**WIC Mother/Baby 2013 Presentation “Supporting Long Term Breastfeeding with the new WIC Food Packages”**

**BACKGROUND**

We will share the outcomes from VT WIC’s recent research project, *You Can Do It, WIC Can Help*. This intervention, implemented in the Rutland, Middlebury and St. Albans local health offices, combined screening, targeted counseling and social marketing to better support WIC mothers to reach their breastfeeding goals. Our findings add evidence that building moms’ knowledge, social and professional supports and confidence are key in supporting long-term exclusive breastfeeding.

**Timeline - Introduction/Framing**

The WIC program has committed numerous resources to strengthening breastfeeding outcomes and building a breastfeeding community. Over the past two decades Vermont WIC has initiated multiple projects that have helped breastfeeding initiation rates rise from 35% in 1992 to 78% in 2009. This graph highlights some of the major state and federal initiatives that have positively impacted rates:

The first enhanced WIC food package for breastfeeding mothers was implemented in 1993.

The majority of WIC mothers know breastfeeding is best, and most pregnant women state they intend to breastfeed. Prior to this project, 68% of pregnant women planned to breastfeed at their initial prenatal WIC appointment (2007 Vermont WIC Program). Breastfeeding intention correlates highly with initiation rates among Vermont WIC mothers, and 72% of mothers initiated breastfeeding that same year (2007 Prenatal Nutrition Surveillance System).

- Vermont adopted the “Using Loving Support to Build a Breastfeeding-Friendly Community” social marketing campaign and formed a statewide breastfeeding coalition in 2003.
- The Vermont legislature passed Act 117 in 2003, which protects the right of women to breastfeed in any place of public accommodation where the woman otherwise has a legal right to be present.
- In 2008, all Vermont WIC staff received training in Value-Enhanced Nutrition Assessment (VENA), which set assessment standards and improved WIC certifier skills for engaging participants in meaningful discussions around health and nutrition, including breastfeeding.
- Vermont labor laws were amended in 2008 to include Act 144, a requirement that employers provide a private space and break time during the day for lactating mothers to express milk for their children. To assist employers with Act 144 compliance, Vermont WIC partners with local breastfeeding coalitions to provide on-site consultation to employers.
- In 2009, the WIC food packages were improved for all participants, with the greatest food benefit, and other supports, going to breastfeeding mother/baby pairs.
- All Vermont WIC staff attended two days of breastfeeding competency training in 2010 using the Grow and Glow curriculum.
- Vermont WIC received a breastfeeding performance bonus from FNS in 2011. Part of the funds were used to develop the “Empowering Mothers, Nurturing Babies” program, which assisted hospitals to improve scores on the CDC Maternity Practices in Infant Nutrition and Care (mPINC) survey. (Figure 1)
Despite a sustained breastfeeding promotion effort, breastfeeding duration rates in the WIC population haven’t kept pace with improving initiation, and have remained fairly stagnant over the 10 years prior to the 2009 food package changes.

Rates for exclusive breastfeeding were even lower. For babies enrolled in WIC and born in 2007, only 34 percent were exclusively breastfed by the end of week 1 postpartum. The rate of exclusive breastfeeding remained relatively constant from the end of week 1 (34 percent) until 7+ weeks (27 percent). The breastfeeding rate for babies fed supplemental formula (the partial breastfeeding group) decreased much more quickly from 28 percent at week 1 to 12 percent at 7+ weeks.

More than 73% of babies born to WIC mothers start out breastfeeding (2009 Pediatric Nutrition Surveillance System). Yet: one third of WIC mothers were supplementing with infant formula by the end of the first week postpartum.

...to better understand the reasons moms were stopping... we examined Pregnancy Risk Assessment Monitoring System (PRAMS) data for Vermont - The Phase 5 questionnaire in 2004-2008 included a series of questions on breastfeeding barriers, reasons for stopping breastfeeding and “Baby Friendly” characteristics of hospitals where each mother delivered.

The surveys were mailed to a random sample of new Vermont mothers and an oversample of low birth weight mothers at 2 to 6 months after birth. Follow-up of non-respondents by telephone yielded a response rate consistently over 79% for each year from 2004 to 2008.

WIC and non-WIC moms reported milk-supply related reasons for Stopping Breastfeeding; (WIC percentages were)

- 11% of WIC moms reported “Baby not gaining enough weight”,
- 38% reported “Breast milk alone did not satisfy baby.” (38%), and, 37% reported “Not making enough milk.” (37%)

Some of the comments moms added hinted at a lack of knowledge about the importance of exclusive breastfeeding on milk supply..... coming to an understanding of this concept only after the fact seeming to indicate a lack of prenatal education on supply/demand and understanding baby’s satiety cues.

Both WIC and non-WIC mothers reported reasons for stopping breastfeeding that seemed to reflect a lack of professional support and confidence in breastfeeding skills. (WIC percentages: “Nipples sore” (27%) and “Baby had difficulty nursing” (31%)). WIC and non-WIC mothers also reported reasons for stopping breastfeeding related to life events. (WIC percentages: “Want/Need someone else to feed baby” (20%), “Work/School” (16%), “Mom got sick” (7%). Twenty-eight percent of mothers checked “Other”). Based on comments mothers wrote on the PRAMS survey, some of the reasons may have included alcohol, drug addiction or treatment, or domestic violence.

WIC mothers checked some reasons for stopping breastfeeding at a significantly (p<0.05) higher rate than non-WIC moms:

- “Baby got sick” (WIC 4% vs. non-WIC 1%).
- “Too many household duties” (WIC 14% vs. non-WIC 8%).
- “Baby was jaundiced” (WIC 11% vs. non-WIC 5%).
These differences seemed to indicate again that WIC mothers required more professional/clinical support and social support than they were currently receiving in order to meet their breastfeeding goals.

**PRAMS Survey Results  Hospital Experience**

PRAMS survey data also showed that WIC moms had different hospital experiences than non-WIC moms when responding to questions about whether or not they had experienced the 10 Steps to Successful Breastfeeding (the foundation of the “Baby Friendly Hospital Initiative”)

**Hospital Environment** -
Compared to non-WIC mothers, mothers in Vermont’s WIC Program were:
- less likely to report feeding baby only breast milk in the hospital,
- more likely to report receiving a gift pack with formula, and
- more likely to report baby using a pacifier in the hospital.

WIC mothers were also less likely to report:
- baby rooming in,
- breastfeeding their baby in hospital,
- hospital staff helping learn how to breastfeed,
- hospital staff telling mom to feed on-demand, or
- hospital giving a phone number to call for breastfeeding help.

Self-report data limit the extent of conclusions that can be drawn, but it is clear that there are differences in support received and possibly real differences in the support offered to breastfeeding moms in WIC versus those not enrolled in WIC.
PRAMS Survey Results  Right Time to Stop Chart
One of the most striking findings from the PRAMS surveillance data was the low proportion of WIC (21%) and non-WIC (17%) moms who agreed with the statement: “I felt it was the right time to stop breastfeeding”.

...Knowing how many mothers wanted to bf, and now, more than three quarters of those that started stopping before the time was right compelled us to focus on helping mothers that want to/intend to breastfeed to reach their goals - we designed the intervention to emphasize the importance of social and professional support, breastfeeding knowledge, and enough confidence in their breastfeeding skills to get through the first week postpartum.

Confident Commitment
...in the early stages of the project, we were inspired by Alexis Avery’s paper “Confident Commitment is a Key Factor for Sustained Breastfeeding” - she talked about breastfeeding success being the product of a mother’s confidence – her confidence in the process of breastfeeding- a belief that her body was made for this and the biology works-; her confidence in her ability to breastfeed – the belief (or firmly stated intention) that “I am going to breastfeed”, rather than “I think I want to try, but ...my mom, my friend, my sister tried and couldn’t…”; and, ....the commitment to making it work – knowing and understanding that some challenges lie ahead and the belief those will be overcome.

Confident Commitment  Breastfeeding Assets
Building a mother’s “Confident Commitment” seemed Fundamental to Reaching Duration Goals
Helping mothers recognize that breastfeeding is both “natural” and a learned skill that requires knowledge, resources, strategies and support to overcome barriers is critical to achieve long-term breastfeeding targets.

WIC has the opportunity to help prepare mothers for their breastfeeding experience and to provide support long term.

Duncan et al (2007) explored asset-building as a way of improving adolescent health and led us to believe a similar approach might also benefit mothers in reaching their personal breastfeeding goals. As in the strength-based approach for healthy adolescent choices, new mothers need support and direction as they acquire knowledge and master the skills necessary to negotiate the challenges of the current breastfeeding landscape. Raising a mother’s awareness of the importance of developing strengths and assets needed for her own health and well-being may motivate her to “own” and to accomplish her breastfeeding goal.

Literature and surveillance data indicated social and professional support, breastfeeding knowledge and confidence in breastfeeding skills and process as the most important content areas for the intervention.
To increase breastfeeding exclusivity and duration we knew we needed to help keep more mothers breastfeeding past the first week postpartum...

In 2009 – an overhaul of WIC’s food packages provided an opportunity to highlight WIC’s increased supports for breastfeeding and change the programs perception from “the place for formula” to “the place to go for quality breastfeeding support and services.”

The food package change in 2009 gave us the perfect starting point.

A major criticism of the “old” food package was that the formula bottle-feeding moms received was perceived as more valuable than the foods breastfeeding moms received. ... the new food packages were intended to incentivise breastfeeding by giving more food to fully breastfeeding mothers – thereby removing the perceived economic penalty –

In addition, the IOM committee strongly recommended more intensive support for breastfeeding mothers – particularly in the first few weeks postpartum...

SO...we partnered with Health Surveillance and Local Health and pursued grant funds from USDA to build an intervention to
strengthen WIC’s support of breastfeeding moms/babies while taking advantage of the food package changes...the catalyst for our breastfeeding support model. (Our model is based on the engine concept for improving organizations from the book, *Good to Great* by Jim Collins).

The engine concept refers to finding the core strength/task of an organization and building momentum by focusing on the strengths and core values of the organization.

And so, our goal was to ....

... strengthen staffs’ assessment skills, and assure referrals to community partners who had the necessary skills and knowledge to provide evidence-based support. ...While marketing the higher value food benefit and improving our breastfeeding support system so more mothers could achieve their breastfeeding goals and avoid weaning before the time was right.

**Background - Project Goals  Goal 1**

Vermont’s project involved 2 inter-related interventions, each with an outcome goal for improving long-term exclusive breastfeeding in WIC mothers and their babies. Our first goal was to increase exclusive breastfeeding by 10% at 4 weeks post-partum. If you’re thinking 4 weeks doesn’t sound particularly long-term, you are right! We chose 4 weeks because, as you saw from some of the data Karen presented earlier, the first month is when we see the most rapid attrition. Other research has shown that moms who make it through the first month are more likely to continue for at least several more months, so we decided to heavily “front-load” our intervention – and then see if it “stuck” by also measuring exclusive breastfeeding rates at 3 months and at 6 months after birth. The intervention related to this goal is called “You Can Do It” – or the pink part of the study.

**Background - Project Goals  Goal 2**

Our second goal was to improve WIC’s reputation in the community, especially among OB, Pediatric and Family Medicine providers, as a sincere and creditable partner in breastfeeding support. Earlier, Karen very nicely described our reason for designing an intervention to address this – this intervention is called “WIC Can Help”, or the blue part of the study.

**Background - Project Goals  Roll Out**

The intervention design included support from WIC breastfeeding peer counselors; at the time, we had just 3 local offices, Rutland, St Albans and Middlebury, with peer counselor programs, meaning our study offices did not get to volunteer for this project. We convened an expert panel of staff from those 3 offices, and worked together to develop a protocol that could realistically be implemented with the time and staffing available. However, the added rigors of adhering to a detailed study protocol and to collecting vast amounts of data certainly study required considerable extra work for them, and I thank them again for their efforts.
**Background Project Team**

I also want to recognize the valuable contributions of the rest of our team! First Dr. Laurel Decher, our lead evaluator, formerly of the Division of Health Surveillance, now living in Bonn, Germany where her husband is the curator of a zoological museum.

**Background Project Team**

And I’m especially pleased and grateful for the ongoing assistance we received from many others in the Division of Health Surveillance. Many, many thanks to my colleagues in the Division of Health Surveillance who provided data, advice, verification and all kinds of other support. I would especially like to recognize the work of Moshe Braner, who created research datasets from the WIC administrative data for cases and controls and for the separate food package analysis. He also created the exclusive breastfeeding variables for our outcome analysis. Without his work, there would have been no data for me to analyze. I also owe thanks to Caitlyn Dayman, who beat the scanable forms into submission, Erica Edwards, who provided SAS advice and verified baseline data, John Gauthier, whose PRAMS data analyses started us off in this direction while we were creating the intervention. I’d also like to thank Jen Hicks for her support in coordinating so many moving parts.

**You Can Do It**

So what did we do...

**You Can Do It - You Can Do It Design Intervention Visits**

At their first prenatal WIC visit, women were invited to enroll in “You Can Do It” – aka the pink portion of the study. They could receive up to 3 contacts during their pregnancy – roughly first, second and third trimester - with this content: promotion of the new food packages; screening for breastfeeding attrition risks; targeted counseling to increase breastfeeding knowledge, identification of support networks and confidence building; social marketing materials to address common myths and barriers.

Post-partum, mothers could receive up to 3 more contacts in the first 4 -6 weeks. The content included assessment of their knowledge of signs their baby was getting enough to eat, a second screening done by the WIC peer counselors to assess for risk of early weaning, and referrals to community lactation supports. Exclusively breastfeeding moms also received an immediate food package upgrade.
I don’t want to steal Cait’s thunder, so I’ll give you a just sneak preview of our results here. One bit of statistical evidence that your intervention might be working is to look at dose-response. If you increase the dose, do you see an increased effect? Of the 256 study moms who had live births at the end of the study, not all received every intervention contact. But as you can see, the higher the dose—in this case # of contacts—the bigger the increase in exclusive breastfeeding rates. These results are statistically significant at all time points.

Prenatal Certification Visit – BAPT
I’d like to take a minute to describe the screening tool we used prenatally – the BAPT - Breastfeeding Attrition Prediction Tool – developed by Jill Janke in 1994 and later modified by Sara Gill. We chose this validated tool because its items aligned closely with the concept of confident commitment and the assets approach to improving health choices, which were so appealing to us. We made further modifications to the tool to measure risks specifically in the domains of knowledge, support and confidence.

Using a Likert scale, moms were asked their opinion on 27 statements about breastfeeding.

Knowledge – of how BF works, what to expect
Support – from friends, family and professionals
Confidence – in the biology of breastfeeding, that breastfeeding is a skill that can be learned
= Breastfeeding Success (overcoming barriers and challenges, and sticking with breastfeeding through the hard times)

You Can Do It Knowledge
For example, knowledge statements included items like:
1. Breastfeeding is more convenient than formula feeding
4. Breast milk is healthy for the baby.
7. Breast milk is more nutritious than infant formula.
8. Breastfeeding makes your breasts sag.
10. Breastfeeding makes you closer to your baby.
11. Breastfeeding makes returning to work more difficult.
13. When you breastfeed you never know if the baby is getting enough milk.
14. Mothers who formula feed get more rest than breastfeeding mothers.
15. Breastfeeding is more time consuming than formula feeding.
17. Breastfeeding is messy.
18. Breastfeeding ties you down.
20. Breastfeeding is better than formula.
**You Can Do It  Support**
Support items asked about what everybody around the mom wants her to do:
21. The baby's father thinks I should:
22. My mother thinks I should:
23. My mother-in-law thinks I should:
24. My sister thinks I should:
25. My doctor thinks I should:

**You Can Do It  Confidence**
Confidence items assess her perceived behavioral control with statements like:
26. I have the necessary skills to breastfeed.
27. I am physically able to breastfeed.
28. I know how to breastfeed.
29. I am determined to breastfeed.
30. I won't need help to breastfeed.
31. Breastfeeding is easy.
32. I am confident I can breastfeed.

**WIC Can Help**

**WIC Can Help - WIC Can Help**
Now for part 2 - *WIC Can Help* – or the “blue” part of the study. 😊
We felt the best approach would be to adopt the “detail visit” model used by formula and drug reps – something docs are familiar with, and respond to positively. Initially, Local WIC staff visited practices over the noon hour and gave a presentation outlining the need for better breastfeeding support, how WIC supports breastfeeding, and how practices could benefit by partnering with WIC to support breastfeeding moms and babies.
WIC Can Help
They also provided a WIC lunch - instead of the usual soda and pizza, they brought tuna sandwiches on locally-baked whole grain bread, cut-up veggies with hummus or bean dip, beautiful salads and fruits – all part of the WIC exclusively breastfeeding food package!

WIC Can Help Resources
Providers were also offered patient materials used in the study, professional reference texts and the opportunity for CME credits if they would schedule a follow-up session. Local staff made a second visit to practices to deliver their resources.

WIC Can Help Continuing Education
For the follow-up session practices could choose from any of the breastfeeding modules in the Increasing Breastfeeding Success curriculum developed by the Physician’s Lactation Education Collaborative of Washington. We are fortunate to collaborate with several FAHC residents and local “provider champions” to teach these.

Survey Audience Physicians
For the qualitative analysis of WIC Can Help, we conducted pre/post surveys and interviews with physicians. At follow-up, compared to baseline,
- there was a significant increase in favorable opinions of the WIC food benefit,
- increased agreement that WIC helps moms meet their breastfeeding goals,
- and a decreased perception that WIC support formula feeding more than breastfeeding.
You Can Do It Tagline
Now I’d like to show you a few of the materials from the project’s social marketing campaign.
Our “brand” became:

Knowledge – of how BF works, what to expect
Support – from friends, family and professionals
Confidence – in the biology of breastfeeding, that breastfeeding is a skill that can be learned
= Breastfeeding Success (overcoming barriers and challenges, and sticking with breastfeeding through the hard times)

Materials Dashboard
Our project used social marketing techniques to develop a communication strategy for promoting WIC’s core breastfeeding services and values to mothers and health care providers. We identified our target audience, the behavior we wanted to influence, the corresponding messages and the most appropriate communication channels. We worked with The Image Farm marketing firm and our own Kathleen Horton to create resources with the unifying theme of Knowledge + Support + Confidence = Success.
Providers participating in WIC Can Help were able to order from these patient materials as well and distribute them in their practices.

Open Detail Brochure
Select a few mom materials to open- the Comic (social support), the Checklist Blue (knowledge), Confidence (show a clip from Amy’s DVD—show Setting Goals)
If possible, open up to our website—
Recognize Texas WIC adaptations...

AND now... the outcome results!

RESULTS
• I’m going to take a few minutes to share the most important outcome data with you.
• One of our project goals was to increase long-term exclusive breastfeeding rates by 10% - not only did we meet this goal, but we exceeded it!
• 281 moms agreed to participate in the study, and 256 remained in the study at the time of their baby’s birth.
• As previously mentioned, to be eligible moms had to:
  – be planning to breastfeed or be undecided
  – be age 18 or older,
  – read/speak English as their primary language.
None of the study or comparison groups include formula feeding moms, they were excluded.

**You Can Do It Results**
Significantly more mothers who participated in You Can Do It were exclusively breastfeeding at 4 weeks, 3 months and 6 months, compared to mothers in the control group. The control group for this analysis was moms from our 3 study offices who were enrolled in WIC BEFORE the new food package took effect in October 2009, and who met the same eligibility requirements as our study moms.

The increase at 4 weeks was 16%
  - At 3 months 21%
  - At 6 months 18%

**You Can Do It Results**
Again, because moms who declined were still WIC participants, we were able to compare outcomes for moms who participated and moms who declined.

More You Can Do It cases were exclusively breastfed at 4 weeks (55% vs. 42%), 3 months (43% vs. 28%) and 6 months (34% vs 21%) compared to moms who declined.

Statistically significant

**Impact of the New (2009/2010) Food Package Policy**
We had promised FNS that we’d also measure the impact of the 2009 breastfeeding food package changes on exclusive breastfeeding rates. To evaluate the independent effect of the food package change we did some further comparisons.

Our STUDY moms were recruited during the new food package era. Our CONTROL group moms were recruited before the new food package. To measure the effect of the food package policy alone, we looked at NON-STUDY SITE moms before and after the new food package.

More moms exclusively breastfeed at each time point. The increase was:
11 percentage points at 4 weeks
9 percentage points at 3 months
8 percentage points at 6 months
All were statistically significant

You may be surprised at how much the food package change alone increased exclusive breastfeeding - in our 3 study districts, the increase at

4 weeks was 10%
At 3 months, 11%
At 6 months, 11%

Note:
Before the new Food Package, exclusive breastfeeding was LOWER in STUDY sites compared to NON-STUDY sites.
We were aware of this as districts with lower breastfeeding rates were given priority for peer counseling programs.

The Impact of You Can Do It plus the Food Package Policy

This survival analysis shows the 3 groups over time for all of Vermont. Each drop in the line shows a mom or group of moms stopping exclusive breastfeeding during that postpartum week.
Pink shows ENROLLED in You Can Do It + FOOD PACKAGE
Green shows FOOD PACKAGE alone
Orange shows Before FOOD PACKAGE
All groups statistically differed from one another.
*The group that only received the food package includes declines and the non-study sites*

The Impact of You Can Do It plus the Food Package Policy

This slide shows a consistency of association. All 3 study sites experienced statistically significant gains in exclusive breastfeeding after You Can Do It and implementation of the new WIC food package policy.
Middlebury had started the intervention with higher exclusive breastfeeding rates, for them the “WIC engine had already started” so to speak.
The important take away with this graphic is that all three sites saw significant gains in exclusive breastfeeding rates at each time interval.
Recommendations
One of FNS’s requirements in awarding Special Project Grant Funding is that a project be sustainable after SPG funding ends, and be transferable to other WIC programs. Our recommendations going forward can be applied at all levels of the Social-Ecological Model, and by many different entities in addition to WIC. They are:

- Regularly meet with local health care providers and share resources to strengthen professional breastfeeding supports for moms and babies.
- Monitor state data

Recommendations - Program Recommendations

- First trimester: Screen moms for breastfeeding challenges early in pregnancy, and counsel them to talk with family, friends and health care providers about their breastfeeding goals.
- Second trimester: Use screening results to provide each mom with highly individualized, targeted counseling to help her meet her personal breastfeeding goals.
- Third trimester: Teach moms and their birth support folks about the hospital practices that support breastfeeding.
Recommendations - Program Recommendations

- Birth and Beyond: Provide early post-partum support as soon as mom and baby leave the hospital; refer moms to community lactation specialists, such as WIC breastfeeding peer counselors.

Next Steps

Based on the success of this project, we are now rolling out the model in the 9 remaining VDH local health offices, and sharing the project resources nationally. And before we go to questions, I’ll leave you with a few words of wisdom from one of study moms, Mekela.

Thank you!

Questions

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