). Participant demographics include:

- 98% are English speaking (Nepali, Maay Maay, Somali are the next most frequently spoken languages)
- 94% are white non-Hispanic (black non-Hispanic is the next most frequently reported race/ethnicity)

The Vermont WIC program is centrally administered by the State, and resides within the Vermont Department of Health’s Division of Maternal-Child Health. Integrated services are provided through 12 Local Health Offices (LHOs - the Vermont equivalent of WIC local agencies) located throughout the state, serving all 14 counties in Vermont. WIC clinics are held most days of each week at the Local Health Offices, and smaller field clinics are held monthly in outlying towns in churches, municipal buildings, and other community spaces.

Vermont WIC employs eight full-time state office staff: a Director, Program Administrator, three Nutrition Specialists, Breastfeeding Coordinator, Vendor Manager and Data Analyst. Competent Professional Authority (CPA) functions in the LHOs are performed by three levels of professional (Nutritionist I and II) and para-professional (Nutrition Assistant, Health Outreach Specialist) nutrition staff.

At the start of this project in December 2014, Vermont WIC used a combination of three allowed food delivery systems; home delivery for most WIC foods, direct distribution through WIC local offices for exempt formulas and medical foods, and EBT for the cash value fruit and vegetable benefit. In June 2015, the LHOs began a staggered roll-out to replace home delivery of food benefits with a fully functioning Electronic Benefit Transfer (EBT) system, in alignment with the FNS strategic plan for EBT and the mandate to move to WIC EBT by 2020.

Simultaneously, we also replaced our paper client record and 32-year-old WIC legacy management information system (MIS) by transferring the Mountain Plains Consortium WIC Data System (MPSC),

which includes an approved, functioning EBT system. The roll-out process (June 2015 -May 2016) overlapped with the WIC2Five grant activities, and had major impacts on the implementation and evaluation of WIC2Five. These impacts will be discussed in the Evaluation section of this report.

METHODS

INTERVENTION DESIGN

WIC2Five was designed to further enhance quality nutrition services and potentially improve child retention by:

- Increasing our connection with families by keeping in frequent contact with them.
- Providing parents with nutrition and health information of value, and inviting them to take action on this information.
- Using parents' preferred communication channel - text messaging.

The model for WIC2Five was the highly successful Healthy Mothers/ Healthy Babies Coalition Text4Baby program ([Text4baby](#)). Parents/caregivers who consented to participate in WIC2Five received, automated text messages weekly with health and nutrition information targeted to their child's age and stage of development. The automated series presented a consistent, sequential and evidence-based body of educational content, and each parent was sent the full series in sequence, no matter when they opted-in. Additionally, families received occasional "ad-hoc" messages inviting them to specific nutrition education classes and events, and prompting them to keep their WIC benefits active by making/keeping certification appointments.

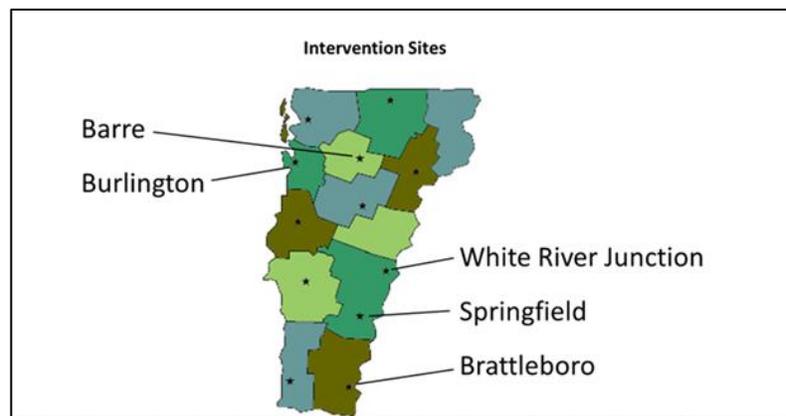
This research project was approved by the Vermont Agency of Human Services Institutional Review Board (IRB).

SITE SELECTION

Four WIC Local Health Office (LHO) sites were invited to participate in WIC2Five, based on their decreases in caseload and the gap between child enrollment in Medicaid and WIC enrollment: Barre, Brattleboro, Springfield, White River Junction. All four offices agreed to take part in the project. These sites reported the largest decreases in caseload in 2014, and were also the offices with the largest difference between the number of WIC-eligible children receiving Medicaid and the number of children who were enrolled in WIC. The sites are a mixture of large and small caseloads, rural and urban settings. A fifth site, Burlington, the largest and most culturally diverse LHO, asked to be part of the project and was accepted. The Barre and Burlington sites are more urban with concentrated population centers and with larger WIC populations.

Brattleboro, Springfield and White River have smaller caseloads, are more rural, and have some challenging physical geography which can make travel to WIC appointments difficult. Only Burlington has a robust public transportation system.

Figure 1. Intervention Sites



TEXT MESSAGE DEVELOPMENT

A workgroup of WIC nutrition staff from four of the five Local Health Office sites was convened to help develop the educational content of the text messages. A 52-week series of short nutrition and physical activity messages was created for each of four age groups: one year; two year; three year; four year. Guidelines and best practice recommendations from the CDC were followed in developing the text messages ([Centers for Disease Control and Prevention](#)). Each week had a common theme, and the content for each age track was modified to specifically address the developmental characteristics of that age (Example: Table 1).

Table 1. Week 2 Message Tracks

	1 year old	2 year old	3 year old	4 year old
Main Message	Active play helps your toddler build more than muscle. Build her brain with activities like stomping, waddling and marching. Run and jump every day!	Active play helps your child build more than muscle. Build her brain with activities like scurrying, chasing and trudging. Run and jump every day!	Active play helps your preschooler build more than muscle. Build her brain with activities like hopping, leaping and dashing. Run and jump every day!	Active play helps your preschooler build more than muscle. Build her brain with activities like skipping, prancing, and galloping. Run and jump every day!
Follow-up message (sent 1 minute after main message)	Get your free copy of <i>Playing with Your Toddler</i> . Text Fitwic now and we will send you one.	Get your free copy of the <i>Fit WIC Activity Pyramid</i> . Text Fitwic now and we will send you	Get your free copy of the <i>Fit WIC Activities Book</i> . Text Fitwic now and we will send you one.	Get your free copy of the <i>Fit WIC Activities Book</i> . Text Fitwic now and we will send you one.

Most of the content for the educational messages was gleaned from participant materials developed during previous Vermont WIC Special Project Grants, particularly *Fit WIC (1999)* and *Nurturing Families' Appetite for Fruits and Vegetables (2006)*. Well-received educational print materials from these previous projects were “deconstructed” into small text bites; each message had a limit of 160 characters (including spaces), although for longer texts the message could be split into two texts delivered back-to-back. We chose to repurpose some of our older content for a couple of reasons:

1. During focus groups with WIC parents, we heard they valued the nutrition information received from WIC, and they wanted more frequent contacts and increased support. However, parents did not want to come to the WIC office more often, nor they did want to receive “papers” containing information. The overwhelming communication preference was text messages, for both information and support.
2. The WIC Special Project Mini-Grants operate on a shortened time frame (18 months compared to 36 months for the full Special Project Grants), which didn’t allow us sufficient time to fully develop and pre-test new educational content. Thus, we felt it was important to use content that had previously been evaluated in a past successful project.

The basic structure of each message consisted of two elements:

- An age-specific informational statement.
- A call to action asking the parent to do something specific with the information.



The previous Vermont WIC Special Project Grant materials used to develop the WIC2Five content can be accessed on the WIC Works Sharing Gallery /Special Project Grants ([USDA/FNS WIC Works](#)).

TEXTING PLATFORM

In the summer of 2015, Vermont WIC contracted with Educational Message Service (EMS), a social marketing and health technology organization in Ventura, CA, to use their Prevention Pays Text Message Services (PPTMS) platform to deliver the WIC2Five text messages. PPTMS uses keyword + shortcode technology that is supported by all mobile carriers in the United States. The platform supports both one-way and bi-directional (two-way) text communication. The PPTMS system complies with Health Insurance Portability and Accountability Act (HIPAA) guidelines, and uses Secure Socket Layer (SSL) encryption, a dedicated private server, and other security protocols to assure protection of information. EMS maintains the data on their server, which is accessed through a password protected administrative portal. Prior to signing the contract, it was reviewed for privacy and security concerns by the Vermont Department of Health's Office of Legal Counsel. We received full support and approval for one-way communication, and much more limited approval for two-way texting.

TRAINING AND RECRUITMENT

Training for WIC staff in the five project sites was completed via webinar in July 2015. Parents were recruited from August 2015 through August 2016. Posters and recruitment flyers were displayed in the participating WIC clinics (Appendix 1: Recruitment Flyers). At WIC appointments for certification, high-risk follow-up or nutrition education, parents were screened by WIC staff for eligibility to enroll in the WIC2Five research project (Appendix 2: Recruitment Screening Tool). To participate in the project, three criteria had to be met:

- At least one WIC-active child between the ages of 1 and 5 years was living in the household.
- The parent/caregiver had a cell phone that accepted unlimited text messages at no cost.
- The parent/caregiver could read English.

Eligible parents were given a brief explanation of the project and asked if they were interested in hearing more. Staff used additional key talking points to describe the intervention in more detail to interested parents. Those who agreed to participate received a written lay summary outlining the

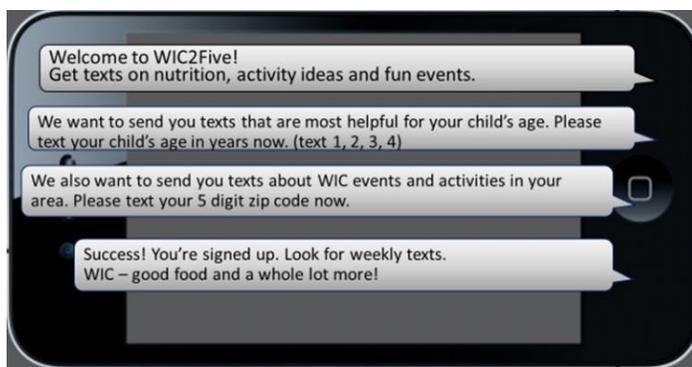
benefits and risks, how to withdraw at any time, and how the information collected would be used. (Appendix 3: Lay Summary).

IMPLEMENTATION

We chose to have parents opt themselves in to receive the WIC2Five series of texts, rather than have staff complete the opt-in process. Parents used their personal cell phones to opt-in by texting the keyword “WIC2Five” to the shortcode 85511. Staff asked parents to complete the opt-in steps during their clinic visit, to assure this was done and to offer any technical support that might be needed (Appendix 4: Opt-In Instructions). For parents who chose to opt-in later, a reminder wallet card was given. (Appendix 5: Wallet Card).

See Appendix 6, WIC2Five Staff Implementation Guide, for a full description of the WIC2Five protocol.

When parents initiated the opt-in process, they first received a welcome text, followed by a short series of triage questions designed to place them into the correct message group. Message groups were based on the child’s age, and on the location of the parent’s local health office. For each of the five sites, there were 4 age groups, for a total of 20 groups. After the welcome message and opt-in questions, the automated texts were deployed on a fixed schedule from the EMS server; each message followed the previous one by a prescribed length of time, usually a specified number of days.



The messages were designed to be primarily one-way health, physical activity and nutrition tips. Limited opportunities for two-way texting communication were incorporated to introduce families to the concept of communicating with WIC through this channel. For example, parents could request the Fit WIC Activities book via text, and they were encouraged to indicate to their favorites messages by texting “Like” in reply. Other types of interactivity were encouraged through messages that invited parents to share recipes or activity ideas on the local health office Facebook pages.



Embedded in the automated series were also general prompts to make/keep appointments and remain enrolled.



In addition to the automated series, one-time, site-specific texts promoting WIC nutrition education classes were sent periodically to all parents who opted-in within an OLH district.

See Appendices 7 and 8 for the full message series and deployment schedule.



EVALUATION AND RESULTS

Evaluation activities were conducted between September- December 2016, using Vermont WIC data and data provided by the contractor, EMS.

Throughout the intervention period (August 2015-August 2016), Vermont WIC enrollment and participation decreased across all participant categories, and the proportion of children experiencing gaps in participation and/or early terminations increased. It's unclear what caused the decrease in participation - many other States also experienced decreased WIC participation during this timeframe. It is notable that during intervention period, Vermont's home delivery system was replaced with an online EBT/retail system. This significant change could have affected participation rates, as participants were required to go to grocery stores to obtain their WIC foods instead of having WIC foods delivered to their doors. Additionally, transfer of the legacy MIS system to the Mountain Plains Consortium WIC Data System (Ceres in Vermont) occurred at the same time.

The roll-out of eWIC and Ceres was staggered over the entire study period, making it difficult to tease out any potential effects of the WIC2Five intervention. Where it seemed appropriate, the evaluation measures described in our original application were modified or not measured; any changes are noted below.

GOALS AND OBJECTIVES

The primary goal was to increase child retention by implementing targeted mobile health education messaging.

Our original goal was to increase the proportion of children enrolled in Vermont WIC who "graduated" at age 5 by implementing targeted mobile health education messaging. We feel that changing the measure from WIC graduation to overall child retention is more appropriate; more families with younger children (1-2 years old) participated in WIC2Five than families with older children (3-4 years old), and the length of the intervention was only 12 months. Thus, we have revised our original goal with the new goal above.

The charts below (Figures 2-6, and Table 2) present proxy measures for child retention in each of the five intervention sites compared to the state rates. Data is shown for baseline (2015), the intervention period (2016), and current rates (2017). The proxy measure compares child participation in each year to the number of infant participants over the previous 4 years. If every infant who started out on WIC was still participating at the end of each year, the rate would be 100%.

We did not meet our goal of increasing child retention. Child retention, as measured by the percentage of infants enrolled over the previous four years compared to the current child enrollment, decreased during the intervention period in all intervention sites. At baseline (2015), child retention in the five intervention sites combined was 69.0%, compared to 64.0% post-intervention (2016).

Figure 2. WIC Child Retention Rate Barre

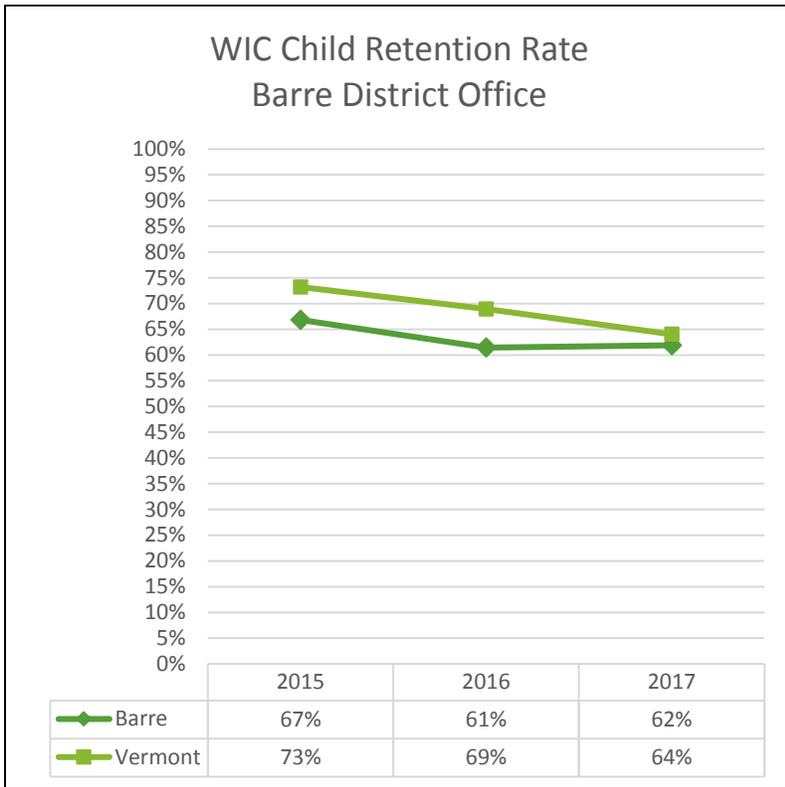


Figure 3. WIC Child Retention Rate Brattleboro

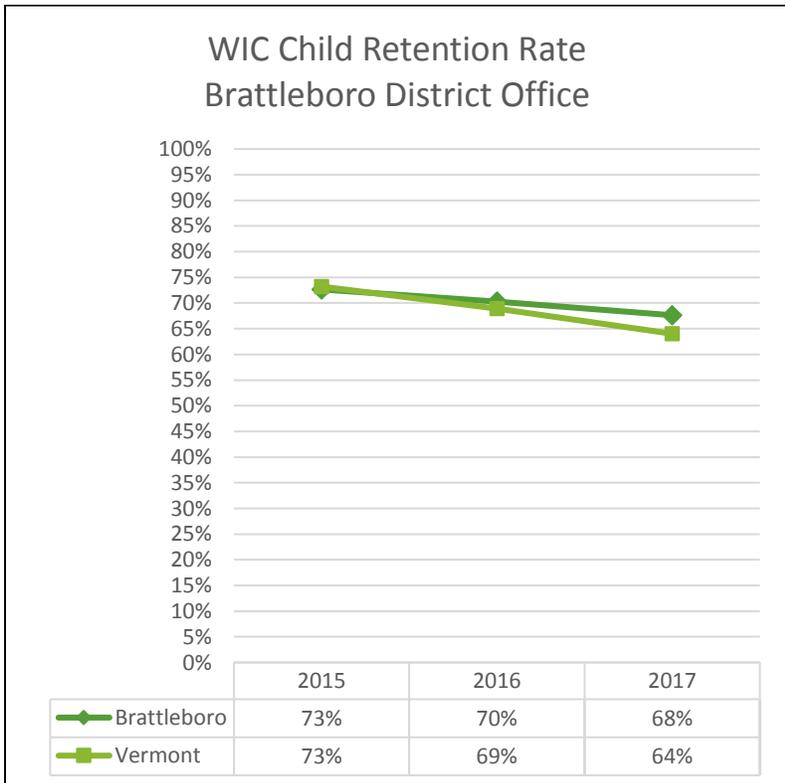


Figure 4. WIC Child Retention Rate Burlington

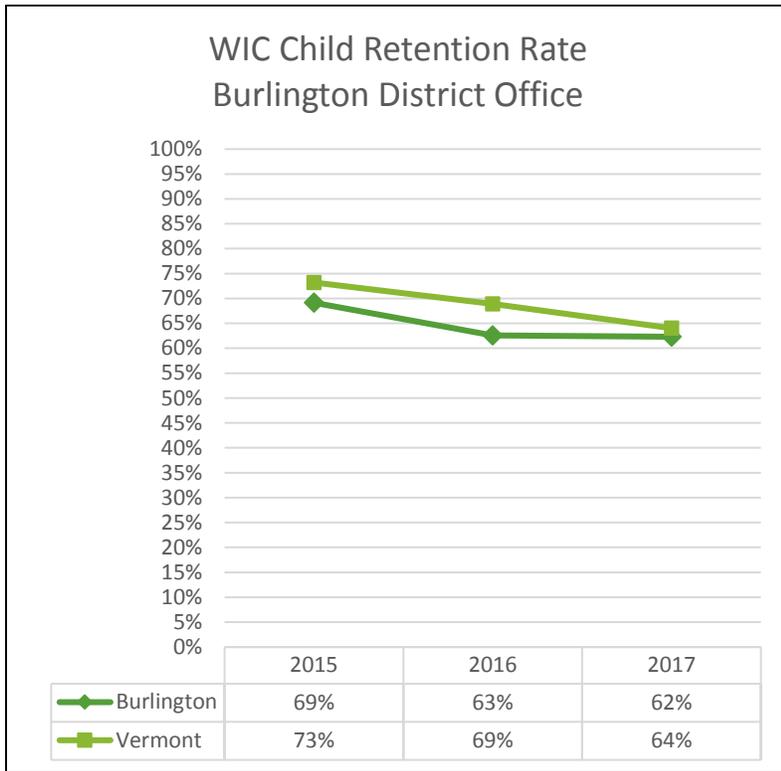


Figure 5. WIC Child Retention Rate Springfield

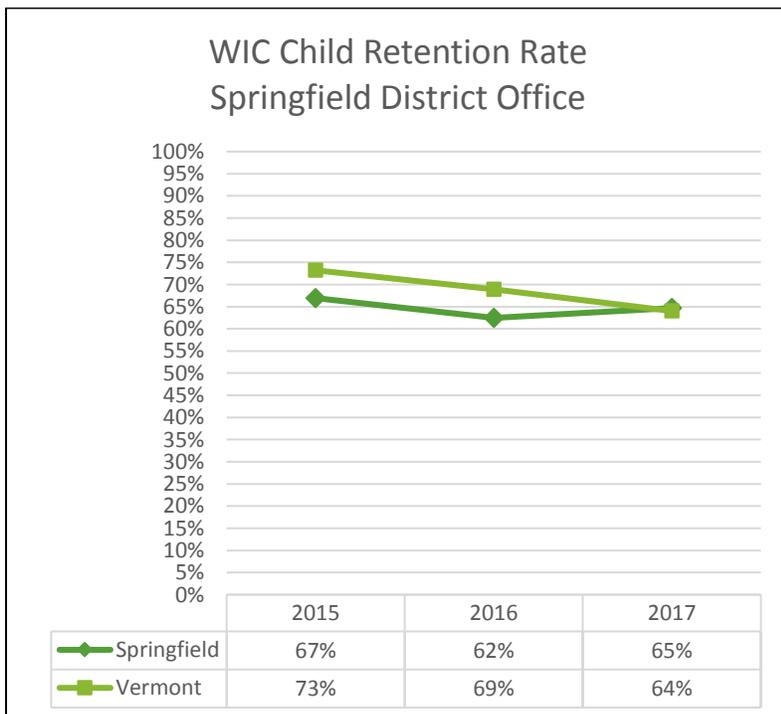
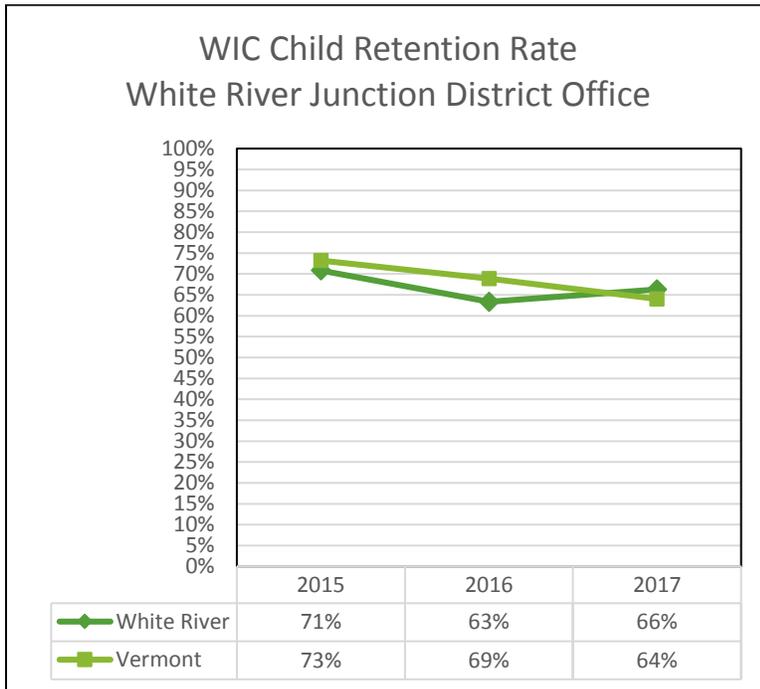


Figure 6. WIC Child Retention Rate White River Junction



Except for the Morrisville Local Health Office, child retention, as measured by the percentage of infants enrolled over the previous four years compared to the current child enrollment, also decreased during the intervention period in all intervention and non-intervention sites, and statewide (Table 2).

Table 2. WIC Child Retention Rates Statewide

	2015	2016	2017
Burlington	68.1%	62.6%	62.3%
Bennington*	74.8%	73.7%	63.3%
White River	70.8%	63.3%	66.3%
Rutland*	69.9%	65.9%	59.2%
Springfield	66.9%	62.5%	64.7%
Newport*	81.5%	73.7%	59.4%
St. Johnsbury*	79.9%	77.3%	70.0%
Barre	66.8%	61.4%	61.9%
Brattleboro	72.6%	70.3%	67.6%
St. Albans*	73.2%	70.4%	59.0%
Middlebury*	84.0%	79.7%	72.4%
Morrisville*	83.8%	84.3%	77.9%
Vermont	73.2%	68.9%	64.0%

*= Non-intervention Site

As a second proxy measure of child retention, we compared child participation at baseline (July 2015), to child participation one year later (July 2016), in study and non-study sites (Table 3). Although participation decreased in both groups, the decrease was smaller in the five sites that implemented the text messaging.

Table 3. Child Participation in Study and Non-Study Sites: Baseline and End of Study

	July 2015	July 2016	Change
Barre	717	653	
Brattleboro	451	374	
Burlington	1348	1306	
Springfield	461	383	
WRJ	502	441	
TOTAL STUDY SITES	3479	3157	(-) 9.3%
Bennington	594	528	
Rutland	901	789	
Newport	622	526	
St Johnsbury	607	503	
St Albans	915	766	
Middlebury	455	413	
Morrisville	559	505	
TOTAL NON-STUDY SITES	4653	4030	(-) 13.4%

Objective 1: 50% of mothers/caregivers* with cell phones equipped to receive texts will self-enroll in WIC2Five. Based on child participation numbers at the start of the project and cell phone usage data, we estimated a potential recruitment pool of 1,068 families. At the end of the study period in August 2016, 1037 families had been screened for recruitment. We did not meet our goal of 50% enrollment in the project; a total of 349 families (33.65%) opted-in between August 1, 2015 and August 31, 2016 (Table 4). The number of families declining to participate, and the number choosing to wait and possibly enroll at a later time (“maybe” status) were higher than expected. One barrier to recruitment may have been the requirement by the IRB to provide each family with a lay summary of the project and ask for informed consent. We also know that some potentially eligible families were not ever screened for eligibility. When returning incomplete recruitment screening tools to the project that manager, staff sometimes noted there was not enough time during the WIC clinic to recruit study participants. Clinic staff reported needing to spend their face-to-face time instructing families how to activate and use their new eWIC cards, and how to shop at approved grocers using the Vermont WIC Food Guide and their family benefits list.

*Mothers/caregivers of currently active WIC participants ages one through four years

Table 4. WIC2Five Enrollment Status

	Number Accepted* and Enrolled / Number Screened	Number Maybe**	Number Declined***	Number Ineligible: Phone does not accept text messages	Number ineligible: Head of Household does not read English
Barre Clinic	102/220	57	66	9	0
Brattleboro Clinic	109/130	0	23	16	0
Burlington Clinic	46/420	141	53	16	38
Springfield Clinic	72/142	13	52	15	2
White River Junction Clinic	20/156	110	43	34	0
Total	349/1037 (33.65%)	321 (30.95%)	237 (22.85%)	90 (8.68%)	40 (3.86%)

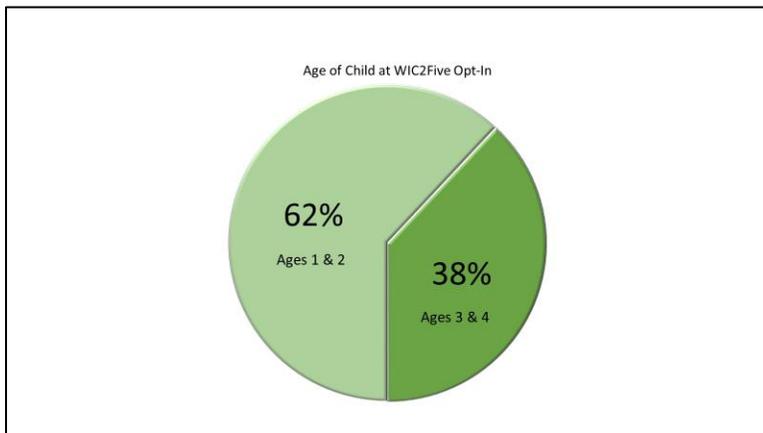
*Accepted status: Head of Household signed-up for the texting service during their clinic appointment and is currently receiving the series of WIC2Five text messages

**Maybe status: Head of Household took WIC2Five sign-up information home but did not enroll during their clinic appointment, and had not enrolled as of August 31, 2016.

***Declined status: Head of Household declined to enroll during the clinic appointment and declined to take home the enrollment information for future consideration.

Almost two-thirds of the parents who agreed to participate received the automated series developed for ages one and two years (n=230), and one-third received the messages appropriate for children ages three and four years (n=119) (Figure 7). It may be that WIC2Five appealed more to parents of younger children; however, in families with multiple children enrolled in WIC, staff were instructed to choose the message track that corresponded to the age of the youngest child.

Figure 7. Ages of WIC2Five Children



Objective 2: Increase by 6 months the average length of time children are enrolled.

Due to operational and system changes during the intervention period, we were not able to measure this objective.

Objective 3: Decrease the proportion of children terminated due to failure to make or keep a recertification appointment by 75%.

Prior to the intervention (2014), 48% of all terminations statewide were for failure to reapply. The percentage of terminations during the intervention period (August 2105-2016) increased, potentially a result of eWIC and Ceres implementation. Fifty-seven percent (57%) of children in the five WIC2Five sites were terminated at least temporarily, and 55% of children were terminated at least temporarily in the remaining seven non-intervention sites.

Objective 4: Decrease the proportion of children terminated due to failure to return the WIC Proof of Delivery form/pick up food instruments by 50%.

Because our food delivery system changed so radically during the intervention period, we felt it would not be meaningful to the evaluation of WIC2Five to measure this objective.

OPINION SURVEY

At the end of the project, we conducted an opinion survey via text message (Appendix 9: WIC2Five Opinion Survey). This was our first experience conducting a participant survey via text, and we did not know what to expect for a response rate. The survey was sent to 138 parents who had received 39 – 52 weeks of messages (at least three quarters of the full sequence). Respondents were asked their level of agreement/disagreement about six opinion statements, using a five-point Likert Scale. Each statement was sent as a separate text, and the respondents answered by texting back the number that corresponded with their chosen answer: 1=very satisfied/strongly agree, 2=satisfied/agree, 3=dissatisfied/disagree, 4=very dissatisfied/strongly disagree, 5=none of the above.

WIC would like to know how you feel about the messages you received. Please text 1 to continue.

WIC: Your answers to our survey help us to grow as an agency and provide us with essential feedback. Please continue (or begin) the survey by texting 1 back.

Overall, how satisfied were you with the WIC2five msg service? Text 1=Very Satisfied, 2=Satisfied, 3=Dissatisfied, 4=Very dissatisfied, 5=none of the above

The survey was first sent on July 28, 2016. The response rate was extremely low (<10%), so it was resent to the non-respondents on August 9, 2016 in an attempt to increase the number of responders. The

response rate to the second deployment was slightly higher, and the total number responding was 28, for a response rate of 20%. Results for each question are shown below (Figures 8-13). While the responses were strongly positive, the small, self-selected sample size presents obvious limitations.

Figure 8. Overall Satisfaction with WIC2Five

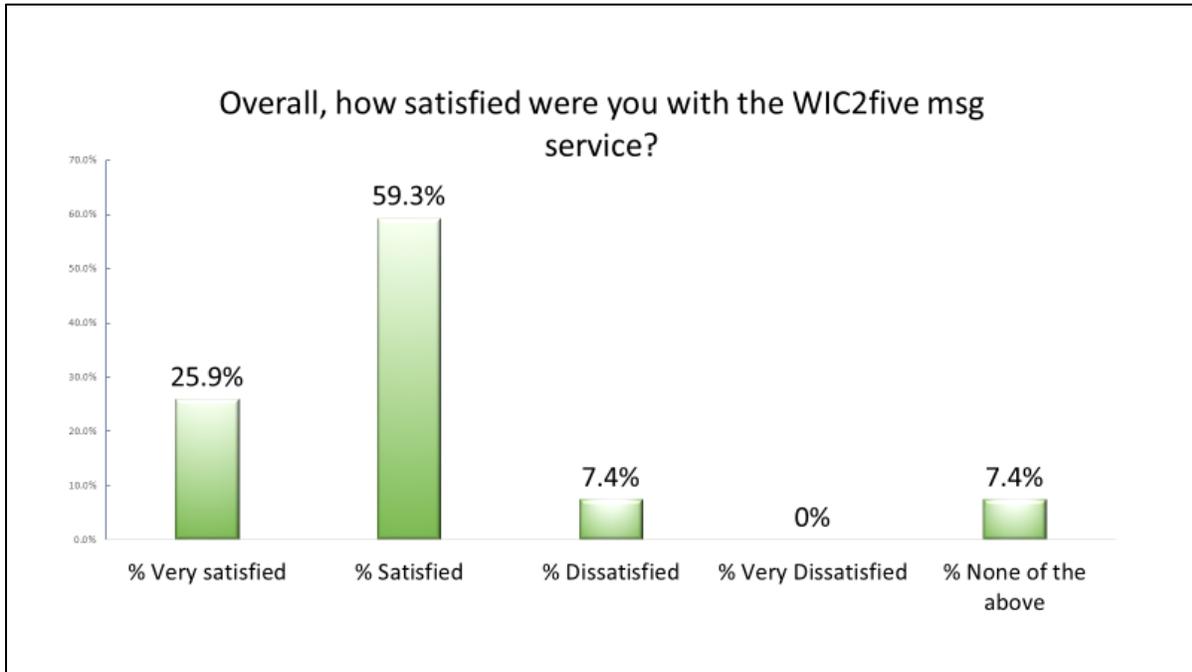


Figure 9. WIC2Five Messages Received were Age-Appropriate

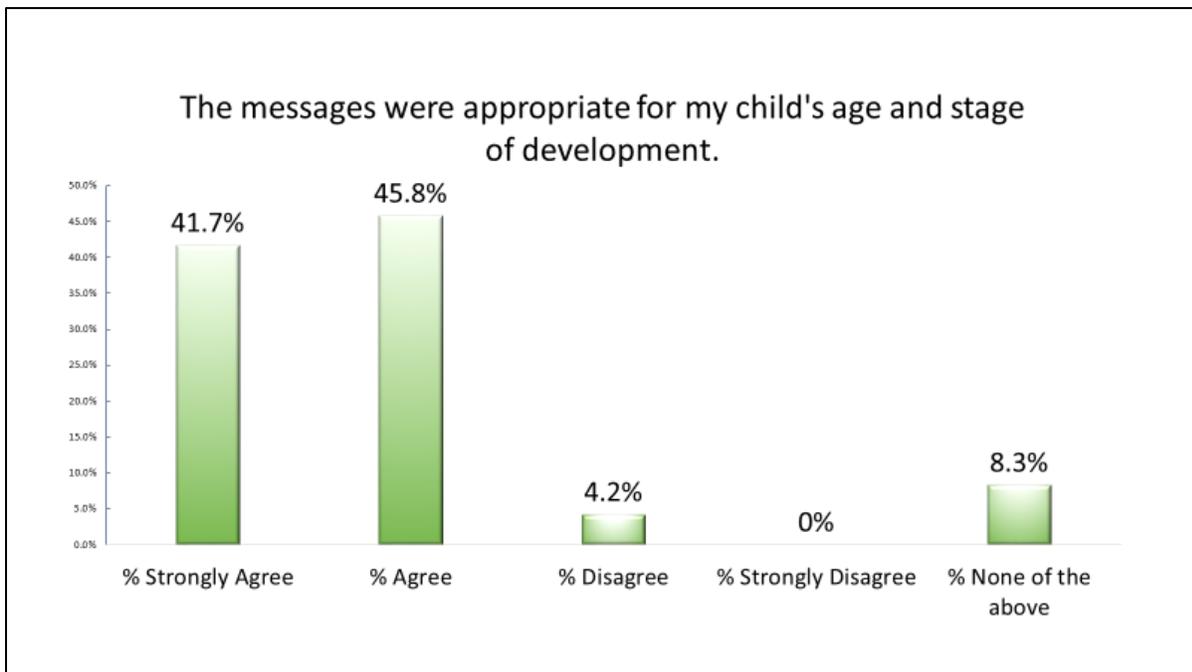


Figure 10. WIC2Five Helped Improve Nutrition



Figure 11. WIC2Five Helped Improve Physical Activity

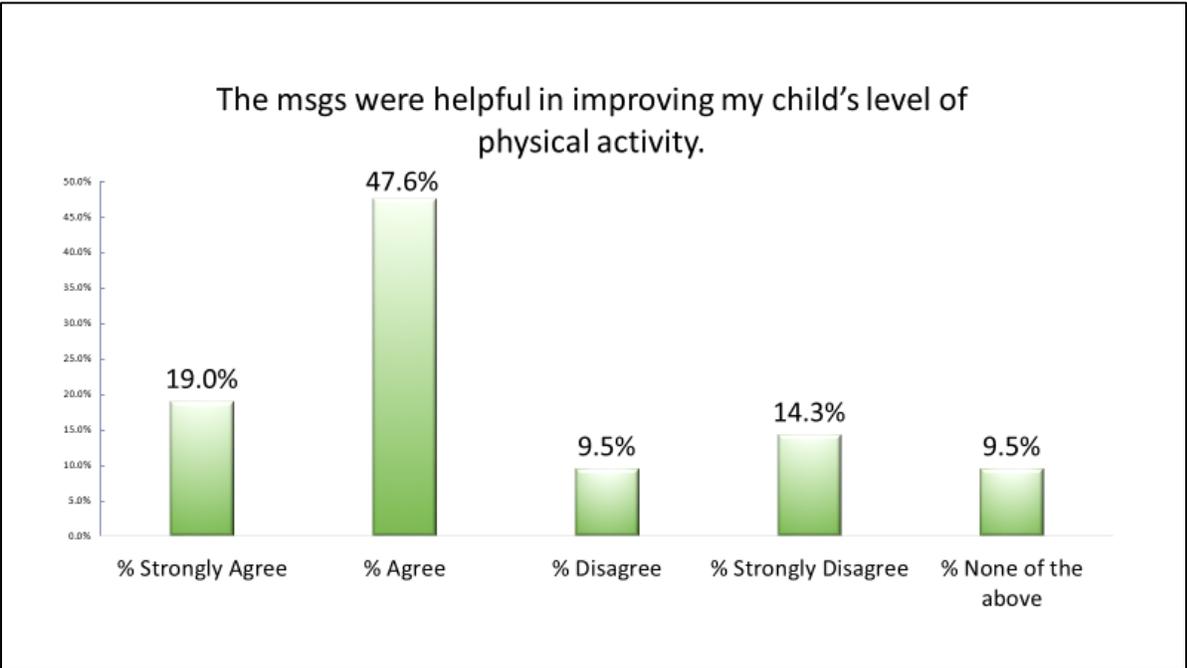


Figure 12. WIC2Five Helped Families Connect with WIC

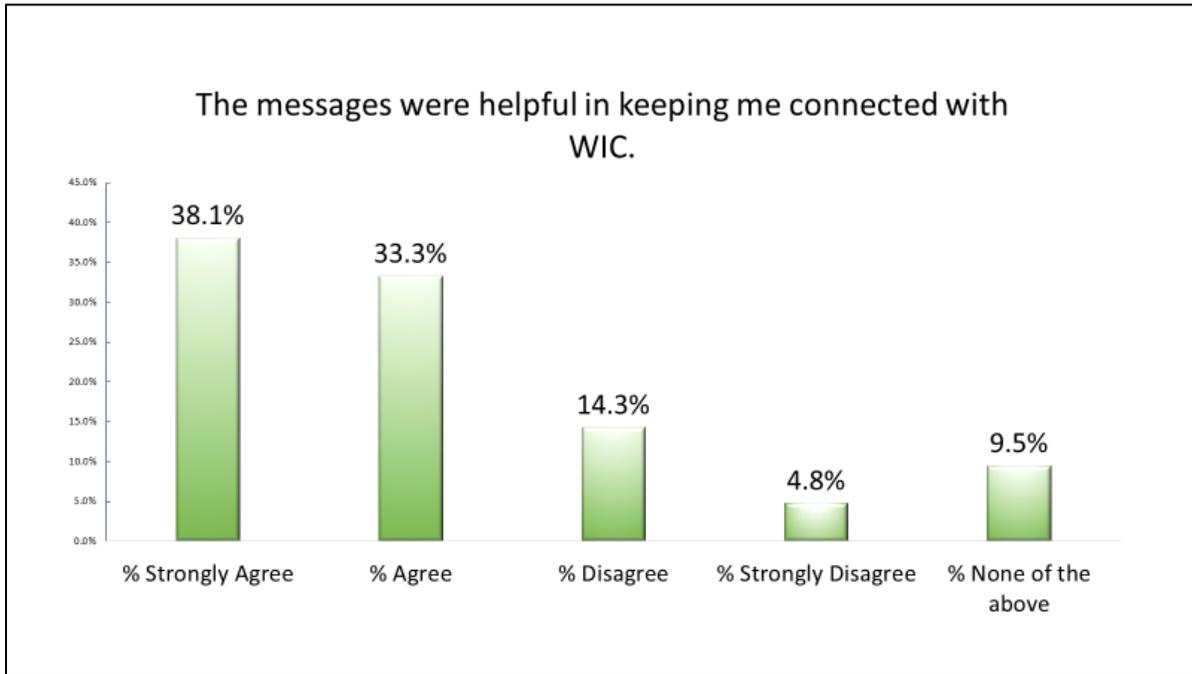
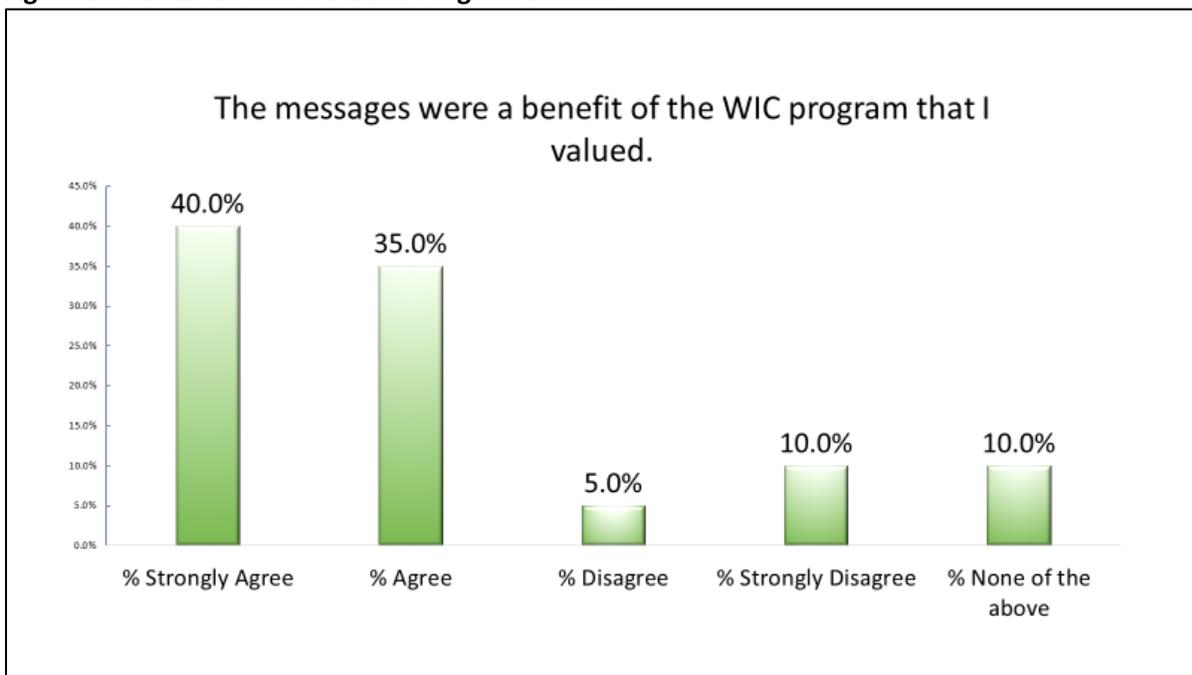


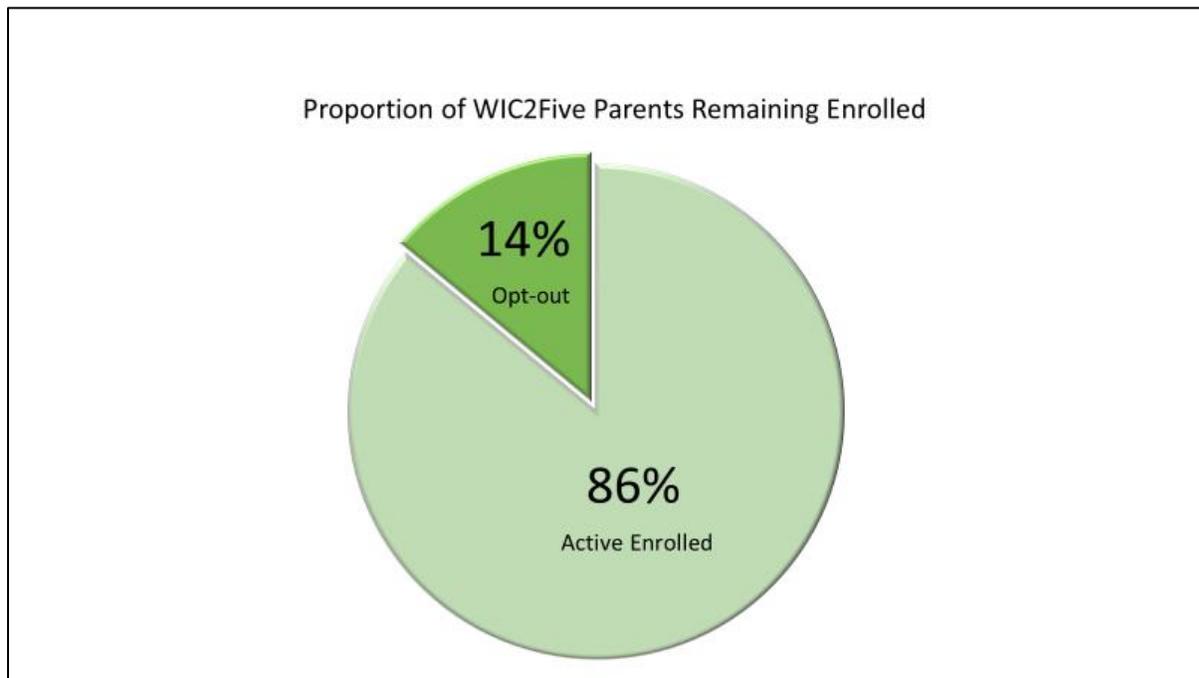
Figure 13. WIC2Five was a Valued Program Benefit



As another indicator of satisfaction with WIC2Five, we measured the proportion of parents who chose to opt-out at any point during the project (Figure 14). Instructions for opting out were provided in the written project summary, in the initial Welcome text, and were periodically by text message over the course of the project. Eighty-six percent of parents who initially opted-in and received 39- 52-weeks of messages (at least three quarters of the full sequence) (n= 138), continued until the end of the messaging period.



Figure 14. Proportion of Parents Staying Active in Intervention



LIMITATIONS

There were many activities and new initiatives other than WIC2Five occurring during the study period, which were not controlled for in the evaluation. Participation in the project, and in the opinion survey, were by self-selection, which may bias the results. Additionally, sample sizes were very small.

We did not collect demographic characteristics for WIC2Five participants, for comparison purposes to non-participants. Demographic data reports are not available in the Ceres system and we do not currently have other demographic data collection resources; this type of data would have to be collected manually by opening each individual participant record, and we did not have capacity for this during/after the project.

CHALLENGES AND LESSONS LEARNED

As has been previously discussed, the overarching challenge to implementing WIC2Five was the concurrent implementation of eWIC for food benefits and the Ceres computer system for MIS. On the plus side was the ability to send out “ad-hoc” one-time reminders to WIC2Five families in support of these changes. However, we underestimated the time, energy and attention that eWIC and Ceres implementation required of State and Local staff, and WIC families, and it proved difficult to add on the demands of a WIC Special Project Grant, even a mini-grant.

One of the first challenges we encountered was obtaining permission and support for texting from the Vermont Department of Health Office of Legal Counsel. The EMS platform is designed to support robust two-way texting; however, our project was approved for primarily one-way communication, with some very limited use of the two-way feature.

Recruitment for this project fell well below our target numbers. One possible barrier was the decision by our Agency of Human Services Institutional Review Board (IRB) to require informed consent. We had been hoping the Board would grant exempt status to our application. We know from previous projects that the informed consent process can be a recruitment barrier for both staff and potential study participants.

Recruitment was also impacted by our decision to have parents take responsibility for the opt-in process. In designing the implementation, we had the choice of parents completing the opt-in steps using their personal cell phones, or of having staff complete the opt-in process on their computers through the EMS web portal. We chose to have parents opt themselves in, thinking this would lessen some of the extra workload for staff. However, when parents said they would like to participate but preferred to opt-in later at home, rather than during their clinic appointment, they did not follow through.

Midway through the project, the Project Director met with the intervention sites via conference call to further assess barriers to recruitment, and brainstorm improvement strategies. The challenges staff listed included:

- Time constraints due to implementation of Vermont WIC’s new MIS and EBT systems. Staff is using all available time during clinic appointments adjusting to the new MIS system, and educating families about their new WIC EBT card.
- Change from paper chart to electronic participant record. The WIC2Five Recruitment Screening Tool had been placed in the paper record prior to an appointment to prompt staff to enroll families. Now that there is no longer a paper chart, staff do not have this prompt right in front of them and are forgetting to ask.
- Change in clinic flow. Some clinics moved from a traditional 2-person (intake and certifier) model to an “all in one” model where a single CPA conducts the entire appointment. Staff reported it was “difficult to find the right place” in the interview to recruit for WIC2Five using a new model.

- Spotty cell service at field clinics. The White River Junction site in particular cited this as a barrier. Most of their clinics are field clinics and many of those sites have no, or unreliable, cell service, making it hard to enroll families on the spot. Text messaging initiatives may be more effective and better-suited to less rural locations.
- WIC2Five messages are in English only. The Burlington site in particular is seeing an increasing number of non-English speaking participants.

Local staff offered several improvement strategies listed below, but found these practices hard to adopt as well.

- Clerical staff complete the eligibility section of the Recruitment Screening Tool when families check-in for their appointment; eligible participants bring the form with them when they meet with the CPA, as a reminder to offer the texting service.
- Routinely offer WIC2Five when staff are updating participant contact information, e.g. phone number.
- Offer WIC2Five at second nutrition education contacts. It was suggested that moving recruitment from the clinic appointment to a second nutrition contact would give staff more time to focus on enrolling families.
- Clerical staff completes entire WIC2Five recruitment and enrollment process at the end of the clinic appointment when the family is checking out.

RECOMMENDATIONS AND SUSTAINABILITY

RECOMMENDATIONS

We experienced many challenges implementing and evaluating WIC2Five, and any potential impacts were overshadowed by other major initiatives Vermont WIC was implementing simultaneously. While our outcome data was disappointing, based on the positive responses to the opinion survey, and the high proportion of families who did not opt-out during the project, we believe it is a worthwhile strategy to include automated, educational text messaging as part of a multi-component approach to child retention. We recommend our model to other WIC programs with the following changes:

- WIC staff obtain verbal permission from heads of household for WIC to communicate program information to them by text message and document this in the family WIC record.
- Present the WIC2Five automated series to families as part of a comprehensive package of program benefits: healthy foods, nutrition information from a trusted source, support and resources to back-up parents' hard work in keeping their families healthy.
- WIC staff complete the opt-in process for all households with age-eligible children who give permission, rather than relying on busy and distracted parents to do this.
- Utilize more of the functionality of the EMS (or another contractor) system, especially two-way communication and appointment reminders. The current cost for EMS services is \$4000.00 per year. This covers unlimited two-way texting to an unlimited number of participants, with many options including automated series, one-time "ad-hoc" reminders, and appointment reminders.

Nutrition education is one of the hallmarks of the WIC program that distinguishes us from other federal nutrition programs. An area of potential future research would be to increase the use of two-way text communication to build interactivity and explore how text messaging might be used to help families meet their requirements for WIC nutrition education.

SUSTAINABILITY

The cost of contracting for texting services is cost-effective and can be easily added to a WIC program's budget. Vermont has a current enrollment of 13,484; the cost of texting (through our contract with EMS) is just \$ 0.30 per participant per year.

Since the completion of the WIC2Five grant project, we have incorporated our own recommendations and expanded our texting capabilities. We renewed our contract with EMS, and they worked closely with us to meet our unique needs, including set-up of each local health office (LHO) as a separate campaign, with oversight by the state office. In November 2016, we trained WIC staff in all 12 LHOs to implement the WIC2Five automated message program. State-wide roll-out began in January 2017. (Appendix 10: WIC2Five Protocol). We changed the opt-in process; staff are now completing the opt-in steps for every eligible family who has given WIC permission to contact them by text message. In most sites, clerical staff are doing the opt-ins at the end of the clinic day.

Between February and June 2017, staff have opted-in 1,157 families to receive the WIC2Five automated text messages. 92.3% of those families have remained “opted-in”, and 7.3 % have chosen to opt-out.

Failure to schedule/keep a WIC recertification appointment continues to be a major cause of benefit loss. In early 2017, we asked for volunteer local health offices to participate in a pilot for sending appointment reminders. (Appendix 11: Pilot Text Message Appointment Reminders). Four offices, Middlebury, Morrisville, Springfield and St. Johnsbury, quickly stepped-up and began sending reminder texts one to three days before a scheduled appointment. The supervisors in the pilot offices were very supportive and enthusiastic, and preliminary data collected for March, April and May 2017 showed a consistently higher percentage of appointments were kept by WIC participants receiving text reminders compared to those who did not receive text reminders. Results for rescheduled appointments, cancellations and “no shows” appear to be less consistent. (Tables 5 - 7. We do not have data for St. Johnsbury).

Table 5. Appointment Outcomes When Text Reminders Were Sent: Middlebury Site 2017

	Appointment Kept		Participant Called to Reschedule or Cancel		“No Show”	
	Middlebury Pilot	All Middlebury	Middlebury Pilot	All Middlebury	Middlebury Pilot	All Middlebury
March- 107 texts sent	63 %	53 %	17 %	33 %	20 %	14 %
April – 62 texts sent	61 %	51 %	21 %	26 %	18 %	23 %
May – 70 texts sent	56 %	50 %	21 %	31 %	23 %	19 %

Table 6. Appointment Outcomes When Text Reminders Were Sent: Springfield Site 2017

	Appointment Kept		Participant Called to Reschedule or Cancel		“No Show”	
	Springfield Pilot	All Springfield	Springfield Pilot	All Springfield	Springfield Pilot	All Springfield
March – 57 texts sent	63 %	50 %	14 %	36 %	23 %	14 %
April – 69 texts sent	55 %	47 %	19 %	43 %	26 %	20%
May - 71 texts sent	66%	63 %	16 %	26 %	18 %	11 %

Table 7. Appointment Outcomes When Text Reminders Were Sent: Morrisville Site 2017

	Appointment Kept		Participant Called to Reschedule or Cancel		“No Show”	
	Morrisville Pilot	Morrisville All	Morrisville Pilot	Morrisville All	Morrisville Pilot	Morrisville All
March – 56 texts sent	68 %	48 %	16%	41 %	16 %	11 %
April – 73 texts sent	72%	53 %	14 %	35 %	14 %	12 %
May – 75 texts sent	52 %	45 %	24 %	39 %	24 %	16 %

Based on this preliminary information, three more LHOs are now sending reminder texts for scheduled appointments, and training is scheduled for two more sites. We recently added capability for participants to text “Y” in response to confirm their appointment.

No food benefit pick -up is another cause of gap in benefits. Based on the early promising outcomes from appointment reminder texts, we expanded our “menu” of reminders to include a message to families who were due for nutrition education in the current month but had not yet scheduled or completed an activity. This reminder contains a link to the online nutrition education site WIChealth.org, and also includes the Family ID number so an account with WIChealth could be set up or accessed immediately. For the month of May 2017, 1.5 % of individuals (22/1501) in the texting offices were at risk for termination for non-pick-up; in the offices that are not sending reminder texts, 3.2% of participants (329/10,084) were at risk.

While LHOs are building their roster of families who have consented to receive program information from WIC by text message, we are also piloting a reminder to be sent at the time a family missed their scheduled appointment. As of June 2017, 1,795 families have received one or more of the text reminders described above. We are in the process of collecting data to measure impacts of texting on completion of nutrition education, appointment outcomes and participation rates.

While some contractors offer a texting platform that interfaces with a clinic’s WIC’s scheduling system, the platform offered by EMS does not interface with the scheduling system Vermont WIC uses (Mountain Plains). To send appointment reminders through the EMS portal, staff need to create an Excel file for each group of reminders and upload it to the EMS site. The feedback from staff regarding the appointment reminders has been very positive and they report that management of the automated series and appointment reminders is fitting into their daily work schedule and is not adding extra burden.

Hi Lynne! Reminding you of the appointment(s) for Jon and Chris on 01/24/2017 1:30 pm at the Health Department, Morrisville. Text “Y” to confirm. Call 802-888-7447 if you need to reschedule! See you soon!



Hi Lynne! Reminding you to complete your Nutrition Education before March 31, 2017 to keep your benefits current. It's easy! Complete a lesson online at wichealth.org. Your WIC household ID is 123456. Or call the Middlebury Health Department, [802-388-4644](tel:802-388-4644) for more options.

Hi Lynne! We missed seeing you at WIC today. Keep your benefits active. Call us at 802-388-4644 to reschedule. Thanks, the Middlebury Health Department. You work hard to keep your family healthy– we’re here to help!

DISCUSSION: WIC TODAY

Vermont is participating in the National WIC Association's (NWA) new identity and outreach campaign to build national brand recognition. The campaign is designed to position WIC as a trusted source of nutrition advice and expertise, and a non-judgmental resource for parenting support and connection to community. The campaign partners conducted extensive research with WIC moms, and their findings reinforce the research behind WIC2Five. One of the campaign strategies is an "*Optional mobile SMS retention program: SMS (text message) alerts to mobile phones of opted-in WIC eligible and enrolled women at key stages, i.e. when the baby reaches a developmental milestone, changes in WIC policy, nutrition advice, etc. (similar to Text4baby)*". ([Webinar Presentation, January 2016](#))

A recently funded project from the San Diego State Research Foundation WIC Program, to create innovative strategies for recruitment, re-engagement, and retention of WIC participants, focuses on establishing and strengthening relationships between WIC and the families we serve. Their ideas and goals fit very well with what Vermont WIC is trying to accomplish, and provide a relevant and timely framework for WIC2Five. ([California Department of Public Health website, accessed April 2017](#)). We feel, incorporating a combination of automated messages and appointment reminders is a valuable strategy for strengthening our relationships with existing families, and could be further expanded to specifically support new WIC families.

(1) "*Establishing Our Relationship*" – putting extra time and care into introducing new families to WIC. One strategy is to use automated messaging to provide quick prompts with reminders and information about available resources.

(2) "*Strengthening Our Relationship*" – engaging the participant more fully in the WIC experience. The goal is to build families' recognition of the full value of WIC, thus keeping them actively participating through the first five years.

When children exit the WIC program prematurely, they lose out on important benefits and services that are known to improve life-long health outcomes. Many factors contribute to program attrition; some are beyond the power of WIC to affect. However, when we listen to our families, respond to their needs and support their hopes and dreams for their children, we are more likely to succeed at increasing our retention and "graduation" rates.

REFERENCES

1. US Department of Agriculture, Food and Nutrition Service, Office of Policy Support. March 2014. National and State-Level Estimates of Special Supplemental Nutrition Program for Women, Infants and Children (WIC) Eligibles and Program Reach, 2011.
2. Rescue Social Change Group. Increasing Fruit and Vegetable Consumption Among SNAP-Eligible Women in Vermont. Formative Research Report. August 2014.
3. Centers for Disease Control and Prevention, Division of News and Electronic Media. Social Media Guidelines and Best Practices. <http://www.cdc.gov/socialmedia/tools/guidelines/textmessaging.html> Accessed September 11, 2014.
4. Text4baby. <https://text4baby.org/> last accessed 12/1/16.
5. USDA/FNS WIC Works Sharing Gallery https://wicworks.fns.usda.gov/wicworks/Sharing_Center/gallery/special_grants.html last accessed 12/5/16.
6. National WIC Awareness and Retention Campaign. Webinar Presentation, Meredith Custom Solutions. January 2016.
7. California Department of Public Health. Women, Infants and Children Program: Innovative Strategies. <http://www.cdph.ca.gov/programs/wicworks/Pages/InnovativeStrategies.aspx> last accessed April 2017.

LIST OF APPENDICES

1. WIC2Five Recruitment Posters and Flyers
2. WIC2Five Recruitment Screening Tool
3. WIC2Five Lay Summary
4. WIC2Five Sign-up Instructions
5. WIC2Five Wallet Card
6. WIC2Five Staff Implementation Guide
7. WIC2Five Messages (Word document)
8. WIC2Five Messages (Notepad)
9. WIC2Five Opinion Survey
10. WIC2Five Statewide Roll-Out Protocol
11. WIC2Five Pilot Text Appointment Reminders