WIC Services in the Medical Home:

Improving Early Feeding Practices

Vermont Department of Health
WIC Program

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VERMONT
DEPARTMENT OF HEALTH

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(Note: Appendices are in a separate file.)

EXECUTIVE SUMMARY

Background

WIC is the premiere national public health nutrition program, serving nearly one half of all infants and one quarter of all preschoolers nationwide. Nutrition services are the fundamental benefit of WIC participation, and the revitalizing quality nutrition services (RQNS) initiative works to enhance and strengthen the program's effectiveness.

In 2002, the Food and Nutrition Service (FNS) of the United States Department of Agriculture (USDA) offered competitive Special Project grant funding with an RQNS focus. The Vermont WIC program was awarded a three year grant, to pilot an innovative service delivery model in which WIC nutritionists were co-located with pediatric medical providers in the child's medical home. Core WIC services, including nutrition education, certification, and outreach, were integrated into regular well child visits.

The Vermont model, *WIC Services in the Medical Home: Improving Early Feeding Practices* (WICMH), proposed to enhance nutrition education by increasing the frequency of nutritionist contacts, reducing barriers to WIC participation by coordinating pediatric and WIC visits, fostering a collaborative and collegial relationship between WIC nutritionists and health care providers, and assuring the consistency of risk assessments and nutrition messages.

Results

During the project period, 1997 certifications were conducted in the three pediatric practices, with many infants receiving additional nutrition education contacts on site. A comparison of matched program and comparison standard care cohorts showed that a significantly higher proportion of the WICMH cohort were continuously enrolled in WIC during their first year of life ($p=.01$)

Parents in the WICMH group were significantly more likely to receive consistent advice about recommended early feeding practices from both their pediatrician and the WIC nutritionist: feed only breast milk for the first 4 – 6 months ($p=.005$), delay solids until 4 – 6 months ($p=.05$), self feeding by 10 -12 months ($p=.05$), delay cows milk until 1 year ($p=.02$), delay introduction of juice until baby is drinking from a cup (marginally significant $p=.06$). WICMH parents were also significantly more likely to report social norms that were supportive of recommended feeding practices.

The acceptability of WICMH by pediatricians and their staffs, their knowledge of early feeding recommendations promoted by WIC, and their perception of the importance of the WIC program to a child's health increased significantly during the project implementation period.

Implications

The WICMH program successfully delivered essential WIC services to infants and children in the three pediatric practices. Co-location of WIC nutritionists in pediatric offices provided nutritionists and pediatricians with opportunities to communicate on a regular basis, thus promoting consistent advice, coordination of nutrition services, and continuity of care for WIC families. Measures of WIC credibility and the perceived benefits of the WICMH program improved for pediatric providers. Enhanced nutrition services were delivered to a higher proportion of WICMH children, and this cohort remained continuously enrolled longer.

The improvements in continuity of care and communication of advice about important early feeding practices are highly desirable program effects that are likely to benefit WIC families. The high level of acceptability by the pediatric practices indicates that these partners of the WICMH program see value in the program. The findings suggest that collaboration between the medical home and community agencies such as WIC leads to improved delivery of comprehensive health services for children.

1. OVERVIEW

In 2002, the Food and Nutrition Service (FNS) of the United States Department of Agriculture (USDA) offered competitive WIC Special Project grants for program research with a revitalizing quality nutrition services (RQNS) focus. RQNS is the major WIC initiative for strengthening nutrition education effectiveness and health behavior outcomes. The projects for this cycle of grant funding needed to:

- Assess barriers faced by working families in accessing WIC;
- Develop an innovative nutrition education or service model; or
- Create innovative changes in the clinic environment that promote the relationship between nutrition and health.

The Vermont WIC program was awarded funding to develop, implement and evaluate a three year study, ***WIC Services in the Medical Home: Improving Early Feeding Practices*** (WICMH). Our intervention was designed to improve WIC nutrition education and health behaviors through integration of WIC services into pediatric well-child visits. Specifically, the Vermont WICMH project sought to:

- Provide enhanced nutrition education via more frequent nutritionist contacts at well-child visits;
- Improve customer service to reduce barriers in WIC participation and to promote continuous enrollment; and
- Foster a collaborative and collegial relationship between WIC nutritionists and health care providers, and assure the consistency of risk assessments and nutrition messages.

Experienced WIC nutritionists provided WIC certification and enhanced nutrition education in conjunction with regularly scheduled well-child visits at three pediatric medical practices: one large, urban teaching practice associated with the University of Vermont, College of Medicine, and two smaller rural practices.

Families had as many as ten potential WIC contacts during the critical early years of birth through age two years when eating habits are forming. Post-partum/breastfeeding women and siblings were given the opportunity to be certified at the same time as the infant to facilitate the family's ability to participate in the project. Additionally, older children enrolled in WIC and Children with Special Health Needs (CSHN) were scheduled in conjunction with their pediatric well-child visits, to allow for ongoing coordination of services and nutrition follow-up.

Our evaluation has shown that children who receive WIC services simultaneously with pediatric well-care benefit by having a significantly better chance of receiving WIC services continuously and on schedule during their first year, and probably throughout their first two years. WICMH parents were more likely to receive consistent advice about selected early feeding practices, and were more likely to report social norms that were supportive of the recommended feeding practices.

Coordination of WIC services with pediatric services was well-accepted and positively viewed by pediatric staff. Pediatric staffs' knowledge of the early feeding practices promoted by WIC improved during the project and their view of the importance of WIC to a child's health significantly increased.

The improvements in continuity of care and communication of advice about important early feeding practices that result from increased coordination between WIC nutritionists and the child's medical home are highly desirable program effects. The high level of acceptance by WIC families, the pediatric practices and WIC staff indicates the potential for successful replication by other WIC programs.

This guide provides suggestions for implementation, including templates for choosing a pediatric practice, division of responsibilities, workflow, participant recruitment, scheduling, documentation of care, and evaluation of patient and provider satisfaction with the program. Many resources for starting up a WICMH program in your agency are in the appendices.

WICMH Partner Receives Human Services Award

Dr. Thomas "Mike" Moseley III, (center) of Newport Pediatrics and Adolescent Medicine, received the 2005 Vermont Agency of Human Services Secretary's Award for "excellence in transforming human services to improve the lives of Vermonters." Improving WIC nutrition services for his patients by participating in WICMH was one example of many accomplishments for which Dr. Moseley received recognition.

2. WHY PLACE WIC NUTRITION SERVICES IN THE MEDICAL HOME?

2.1 Problem Statement

WIC is the premier national public health nutrition program, serving nearly one half of all infants and one quarter of all preschoolers nationwide. In 2004, 53% of babies born in Vermont participated in WIC, giving the program a wide sphere of influence over maternal-child health behaviors.

Certification clinics are provided through the Vermont Department of Health's twelve district health offices located throughout the state. Clinics generally operate Monday through Friday, usually between the hours of 8:00 am and 4:00 pm. A few offices are able to offer extended early evening hours on a limited basis. Individual and group nutrition education is offered between clinic visits, and the WIC food benefits are home delivered to all participants.

The average rate of missed appointments at Vermont WIC clinics is 26 percent. This creates a significant cost – both in missed opportunity to provide WIC services to those families, and in dollars spent for staff and clinic operations. Further, 17 percent of enrolled children discontinue participation after their first birthday.

As the proportion of parents in the workforce has grown, it has become increasingly difficult for WIC programs nationwide to recruit new eligible families, and to retain previously enrolled families for the full time that they could receive WIC services. Sixty-three percent of children under the age of six have all available parents in the workforce. When the number of recommended pediatric well visits during the first two years of a child's life (n = 10) is added to the number of WIC certification appointments (n = 5), and the interim WIC second education contacts are also added (n = 4), the barriers contributing to lowered enrollment and retention, and poor attendance at second contact activities, become clear. Focus groups with former Vermont WIC participants found that many working women missed or failed to schedule clinic appointments because the effort of getting to clinic outweighed the perceived benefits of WIC, or they had difficulty finding time to reschedule missed appointments because they had too many other tasks needing attention.

Required Health Visits in First Two Years:

10 well-child doctor visits
+ 5 WIC clinic visits
+ 4 WIC nutrition ed visits
19 total visits

Consistency between WIC and the pediatric provider strengthens nutrition messages to families. Physical measurements, hemoglobin and lead testing are done both at WIC clinics and in the child's medical home. Besides being duplicative, the results may not be the same due to technique or equipment differences. Thus,

parents may receive conflicting interpretations of their child's growth and hematological profiles.

Vermont WIC nutrition assessment data pinpointed additional problems:

- Breastfeeding rates were below the Healthy People 2010 goals.
- Parents of 6.2% of infants and 27% of children reported using one or more inadequate or inappropriate feeding practices.
- Pediatric Nutrition Surveillance data for Vermont indicated that nearly one-third of children under the age of five years were at risk for overweight as evidenced by Body Mass Index (BMI) or weight for height comparisons greater than the 85th percentile.

By providing ongoing nutrition education as part of each pediatric well-child visit, WIC nutritionists and pediatricians would provide consistent, developmentally appropriate information to families that could positively impact feeding practices by addressing them in their early stages.

Additionally, Vermont faces a unique challenge in delivering WIC nutrition education between certification appointments. As a predominantly rural state with relatively few urban centers, Vermont is the only state WIC program providing the food benefit via home delivery. Thus interim nutrition education activities are not tied to distribution of a food instrument, making it difficult to motivate families to attend.

For the past several years, the Vermont State WIC plan has included goals, objectives and activities designed to increase the proportion of participants who receive mid-certification nutrition education. We believe the WICMH model would support the desired outcomes for increased interim nutrition education.

2.2 The Medical Home as a Partner for Nutrition Education Services

The Vermont WICMH model was developed to address several challenges to providing WIC in Vermont. These challenges are not unique to Vermont; they are shared by many other WIC programs, and include the needs to[1]

- Improve early feeding practices, including breastfeeding initiation and duration rates;
- Increase the program's ability to respond proactively to emerging health issues;

- Increase participation in nutrition education activities between certification visits;
- Improve participant retention rates and continuity of enrollment beyond infancy; and
- Increase communication and coordination between WIC and the enrolled child's medical home.

In November 2001, the American Academy of Pediatrics (AAP) issued a policy statement that recognized the importance of working collaboratively with WIC to ensure high quality and cost effective health care for all children. Specifically, they have identified strong collaboration as a key step in identifying and accessing all of the medical and non-medical services needed to help children and their families achieve their maximum potential.[2]

Uniting efforts with pediatricians offers an opportunity to facilitate and simplify access to services for participants, create synergies between WIC nutritionists and health care practitioners, increase communication and coordination between WIC and the medical home and provide additional opportunities for recruitment and continuing enrollment of participants.

3. THE IMPACT OF WICMH

3.1 Benefits for WIC Families

One case that stands out is a little girl I followed for WIC. She was two years, nine months when I first saw her in May of 2003. She weighed 45 lbs and was gaining at the rate of 6-8 lbs every six months. Mom was overweight too, and an underlying issue was her own parenting skills and inability to set limits. I met with her regularly and saw her last a couple weeks ago. The child's BMI has gone from almost 23 to under 19. She has gone from wearing size 8 to size 5 and looks like a totally different child.

When praising mom, I asked "What did it?" She said, "I just did it. I set the limits and got rid of the junk, I got rid of the bottle, cut back on the Kool-Aid (She had been giving 20 - 30 oz in a bottle), and stopped buying all the stuff she threw fits over." Mom also limited TV to only 1 hour a day.

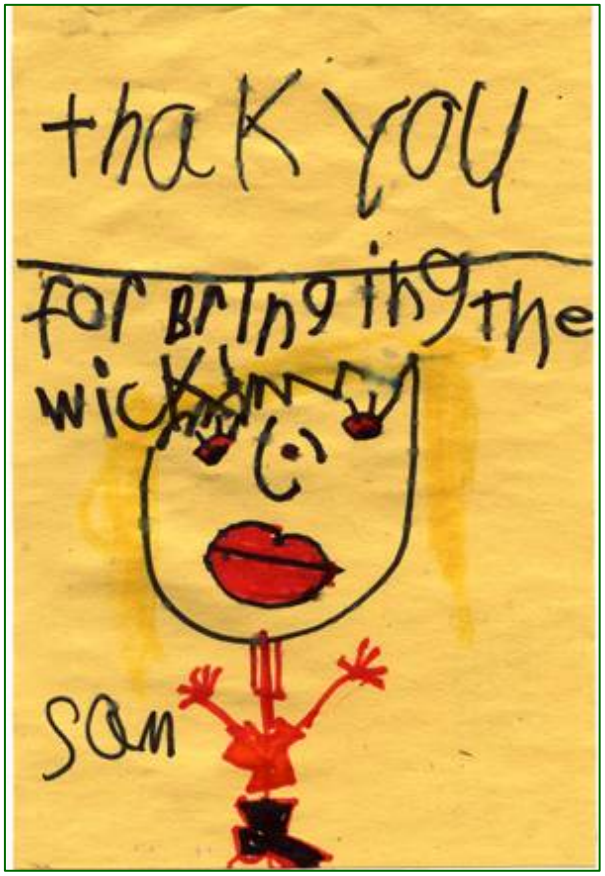
Mom stated that not only had her daughter's weight improved but her attitude was different; "She responds very well to the more structured lifestyle." Mom said with tears in her eyes, "I was beginning to think she would never look like a normal little girl, now just look at her!" Mom's own attitude had softened also, from very defensive and offended that she was asked to meet with the nutritionist to thanking me for my help and support. This was the girl's last WIC visit and both mom and I were teary. "Who knows?" said Mom. "Maybe I can quit smoking next".

This probably would never have happened without the tag-team approach of the pediatric nurse practitioner and me constantly reinforcing messages about the need to address the nutritional status of this child. I won't ever forget the look in mom's eyes.

WICMH Nutritionist

WICMH nutritionists observed that eligible new families seeking WIC services felt less of the stigma sometimes associated with program enrollment when services were made available at their pediatrician's office versus their usual WIC clinic site. They also observed that WICMH families felt more respected, and greatly appreciated the convenience of making just one appointment for comprehensive well-child services instead of two. Evidence of strong acceptance of the combined WIC and well-child services can be seen in the comments of WICMH parents:

- ♥ *"Great idea - we don't have to do everything twice"*
- ♥ *"This is very helpful- our schedule is so busy - it's hard to always get to my WIC appointment."*
- ♥ *"It's nice to know there will be one face for the next couple of years to deal with for WIC."*
- ♥ *"It just makes sense."*
- ♥ *"This last year combining it with the appointments at the doctor's office has been a tremendous improvement. I felt more respected. Much more convenient, I did not have to set up two different appointments, everything was done together."*
- ♥ *"I very happy that I can now make my WIC appointments at the same time of my doctor visits."*



The WIC nutritionists working in the medical home setting further observed that families came to appointments better prepared to ask nutrition and feeding related questions, and that receiving WIC nutrition education in this professional environment elevated its importance and credibility for families.

Working families and higher–income families eligible for WIC program benefits were especially likely to utilize this option for WIC certification. The nutritionists felt that many eligible families served by the WICMH model would not otherwise have chosen to receive WIC benefits. Special populations, including newly arrived refugees and children with complex medical needs, were also able to be served more quickly and more comprehensively.

The evaluation results demonstrated several important positive outcomes for WIC families:

- A higher percentage of the WICMH cohort was continuously enrolled in WIC during the first year of life;
- WICMH children were more likely to receive WIC services on schedule;
- More WICMH children received interim nutrition education;

- WICMH parents received better coordinated and more consistent advice from WIC nutritionists and their pediatricians around several selected early feeding practices; and
- WICMH parents were more likely to perceive a supportive environment for adopting several of the recommended early feeding practices.

3.2 Benefits for Pediatric Practices

"I provided a brief training to Newport pediatric staff of proper hemoglobin technique with the HemoCue® machine. I also provided a copy of our anthropometric measurement techniques for their newest nurse."

WICMH Nutritionist

"At the request of University Pediatrics professional staff, we have updated nutrition materials in the office, particularly the nutrition-related sections in the resource manual used by triage phone nurses, as well as posters for the waiting room and feeding guidelines for client distribution. "

WICMH Nutritionist

"Our staff has learned so much from the nutritionist about feeding practices, promoting breastfeeding and proper interpretation of anthropometric measurements. We pediatricians appreciate being able to give one consistent message to our families and to reinforce rather than contradict our colleagues at WIC."

WICMH Pediatrician

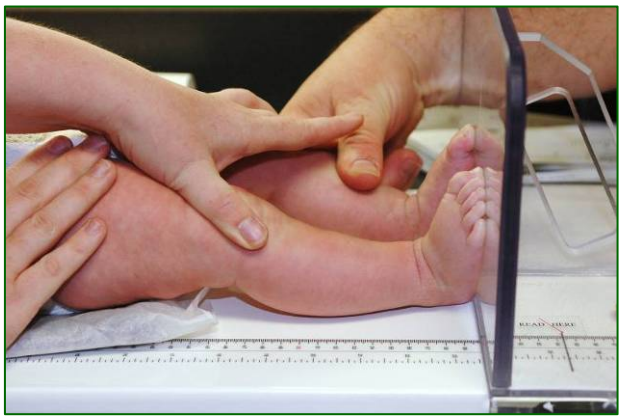
Physicians and support staff valued having nutrition expertise in the office. Medical staff within the intervention practices also commented positively on their increased knowledge as a result of the presence of WIC nutritionists. For example, one of the practices had an unusual string of low hemoglobin results. WIC staff offered their expertise and re-trained the pediatric nursing staff on sampling technique, and the problem was resolved.

Some pediatric practice staff also began modeling the open-ended assessment questions and client-centered interview style of the WIC nutritionists. They felt that the opportunity to observe this modeling was much more effective for improving their skills and increasing their nutrition literacy than more traditional types of training. Senior physicians, residents and nurses all reported increased learning.

In the Burlington practice site, the WIC nutritionists were frequently invited to present didactic instruction during the rotations of medical students and pediatric

residents about early childhood nutrition and provide an orientation to the WIC program.

WIC nutritionists, pediatric residents and senior physicians collaborated to develop new well-child encounter forms utilizing the Bright Futures in Practice model; this resulted in a greatly expanded nutrition assessment as well as assessment of physical activity and sedentary behaviors as part of the well-child exam.



In the past, WIC has identified concerns related to differences in measurement technique and interpretation and consistency of nutrition messages delivered by WIC and by the child's medical home. At the start of the intervention, providers in the WICMH intervention practices participated in a WIC-led training on measurement techniques and use of the pediatric growth charts. They commented frequently on the benefits of increased standardization of measurement and interpretation, as this led directly to more positive and consistent communication with parents regarding the implications of the data collected.

Providers also noted that the increased satisfaction expressed by families linked to provision of WIC services in the pediatric office greatly exceeded the expectations held at the start of the project.

Pre and post pediatric staff surveys reported that participating in the joint program significantly improved attitudes about collaboration with the WIC program:

- Coordination of WIC services with pediatric services was more positively viewed by pediatric staff;
- Pediatric staffs' knowledge of the early feeding practices promoted by WIC improved;
- Pediatric staffs' beliefs regarding the advantages and the disadvantages to host the WICMH program improved; and
- Pediatric staffs' view of the importance of WIC to a child's health increased significantly.

3.3 Benefits for WIC Staff

An extremely important outcome reported by all the WIC nutrition staff involved in the project was increased job satisfaction, which resulted from a sense of

opportunity for professional growth and development. The Newport WIC nutritionist described this unexpected staff benefit:

> *"The continuing education that being part of a pediatric practice offered me… the collegial relationship… the information that I picked up from the pediatricians, nurse practitioner and nurses and the discussion/review about patient cases after the visits... have allowed me the opportunity to not only to broaden the depth of my own knowledge base and nutrition practice, but to be truly engaged in the pediatric health care that our WIC families are receiving at Newport Pediatrics."*

District office staff reported improved relations between the practice and the local health department. In addition to nutrition information, staffs exchanged information on immunizations, hemoglobin readings, blood lead levels, seasonal health advisories, and other public health topics.

3.4 Study Design and Highlighted Results

We used a complex variety of data sources and assessment methods, including WIC-generated data, surveys and telephone interviews, to evaluate outcome and process measures. An overview is presented below. For a more in-depth look at the specific results, please refer to the project's final report, *WIC Services in the Medical Home: Improving Early Feeding Practices: 2002-2005.* (For a copy, visit the online *WIC Works Resource System, **http://www.nal.usda.gov/wicworks**).*

- At the start of the intervention, clinical and non-clinical pediatric staff in the study practices completed a self-administered written survey regarding their impressions of the credibility of WIC staff, the benefits and disadvantages of collaborating in the WICMH model and their knowledge regarding the nutrition advice families receive from WIC around early feeding practices. The survey was repeated at the end of the intervention.(See **Appendix 1** for the survey tool).

- Process measures were tabulated for the children who received WICMH services, and included the number of certification and recertification visits completed, number of additional contacts and the proportion of children with continuous enrollment. Some service delivery indicators were measured for the total number of infants and children who received any WIC service at their pediatrician's office, as well as the population sub-set described below.

- A telephone survey was administered to a sub-set of the total study population during the final year of the project. WIC parents whose children were enrolled in the project at birth were contacted by the survey contractor at the child's one year birthday. For a comparison group, parents of an age-matched sample of children who received the standard WIC services during their first year of life were also surveyed. The telephone survey covered the impact of the WICMH model on satisfaction with WIC services, and on self-efficacy, perceptions of social norms and message consistency around

targeted early feeding behaviors, including exclusive breastfeeding duration. (See **Appendix 2).**

Table 1 describes the total numbers and types of visits that were completed during the intervention: 283 initial/new certification visits, 1557 recertification visits, and 157 reinstatement visits.

Table 1: Total WICMH Visits

Pediatric Practices	Burlington	Newport	Middlebury*	Total
New/Initial Certification	129	140	14	283
Recertification	1483	19	55	1557
Reinstate after termination	75	74	8	157
Total visits/actions	1687	233	77	1997

* The Middlebury pediatric practice closed before the end of the project

Additionally, WIC nutritionists provided a total of 305 interim nutrition education contacts to the WICMH cohort (**Table 2**). These were typically offered at pediatric visits when a well-child visit was scheduled, but a WIC certification was not required; for example the second week and at fourth and ninth month visits.

Table 2: Interim Visits for Nutrition Education for Infants, Birth – 12 Months

Pediatric Practices	Burlington	Newport	Middlebury*	Total
Total Nutrition Education Contacts: WICMH Infants	260	18	27	305
# infants having 1 contact	164	14	10	188
# infants having 2 contacts	30	2	5	37
# infants having 3 contacts	12	0	1	13
# infants having 4+ contacts	0	0	1	1
Unduplicated # of infants receiving additional nutrition education contacts	206	16	17	239

* The Middlebury pediatric practice closed before the end of the project

259 WIC parents whose children were enrolled in the project at birth and were followed for at least one full year (WICMH cohort) and 259 parents of an age-matched sample of children who received the standard WIC services (Standard Care cohort) were identified as the WICMH evaluation group. A total of 373 of these families were identified by the telephone survey contractor as having a valid phone number, and 294 completed telephone surveys were obtained.

A significantly higher proportion of the WICMH cohort received the expected visits on schedule and were continuously enrolled in the WIC program (**Table 3**). The parents in the intervention group were also significantly more likely to receive consistent advice on selected feeding practices from both the WIC nutritionist and their child's pediatrician (**Table 4**).

Table 3: Percentage of children in the WICMH cohort (n=259) continuously enrolled at 12 months since birth compared to the Standard Care Cohort (n=259)

Visit Continuity	WICMH Cohort	Standard Care Cohort	
Received all expected visits by age 12 months	66%	55%	p=.012
Terminated at least once in first 12 months	21%	33%	p=.002

Table 4: Percentage of WIC parents reporting receiving feeding advice from WIC and the pediatrician that was the same from both sources

Feeding practice	WICMH Cohort	Standard Care Cohort	
Avoid putting baby to sleep with bottle	74%	60%	P=.03
Stop feeding when baby signals he's full, even if some food is left	57%	40%	P=.03
Wait to start solids until baby is 4-6 months old	47%	30%	P=.008
Throw away left-over formula or baby food after feeding	62%	41%	P=.006

However, results of the WICMH intervention on other feeding practices, including breastfeeding, as well as total number of inappropriate feeding practices reported,

showed no impact. These results could be due to inadequacies of the program design, level of program implementation, or possibly the measures used to assess feeding behaviors.

3.5 Discussion

Overall, the WICMH program achieved many important objectives. Co-location of WIC nutritionists in pediatric offices provided nutritionists and pediatricians with opportunities to communicate on a regular basis, thus promoting consistent advice, coordination of nutrition services, and continuity of care for WIC families. Enhanced nutritional services were delivered to a higher proportion of children, and WICMH children remained enrolled longer. Measures of WIC credibility and the perceived benefits of the WICMH program improved for pediatric providers. This pilot study of co-location of pediatricians and WIC providers suggests that collaboration between the medical home and community agencies leads to improved delivery of comprehensive health services for children and families.

4. THE MODEL: WIC NUTRITION SERVICES IN THE MEDICAL HOME

4.1 Description of the Model

While the model requires state and district office staff to develop new systems and linkages to non-WIC staff and facilities, the significant improvements in benefits to WIC families, WIC staff and pediatric providers far outweigh the effort.

In this model, WIC nutritionists are placed in pediatric practices on a part-time basis to provide families access to WIC certification and nutrition education at regular well-child visits. Anthropometric measures, hemoglobin and blood lead levels, normally performed by WIC district office staff in the traditional Vermont model, are obtained by the nursing staff of the pediatric practices and shared with the WIC program.

By coordinating scheduling with the child's medical home, WIC nutritionists have the opportunity to see enrolled infants and children at the standard six week and 6, 12, 18 and 24 month visits when WIC certification is due, as well as at the newborn, 2 week, and 4, 9 and 15 month well-child appointments. For children ages newborn through two years, the model offers a total of ten potential encounters, and vastly improves coordination of WIC nutrition education and services with the family's health care and health education from the medical home.

While in the pediatric office setting, WIC nutritionists also conduct outreach to recruit WIC-eligible children, particularly newborns, and previously enrolled individuals whose program participation has lapsed. Older children enrolled in WIC and Children with Special Health Needs (CSHN) are also scheduled in conjunction with their pediatric well-child visits to allow for ongoing coordination of services and nutrition follow-up with the family.

Depending on the type of pediatric practice, additional synergies to improve nutrition education and services are possible as a result of the WICMH model. Some examples from Vermont's own experience include:

- Infant nutrition didactic for pediatric residents in the office setting, including orientation to WIC program services;
- Provision of Farm to Family coupons to WIC families in the practice in conjunction with certification or nutrition education visit;

- Early breastfeeding support and referral for home visiting services;
- Provision of up-to-date nutrition materials in the medical office, particularly the nutrition-related sections of resource manuals used for telephone triage, as well as feeding guidelines for patient distribution and posters for the waiting room;
- Facilitated entry to WIC services for refugee families, by enrolling them into WIC at their first pediatric visit, usually 1-2 weeks after arrival in the country. By consolidating WIC with well care appointments, services such as interpretation and transportation, which are costly, and difficult and time-consuming to arrange, can be provided at a single time and location. The WIC presence at the medical home for refugee children enables more frequent nutrition education contacts in addition to the initial WIC certification, and can result in rapid and significant improvement in the children's nutrition status.
- "Brown bag lunch" nutrition education series for physicians and nurses;
- Training for nurses in proper hemoglobin technique with the HemoCue® machine, and anthropometric measurement techniques;
- Development of new well-child encounter flow sheets based the popular Bright Futures in Practice Encounter Forms for Heath Professionals, which resulted in a much expanded nutrition assessment as well as inclusion of TV time and physical activity questions;
- Facilitated authorization and distribution of WIC breast pumps for mothers returning to work at the 1 month well-child visit, with follow-up and education at the 2 month well-child visit;
- Facilitated acquisition of breast pumps for medical need by improving coordination between the lactation consultants at the hospital and the pediatric practice; and
- Joint scheduling for children enrolled in both WIC and Children with Special Health Needs.

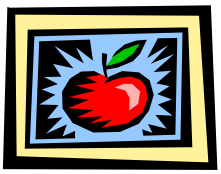
4.2 Implementation

Strategies for implementing WICMH in your program are described below.

Step One: Cultivate support of local agency staff

It is important to first cultivate the support of all local agency staff. Staff may initially encounter more work in order to coordinate services between their office and the physician's, and to change procedures around scheduling, appointment letters, tracking participants, accessing the participant's WIC record, etc. In our model, the nutritionists also were responsible for verifying income, residency and identity, which meant they needed training in these clinic functions.

WICMH nutritionists' usual WIC clinic time is replaced by time in the pediatric office. This provides the unexpected benefit to WIC nutritionists of collegial interactions with other pediatric practitioners, something not typically available in the standard WIC clinic model.



Best practice: Sell the benefits of WICMH to local agency staff: a reduction in missed certification appointments, an increase in continuous enrollment, facilitated new enrollment and reinstatement, and improved nutrition outcomes for participants.

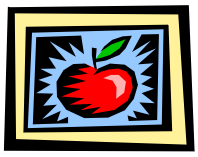
Step Two: Recruit pediatric practices

A questionnaire can be used to gather information needed to assess the suitability of a pediatric office for the WICMH model. (See **Appendix 3** for a practice assessment questionnaire.) Characteristics to consider when selecting a practice:

- A positive relationship currently exists between WIC and the practice;
- The medical providers are committed to the total well-being of their patients, and to WIC program services;
- The physicians, nurses and office staff are willing to coordinate scheduling to accommodate outside staff;
- The periodicity of well visits and pediatrician work schedules can be coordinated with WIC periodicity and WIC nutritionist work schedules;
- The size of the practice, including size of the Medicaid patient base, is significant enough to merit assignment of a WIC nutritionist to the practice;
- The number of physicians and nurses providing well-child care and the pediatric patient population is realistic, given the amount of time the WIC nutritionist will be able to spend at the practice.

You and/or the pediatric practice with which you are collaborating may desire a formal agreement. A sample Memorandum of Understanding that is easily adaptable to your specific situation is included as **Appendix 4**. The following table describes the major expectations for each party:

Pediatric Practice	Local WIC Agency
• Assist in identifying currently-enrolled WIC children • Assist in identifying new potentially WIC-eligible children • Integrate the scheduling of well-child and WIC appointments • Provide confidential area for WIC services • Perform anthropometric and hematological measurements. • Accept WIC documentation in the medical record • Respect the professional expertise of the WIC nutritionist • Provide translators if needed	• Complete WIC certification and/or second nutrition education contact • Provide WIC outreach to new, potentially eligible families • Communicate WIC assessment findings to child's primary care provider • Provide documentation of the WIC visit for inclusion in the patient medical record, and the WIC individual record • Provide nutrition expertise and resources to the medical staff • Provide additional nutrition services as time allows



Best practice: Target pediatric practices in your area with whom you have a good collaborative history, and that serve a high proportion of WIC/Medicaid eligible children. Develop a proposal using the tools in the Resource section of this document; include some of the Vermont findings that relate to the outcomes for families. Pitch your proposal in a face-to-face meeting with selected pediatric staff, including the practice's decision-makers.

Step Three: Coordinate WIC and well-child appointments

Once all parties are in agreement to begin WICMH, assess how the physician office works (scheduling, patient flow, chart flow, communication systems) to determine how to align WIC services with the office's routine.

Workflow

The size of the pediatric practice and its WIC-eligible caseload, office lay-out, individual physician work styles, and the enthusiasm of both WIC and medical staff

in embracing the collaboration are key determinants of how the integrated appointment will flow.

Depending on patient flow, having the WIC nutritionist meet with families in the exam room during or immediately following the nursing evaluation (including anthropometric measurements) or during the physician exam, works best for achieving the goals of improved communication and message consistency.(see sample flow model on next page).

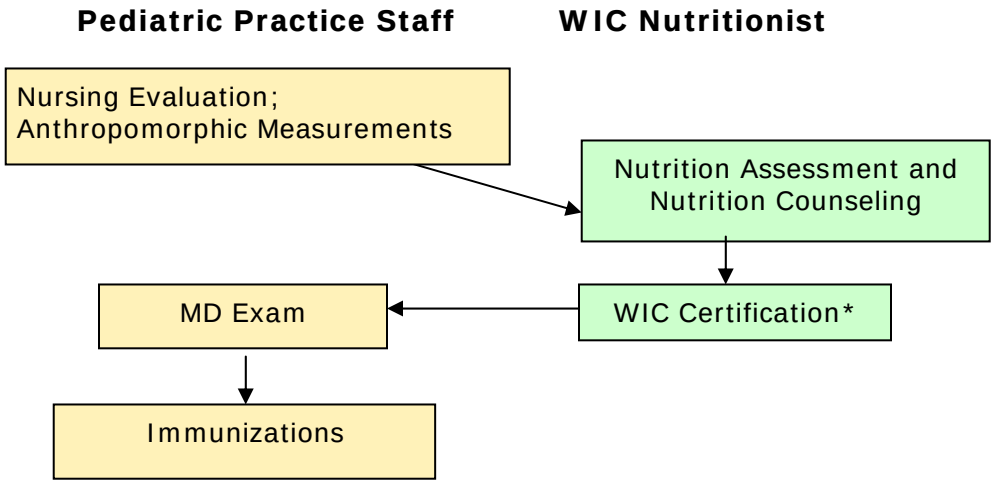
In our Vermont experience, some nurses and physicians preferred having the WIC nutritionist present with them during their exams, so that nutrition questions could be answered as the parent asked them. This flow model seemed to work best in the two smaller practices.

In the larger teaching practice, the nutritionist sometimes saw the family during the nursing evaluation, but was more likely to do the WIC nutrition assessment between the nursing and physician assessments. Findings would then be communicated to the doctor verbally or via the encounter flow sheet; however, this was very fluid from provider to provider.

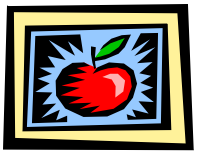
In some practices, it may be necessary for the nutritionist to do the assessment, counseling and certification after the physician exam. Another option is to schedule the child to come to the medical appointment 30 minutes early to do the WIC components. We have found though, that these other flow models may limit communication between the nutritionist and the physician, and thus decrease the opportunity for message consistency.

There may be other flow models that we have not experienced; experiment, be flexible and choose whatever works best for both WIC and the pediatric office.

Recommended WICMH Visit Flow Model



*WIC Certification when required



Best practice*:* Be flexible! Work with both the clinical and non-clinical pediatric staff to meet flow needs. This means being open to changing a given flow model on an as needed basis. Whenever possible, complete the WIC part of the visit prior to immunizations!

Scheduling

WIC and pediatric office staff will need to coordinate "behind the scenes" to accomplish seamless scheduling of the combined WIC-well-child appointments. This was the greatest challenge for our Vermont WICMH project, especially in the large teaching practice. The smaller rural practices were more successful with coordinating the WIC and two-week appointment.

Identify the persons and procedures in the pediatric office that cover patient scheduling, and identify your own target population; for the VT WICMH project, our target population was children birth to age two years. If scheduling software is used, ask if the WIC nutritionist can have a column on the scheduling page; if a paper system is used, discuss how the WIC nutritionist will be integrated into the schedule.

We found that there was a very high demand for certification and recertification appointments, so we worked with the pediatric schedulers to make sure these appointments received a higher priority for nutritionist time than interim education contacts. (In Vermont, foods are home delivered and no food instruments are distributed at interim nutrition education contacts.) In the smaller pediatric practices, where it was easier to capture the newborns, this initial appointment was the most frequent, and the mother was certified post-partum along with her infant. In our large teaching practice, the WIC nutritionists performed a higher proportion of recertifications and interim visits than newborn appointments.

It is important to communicate to the pediatric office the need for timely WIC appointments because they are usually tied to receiving WIC foods. Nutrition education visits for low risk children that do not involve issuance of vouchers or WIC checks may be a lower priority. Sample scheduling instructions for the pediatric office are in **Appendix 5**.

Because the periodicity of infant pediatric well visits is so frequent, parents generally schedule the next visit at the check-out station as they are leaving. They are instructed to ask for the combined WIC and well-child visit, but we initially found that parents often forgot to do this. **Appendix 6** provides a reminder card that the WIC nutritionist can give to parents to take to the check-out window with them.

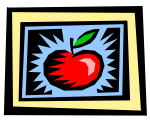
Documentation

It's important to develop a documentation system that meets the needs of both the pediatrician and the WIC program; a record of the WIC assessment and education

provided needs to be placed in child's medical record, and the local agency WIC records. In the Vermont WICMH project, all partners maintained paper charts, as opposed to electronic records.

Vermont WIC developed carbonless duplicate, age-specific nutrition education flow sheets specific to each age of the medical periodicity schedule. A copy was filed in both the WIC record and the medical record. The flow sheets and their guidelines correspond with the recommended schedule of well-child health supervision visits. Content was based on *Bright Futures in Practice: Nutrition*[3]*; Bright Futures: Guidelines for Health Supervision of Infants, Children and Adolescents – Encounter Forms for Health Professionals*[4]*;* and Dr. T. Barry Brazelton's *Touchpoints.*[5] The nutritionists also had permission to document in the progress note section of the medical record when appropriate. The Nutrition Education Flow Sheets and Guidelines can be found in **Appendix 7.**

A laptop computer could be used to access electronic WIC data, either through a "hard" line to the Internet, through a wireless connection, or by pre-loading client information for off-line access in the pediatric practice office.



Best practice: Designating one "point person" from the local agency and a counterpart in the pediatric practice helps foster smooth coordination among all parties.

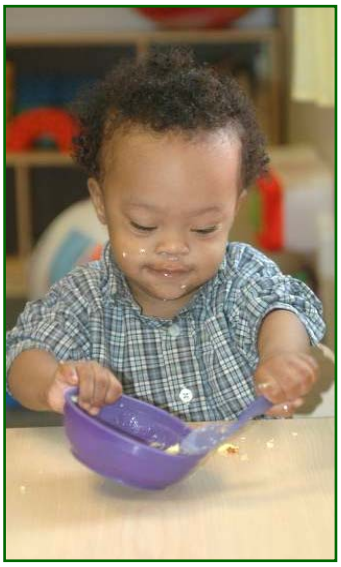
4.3 Coordinated Feeding Messages

As mentioned in the previous section of this manual, WIC nutritionists developed a set of nutrition education encounter forms and guidelines based on *Bright Futures in Practice: Nutrition,* and Dr. T. Barry Brazelton's *Touchpoints*. These focused on discrete time periods in the first two years of life that correspond with the recommended schedule of well-child health supervision visits. They were used to document assessments and nutrition education, to provide communication between the medical practice and the WIC office, and to act as data collection tool for project evaluation.

WIC and pediatric staff were committed to providing unified, consistent messages around three major areas of early feeding practices. The target areas correspond to the WIC Inappropriate Feeding Practice risk eligibility codes, and the messages given were aimed at helping parents avoid such feeding practices.

The first group of feeding practices focuses on what foods are offered i. e. the types of foods and their nutritional content. Examples include: giving foods other than breast milk or iron-fortified infant formula as the primary source of nutrients for the first 6 months of life; feeding cow's milk during the first year of life; non-fat or reduced-fat milks as the primary milk source between 12 and 24 months of age.

The second group of feeding practices covers practices related to how foods are prepared and offered, targeting safety, satiety and independence. Examples include: routine use of a bottle to feed liquids other than breast milk, formula or water; feeding solids in a bottle; allowing infant/child to fall asleep with a bottle.



The third group of feeding practices is related to when certain feeding practices are introduced, focusing on the developmental stage of the child. Examples include: early introduction of solids into the daily diet; giving foods of inappropriate consistency that put the infant/child at risk of choking; delayed introduction of finger foods/ self-feeding.

A complete list of inappropriate early feeding practices addressed in Vermont's model is provided in **Appendix 8**.

4.4 Recruiting and enrolling families in the WICMH Model

Once the nutritionist is established at the pediatric practice, both partners should identify and schedule WIC participants. Any potentially eligible WIC families may be encouraged to use the joint appointments, and the pediatric practice can also share the enrollment option at prenatal visits with prospective parents. In order to comply with HIPPA regulations, you may need to sign a confidentiality statement with the pediatric practice. For currently enrolled WIC children, the information sharing documents that are part of the WIC record will satisfy the HIPPA requirements as long as the pediatrician is specified on the signed release/request.

We used a variety of methods to build our WICMH caseload:

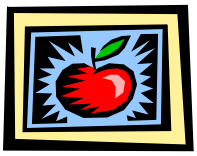
1. **Existing WIC participants**
   Flyers offering the WICMH service were given to parents by the pediatrician, and were also direct mailed from the local WIC office. Parents were instructed to request a combined WIC/well-child appointment when making their well-child appointments at the pediatrician's office.
2. **Newborns and mothers who received WIC during their pregnancy**
   We are lucky in Vermont to have a system where hospitals refer newborns to our district health offices. Once we received a new-born referral, we contacted the mother by phone or mail to inform her of the WICMH option for new infant certification. In order to enhance the success of the intervention, we also offered to certify the mother at the same pediatric visit. The mother then called the pediatric practice to schedule the well-child exam and WIC for herself and her new baby.

3. **Lactating mothers**
   In addition to certifying mothers of newborns in WICMH, we also provided recertification for breastfeeding mothers at their baby's 6 month joint WIC/well-child visit. Other services to these mothers, such as high risk follow-up, breastfeeding support, and breast pump rental may also be able to be coordinated with a well-child visit; alternately, these kinds of services may need to be provided at the WIC local agency.

4. **Siblings**
   The Vermont WICMH project focused on providing joint well-child/WIC appointments to children birth through age 2 years. However, all children up to age 5 years could potentially be served using this model. As with our mothers of newborns, we also offered to recertify the older WIC–enrolled siblings of the WICMH cohort.

5. **New participants**
   Parents of infants/children enrolled in the Vermont Medicaid program, and parents of infants/children with no health insurance, who were not already known to WIC were outreached about enrolling in WIC and/or Medicaid. Some families were able to be newly enrolled right at the pediatric office. Others did not have all the necessary documentation with them to prove income or residency and had to be referred to the local WIC office for initial enrollment. Once enrolled however, these families could then participate in WICMH.

Sample participant recruitment flyers and letters are in **Appendices 9 and 10**.



Best practice: Train the scheduling staff at the pediatric practice to ask any families with children under two if they would be interested in the WICMH service.

4.5 Practice Profile I: Newport WIC and Newport Pediatric and Adolescent Medicine

The Health Department's Newport District Office (DO) is located in a very rural region of the state known as the "Northeast Kingdom". The DO serves a number of small communities and the WIC case load is approximately 1290 participants. The pediatric practice recruited for the project is a federally designated rural health center, which employs two pediatricians and one nurse practitioner, and serves a patient population that is 85% Medicaid/WIC eligible. At the time of the pilot

project, nearly half of all Newport district's WIC clients already identified this practice as their medical home.

One of the WIC nutritionists already employed by the Newport DO was out-stationed to the pediatric office two days per week, by simply replacing DO clinic time with clinic time at the pediatric office. WIC staff and pediatric office staff coordinated "behind the scenes" to schedule the combined WIC-well-child appointments. New babies whose mothers were on WIC were identified in the hospital and automatically scheduled for follow-up on days with joint staffing. Priority in scheduling was given for all WIC certification appointments.

At the peak of the project, nearly 25 per cent of the DO's WIC caseload was seen at the pediatric office for one or more visits. In order for the nutritionist to have seen all clients at their combined WIC - Well-child visits (birth - age 5 yrs) a full time nutritionist would have been needed to accommodate the demand.

4.6 Practice Profile II: Burlington WIC and University Pediatrics

Burlington, located on Lake Champlain in northwestern Vermont, is the state's largest city. Unlike most Vermont communities, which are small and quite rural, the Burlington area is a sprawling urban/suburban center, with growing immigrant communities from Eastern Europe, Southeast Asia, Tibet and most recently, Eastern Africa. The Vermont Department of Health's Burlington District Office (BDO) has the largest WIC caseload in the state, serving over 2700 participants.

University Pediatrics (U Peds), a practice affiliated with the state university's academic medical center, was chosen as the partnering pediatric practice for Burlington. The practice is staffed by seven pediatricians, most of whom directly supervise a team of residents. Fifty percent of the practice's patients are enrolled in Vermont's Medicaid health insurance program.

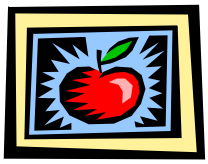
Using funding from the Special Project grant, two WIC Nutritionists were hired by the VDH Central Office to provide WIC services at University Pediatrics a total of three days per week. A laptop computer was used to access the electronic WIC data system from the practice site. Because of the type of scheduling software used by the practice, a separate, paper appointment system was required for the nutritionist.

Because of the unique status of this practice as a teaching site for the College of Medicine, nutritionists were able to take advantage of opportunities to orient pediatric residents to WIC program services, breastfeeding support and infant nutrition issues. Also, because the practice was the designated medical home for newly arrived refugee families, enrollment and ongoing nutrition education and

services for this at-risk population were greatly improved and simplified for the families by stationing WIC nutritionists in the practice on a regular basis.

"We continue to facilitate entry to WIC services for Somali Bantu refugee families, many of whom have experienced chronic malnutrition, by enrolling them into WIC at their first medical visit, usually 1-2 weeks after arrival in the country. On subsequent interim visits, we've observed impressive growth recovery in these children."

WICMH Nutritionist



Best practice: Developing program objectives at the outset will help you monitor the successes of your program, and target the areas that need modification. Some sample objectives:

- Within 4-6 months of project implementation, 75% of the nutritionist's schedule will be filled.
- ___% of WIC eligible babies will be enrolled in WICMH at their newborn/first visit at the pediatric practice each month.
- Within 6-12 months of implementation, ___ number of participants will be receiving WICMH services.
- ___% of children due for certification in a given month will be seen at the pediatric practice.
- The percentage of participants continuously enrolled in WIC for their first year will increase from ___ to ___.
- The 'no-show" rate will decrease by _____% at the end of the first year.
- 100% of pediatric office staff will perform anthropometric measurements consistent with WIC protocols.

5.0 CHALLENGES AND LESSONS LEARNED

This WIC nutrition services model needs to be given adequate time to build a caseload at each pediatric practice. It can take 4 - 6 months of recruiting families into the model before there is enough synchronization between children's WIC and pediatric periodicity schedules to make the most efficient use of the nutritionists' time.

Pediatric practices with more than one provider seem better suited for WICMH than solo practitioners. Vermont began our project with three different types of practices, which were described earlier. The solo practitioner in the Middlebury area relocated his practice to another state a little over a year into the project, thus the collaborative relationship was lost in that district. We found both strengths and weaknesses in implementing the WICMH model in a middle-sized rural practice compared to a large urban practice. We hope some of the tools we have provided in this guide will help you define your own goals and objectives, your choices for a partnering practice and other tasks in your decision–making process.

The model seems to work best for children birth to age two years because the WIC and pediatric periodicity schedules overlap. Beyond age two, children usually have just one pediatric well visit per year, but need to be recertified for WIC every 6 months, with interim nutrition in between.

Scheduling and communication are universal challenges in the health care system. Whether an electronic system or paper schedule is used, the scheduling aspects of this model require constant vigilance, flexibility, creativity and communication. Designating a "point person" in both the practice and local agency is essential to efficient workflow.

Tracking of clients through the WIC electronic data system is also critical in identifying which children need to be seen within a specified time frame that is driven by both date of recertification and availability of a doctor's appointment with that time frame.

The local agency nutrition and administrative staff should meet with the pediatric practice to set up communication systems to track appointments, especially no-shows and reschedules. It takes excellent communication and coordination to assure that families who do not keep their scheduled WICMH appointment at the pediatrician's are rescheduled before their WIC certification period ends. Due to busy physician schedules this can be tricky to

Come to WIC at University Pediatrics!

Your child_____ needs a WIC appointment **and** a check-up appointment at University Pediatrics. Please call them at 847-4696 right away and ask for a well-child/WIC appointment. You need to be seen by_____ to continue on WIC.

Please complete the enclosed WIC paperwork and bring it to your University Pediatrics appointment, along with:

- Your child's Medicaid or Dr. Dynasaur card
- Identification for yourself

If you do <u>not</u> want your WIC visit at University Pediatrics, please call the Burlington WIC office at 863-7323 for an appointment at a regular WIC clinic.

accomplish, and at times, a family may need to be referred back to the local agency WIC clinic for a WIC only appointment to assure that program benefits do not stop.

Our large teaching practice had a high staff turnover rate, as students and residents progressed through their rotations. This practice also had a high turn-over of nursing staff, thus requiring ongoing orientation to WIC measurement techniques, scheduling protocols and other aspects of WICMH. This presented challenges to the continuity of care and patient education the model sought to enhance.

District offices found it challenging to replace nutritionist time in the local agency. As one manager noted:

> *"From a supervisory viewpoint, the project removed a .5 FTE Nutritionist from other aspects of the district office's work for 2/3 of her time. This had a significant impact on special formula handling, breastfeeding counseling and availability to staff as a mentor and resource, and standard clinics. But on the other hand, having 20-25% of the caseload seen by one staff person did reduce the standard clinic time for the office as a whole. Also on the positive side, there was efficient exchange of information such as immunization records…"*

The highest demand seemed to be for recertification rather than initial services at the newborn or 2 week visit. This may have been due to the length of time involved in certifying the dyad of new baby and mother. Also if the new baby/mother duo had requested a breast pump or infant formula at the time of certification, a trip to the local WIC office was needed anyway.

In addition to contacts with families for WIC certification and recertification, the WICMH program planned to take advantage of the pediatric periodicity schedule to make additional contacts for the purpose of providing enhanced nutrition education. Implementation of this WICMH feature was somewhat limited by the demand for WIC staff to focus on the mandated certification appointments. In our project most, but not all, of the WICMH Evaluation Group infants received one additional contact, but few received more than one additional contact.

Following the pilot in 2003-2005, University Pediatrics, Newport Pediatric and Adolescent Medicine and the two WIC district offices chose to continue the WICMH model. The Burlington district office was able to provide two nutritionists on a part-time basis to replace the nutritionists who were originally hired for the grant project. At the time of this writing, both WICMH sites are still going strong. Other Vermont WIC programs have expressed interest in replicating WICMH, and some District Offices have even adapted the model for prenatal WIC services in OB/GYN practices.

We would be happy to talk with any WIC program interested in implementing a *WIC Services in the Medical Home* model. Please address questions to the project coordinator:

Lynne Bortree, M.S.
Nutrition Specialist
Vermont Department of Health WIC Program
PO Box 70
Burlington, VT 05402
802-652-4186
lbortre@vdh.state.vt.us

If you would like to address questions to the project's participating physicians, please feel free to contact:

Wendy S. Davis, MD
Director, Maternal Child Health
Liaison, Vermont Chapter of the American Academy of Pediatrics
Vermont Department of Health
PO Box 70
Burlington, VT 05402
802-863-7333
wdavis@vdh.state.vt.us

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LIST OF APPENDICES

Note: Appendices are in a separate file.

Appendix 1: Pediatric Office Survey

Appendix 2: WIC Parent Telephone Survey

Appendix 3: Pediatric Practice Assessment

Appendix 4: Memorandum of Understanding

Appendix 5: Scheduling Instructions for Practices

Appendix 6: WIC Reminder Ticket

Appendix 7: Nutrition Education Flow Sheets

Appendix 8: Inappropriate Feeding Practices

Appendix 9: Participant Recruitment Flyer I

Appendix 10: Participant Recruitment Flyer II

ENDNOTES

[1] United States General Accounting Office. Food Assistance: WIC Faces Challenges in Providing Nutrition Services. GAO-02-142. December 7, 2001.
[2] American Academy of Pediatrics. WIC Program. Provision Section on Breastfeeding. Pediatrics. 108:1216-1217; 2001.
[3] Story M, Holt K, Sofka D, eds. 2002. *Bright Futures in Practice: Nutrition* (2nd ed). Arlington, VA: National Center for Education in Maternal and Child Health.
[4] National Center for Education in Maternal and Child Health, 2000. *Bright Futures: Guidelines for Health Supervision of Infants, Children and Adolescents – Encounter Forms for Health Professionals (2nd ed).* Arlington, VA: National Center for Education in Maternal and Child Health.
[5] Brazelton, T. Berry. 1992. *Touchpoints: Your Child's Emotional and Behavioral Development.* Addison-Wesley Publishing Company.