Impact of Prenatal Care on Breastfeeding Initiation and Duration
Anna Grady
Community Health Project, IUSM—TH
17 April 2014

BACKGROUND

While many factors affect a woman's decision to breastfeed and for how long, prenatal, postpartum, and pediatric care providers can have an impact on the duration and exclusivity of breastfeeding. As a soon-to-be physician, I would like to understand what things I can do to help women and families both initiate and maintain breastfeeding.

Breastfeeding is recommended by the AAP, AAFP, ACOG, and ACNM as best practice, yet the breastfeeding rates in the United States do not reflect these recommendations. According to the CDC, in 2012, Indiana had a breastfeeding initiation rate (the percentage of woman who tried breastfeeding after delivery of a newborn) of 72%, exclusive breastfeeding rate at 3 months of 31%, and exclusive breastfeeding at 6 months of 13% (2). Breastfeeding has been included in many efforts to increase the health of populations as a whole. The benefits of breastfeeding are not in any doubt as they have been studied extensively, and have shown a reduction in diseases among both infants and mothers (7). The US Department of Health and Human Services has set a goal to increase the percent of infants who are ever breastfed from the 2006 rate of 74.0% to a target of 81.9% (8).

Table 1. CDC: Healthy People Goals 2020

	Baseline (2006, %)	Target (2020, %)
Breastfeeding initiation	74.0	81.9
Breastfeeding at 6 months	43.5	60.6
Breastfeeding at 1 year	22.7	34.1
Exclusive BF at 3 months	33.6	46.2
Exclusive BF at 6 months	14.1	25.5

One of the steps that the World Health Organization (WHO) has taken to help promote breastfeeding is to develop Ten Steps to Successful Breastfeeding (9). IU Health-Goshen Hospital has the designation of "Baby-Friendly" since they have implemented the Ten Steps for Successful Breastfeeding from WHO and UNICEF. The physicians at the study site only deliver at IU Health-Goshen so the women participating will all have been exposed to the same in-hospital care, such as 24-hour rooming-in, breastfeeding within one hour of birth, and no formula in-hospital unless medically necessary (9). While these are important steps in the right direction, the highest peak in breastfeeding discontinuation is in the first 2-4 weeks after discharge from the hospital (13, 3, 18).

Some of the most common reasons for discontinuing breastfeeding are inadequate milk supply, latch or sucking difficulty, physician recommending formula, infant preference for bottles, mother preference, infant's health, and maternal employment (13, 17). One of the biggest obstacles identified by researchers and ACOG was a woman's doubt about her ability to succeed at breastfeeding (3, 18). Women at-risk for early cessation include those who do not have support (no partner, otherwise alone, etc), smoking, and lower socioeconomic status (13). Receiving information in print form and receiving encouragement from their clinician to

breastfeed have been shown to decrease discontinuation rates at 12 weeks (17). Breastfeeding initiation has been shown to be higher when it is perceived as a social norm (13).

In studies investigating how to increase breastfeeding initiation or duration, a few key variables have been identified. In Australia, where breastfeeding initiation rates are already high, initiation rates were not found to increase after 2 different mid-pregnancy interventions. Neither a class on practical skills nor classes on attitudes about breastfeeding show a difference in initiation rates or duration. The data were analyzed using both intention to treat analysis and for only those who attended the interventions, but there was still no difference found between the interventions on initiation or duration (11). When breastfeeding initiation rates are already high, another study also supported the idea that prenatal breastfeeding education through routine prenatal visits, specialized breastfeeding class, and support groups do not have a statistically significant impact on initiation. This study, however, found a significant impact on the duration of breastfeeding (12). That is why there are 2 components to the Healthy People Goals: a family has to be willing to give breastfeeding a try, but also needs to have resources available to be successful. Different strategies and interventions will be used to reach people who are contemplating initiating breastfeeding versus those who have already started breastfeeding and need encouragement and trouble-shooting to maintain breastfeeding.

Other studies have shown specific populations that might benefit from increased interventions. A study of women in Healthy Start showed that Hispanic ethnicity, marriage, and increased frequency of visits for case management services were positive predictors for the initiation and continuation of breastfeeding (10). Breastfeeding rates vary widely with lowest rates among non-Hispanic blacks, mothers younger than 20 years old, those with a high school education or less, and those receiving WIC. There is also a strong regional variation with lowest rates in Arkansas, Kentucky, Louisiana, Mississippi, and West Virginia (3). The biggest impact on breastfeeding initiation and duration would be expected if these populations would be targeted specifically.

All of the national organizations of professionals that provide pediatric and prenatal care have released statements in support of breastfeeding. The review by the American College of Obstetricians and Gynecologists (ACOG) described that breastfeeding rates did not decrease until the late 1950s when formula became popular, yet by 1971, only 24.7% of mothers left the hospital still breastfeeding. These numbers have turned around, but most women do not continue exclusive breastfeeding for the 6 months that ACOG recommends (3).

Each of the organizations has a slightly different recommendation with the American Academy of Pediatrics (AAP) recommending “exclusive breastfeeding for about 6 months, with continuation of breastfeeding for 1 year or longer as mutually desired by mother and infant” (5). The AAP’s ultimate conclusion is that given all the research demonstrating compelling evidence for the benefits of breastfeeding, that this should not be regarded as a “lifestyle choice” but instead is a “basic health issue”(5).

The Breastfeeding Task Force of the American College of Nurse-Midwives (ACNM) even goes on to state that breastfeeding is “the optimal method of infant feeding.” They make specific mention that the “attitudes of health care providers” plays a role (6). Unfortunately, in their short statement, they do not go on to describe how attitudes might play a role; but I think it is fair to speculate that when health care providers view breastfeeding as the ideal or gold standard of infant nutrition, they do things differently that further promote breastfeeding and seek out knowledge and expertise that they might not otherwise be drawn to.

The American Academy of Family Physicians (AAFP) does not provide a specific recommendation for how long women should breastfeed, but instead cite a 1997 Clinical Lactation Management from *Pediatric Review* that concluded the natural weaning age for humans to be 2-7 years old. They go on to comment that "there is no evidence that extended breastfeeding is harmful to mother or child" (4). None of the other statements provide similar evidence as to why they recommend 6 months or a year.

Also notable from the AAFP position paper is the extensive outlining of how to incorporate breastfeeding into the education of medical students, residents, and continuing education for practicing family physicians. They promote that lactation be addressed in the preclinical years, normal breastfeeding be addressed in clinical years, and specific maternal, infant, and special circumstances be addressed in the residency curriculum (4). It is important to note, that there is no mention of infant nutrition, breastfeeding, or any of the suggested topics from the AAFP in the program requirements for family medicine, pediatric, or obstetrics and gynecology residencies (22, 23, 24). It is possible that the lack of a cohesive, systematic approach leads to wide variability in the knowledge base and comfort levels of physicians.

Other recommendations, from physician bodies such as ACOG, went on to mention breastfeeding during breast exams and prenatal visits, and that health care professionals should ensure that breastfeeding women can successfully express milk by hand. They pointed out the influence a physician's recommendation can have and recommended that physicians encourage women to at least try breastfeeding (3).

And yet, a 1995 assessment of physician knowledge about breastfeeding revealed that residents lack knowledge about clinical management of breastfeeding and more than 50% of practicing physicians rated their residency training as inadequate (20, 21). Another study showed that, 55% of physicians received breastfeeding training during their residency, and 30% had taken a breast-feeding course in medical school (17). This is not an issue that is unique to the United States, a survey of physicians in Israel reported learning about breastfeeding in medical school and residency, but concluded that the subject is rarely taught and not in an intensive structured way (16). The vast majority of all physicians supported breastfeeding; however, only half thought they were able to effectively counsel patients (21). Multiple studies have shown that the single most influential factor in physician confidence was previous personal or spousal breastfeeding experience (21, 16).

Interventions to increase the knowledge and comfort with breastfeeding of nurses, obstetricians, and pediatricians have been successful in increasing nighttime breastfeeding and decreasing formula supplementation while in the hospital. There was also an increase in exclusive breastfeeding at discharge even though there was no change in maternal satisfaction with her breastfeeding experience after the provider intervention (14). This shows that the education of healthcare providers has an impact on breastfeeding success even though satisfaction with care does not necessarily change.

A 2012 study showed that most physicians do not discuss breast-feeding with women who are pregnant or in the early postpartum period, and that many physicians lack knowledge of techniques to manage problems such as mastitis or cracked nipples. In that same study, all physicians agreed or strongly agreed that there was no need to teach women how to breastfeed. The physicians expressed the belief that it was "unrealistic" to expect mothers to continue breast-feeding for 6 months after birth (15). In another study, 54% of OB/GYNS and 61% of pediatricians agreed that "exclusive breastfeeding for the first 6 months of life is unrealistic for many mothers I see" (17).

A survey of physicians in Israel found that less than 20% of OB/GYNs and FPs frequently discuss breastfeeding with pregnant patients (16). Among the physicians in Israel and the United States personal experience has been found to have a significant effect on how they approached breastfeeding (16, 20). Many clinicians do not feel confident in their skill to support breastfeeding and may have limited time to address the issue during preventive visits (17, 20).

A published review of intervention studies found that by improving provider knowledge of breastfeeding, there was an increase in positive attitudes of healthcare providers toward breastfeeding, but that just having positive attitudes did not correlate with more knowledge (19). In particular, a 1995 study found that physicians' self-assessment of their ability to counsel patients does not necessarily match their knowledge or management expertise (20). Since the problems that lead to discontinuation occur outside of the hospital, this review concluded that while BFHI is helpful for those in hospitals, "it is time to set similar standards for community-based practitioners" (19).

By surveying women in the prenatal and postpartum periods, I hope to identify some of the factors that influence their decisions and their success with breastfeeding. Prenatal and postpartum care also plays a factor in both initiation and duration of breastfeeding. By also surveying those who are providing prenatal care, I hope to learn what might be altered in physician education to help promote breastfeeding.

METHODS

The research project was conducted in Goshen, IN. Goshen has a population of roughly 32,000 people with 28% Hispanic, 2-3% African American, and 66% White. Slightly more than 25% report speaking a language other than English at home, and almost 20% of the population lives below the poverty line (1). In order to reach a more representative sample of the population, the patient surveys were translated into Spanish, as that is the predominant language spoken at homes besides English, and providers at the survey site reporting an expected 50% Hispanic OB population.

There were two arms to the study. One focused on the pregnant women themselves and their decisions, while the other arm focused on those providing prenatal care. All expectant mothers 35+ weeks gestation presenting to the Goshen Family Physicians office for prenatal care were asked to participate by filling out an initial survey and agreeing to 2 follow up surveys.

The receptionists were to identify those eligible to participate; however, they did not know how far along the women were in their pregnancy and so ultimately did not identify women for this study. The office has 7 physicians who provide prenatal care and each nurse and doctor pair established their own system to identify participants for this study. One of the pairs added the survey to the list of things to complete at the 36-week prenatal visit. Another of the pairs relied on the physician identifying the participants and distributing the survey at the end of the prenatal visit. The completed surveys were placed in the envelope provided and sealed prior to being placed in the lockbox. One of the surveys was taken home by a participant and mailed back to the office. The envelope was placed unopened into the lockbox by the office staff. Recruitment for the study and distribution of the first survey lasted 8 weeks.

At the end of the first survey, a list of the participants was provided to the office so that they could be sure those women were asked to complete the second survey. The second survey was originally intended to be distributed at the 4-6 week postpartum visit; however, this proved difficult and instead was collected at some point between 6 and 13 weeks postpartum. I conducted two of the surveys by phone.

The third survey was intended to capture women at 3 months postpartum to compare the data to the 2006 baseline and 2020 targets from Healthy People.gov (8). The third and final survey was mailed to the participants at the address they had provided with an enclosed stamped and self-addressed envelope to return the last survey. All information with personal identifiers was kept in a lockbox throughout the duration of the study.

The second arm of the study focused on those providing prenatal care. A survey was distributed to the 7 prenatal care providers at the office. This survey was completed by the physicians at a time that was convenient to them and returned to the lockbox in a sealed envelope.

The results from all the surveys were matched and then de-identified so that the responses to a particular participant could be followed through surveys 1, 2, and 3, and then could be matched with the physicians who provided the prenatal care. A total of 9 women participated in the study. The average age of the participants was 26.7 years, 3 (33.3%) were Hispanic with the other 6 (66.7%) selecting White.

In addition to the surveys, I also requested data from IU Health--Goshen Hospital about breastfeeding initiation and exclusive breastfeeding in the hospital. Included in the data was the age, race, marital status, delivery method, use of tobacco of the mother, and the specialty of the admitting provider. During the months of October and November 2013, IU Health-Goshen Hospital had 220 deliveries. The racial make-up of the mothers was: African-American 3.6% (8), Asian 0.9% (2), Hispanic 24.5% (54), other 1.4% (3), and White/Caucasian 69.5% (153).

RESULTS

IU Health-Goshen Hospital

The average age was 26.7 years, 59.5% were married, 35.9% were primiparas, 16.8% reported being former or current smokers, and the overall cesarean section rate was 27.7%. The infant feeding plan for 87.1% was breastfeeding. At discharge 68.6% were exclusively breastfeeding.

One hundred of the 220 deliveries were admitted by OB/GYNs. The average age of those admitted by OB/GYNs was 26.6 years, 54.0% were married, 31% were primiparas, 20.0% reported being former or current smokers, and the cesarean section rate was 43.0%. The infant feeding plan for 87.0% was breastfeeding. At discharge 68.8% were exclusively breastfeeding.

Forty-three of the 220 deliveries (19.5%) were admitted by CNMs. The average age of those admitted by CNMs was 28.3 years, 79.2% were married, 42% were primiparas, 7.0% reported being former or current smokers, and the cesarean section rate was 4.7%. The infant feeding plan for 95.4% was breastfeeding. At discharge 80.5% were exclusively breastfeeding.

Seventy-six of the 220 deliveries (34.5%) were admitted by FPs. The average age of those admitted by FPs was 26.1 years, 55.3% were married, 39.5% were primiparas, 23.7% reported being former or current smokers, and the cesarean section rate was 21.1%. The infant feeding plan for 84.2% was breastfeeding. At discharge 67.1% were exclusively breastfeeding.

Mother survey results:

I obtained demographic data, including age, ethnicity, socioeconomic indicators, and marital status, as these are factors thought to be associated with breastfeeding. Only 1 (11%) reported ever having smoked. Six participants (66.7%) reported using either WIC or Medicaid at

some point during the study period. None of the participants stated that was this their first child and 4 (66.6%) had prior breastfeeding experience.

There were 7 women who completed the first survey. The average age of the participants in this group was 25.7 years, 3 (42.9%) were Hispanic with the other 4 (57.1%) identified as being White. Only 1 (14.3%) reported ever having smoked. Six (85.7%) reported using either WIC or Medicaid at this time.

Three (50%) of the respondents reported having spent one visit discussing breastfeeding with their physician, the other 3 (50%) reported that breastfeeding was discussed at none of their prenatal visits. Only one (16.7%) responded that "S/he can answer all of my questions" about breastfeeding, while 2 (33.3%) responded that their provider knows "a lot" and 3 (50%) were unsure how much their provider knows about breastfeeding. Six (85.7%) reported intentions to breastfeed.

The second survey was collected between 5 weeks and 17 weeks postpartum (average 10 weeks). Two participants who had not completed the first survey completed the second survey, and 2 people who had completed the first survey did not complete the second survey. There were 7 women who completed the second survey; 5 had previously completed the first survey whereas 2 were new to the study and had not completed the first survey. The average age of the participants in this group was 25.9 years, 2 (28.6%) were Hispanic with the other 5 (71.4%) selecting White. Only 1 (14.3%) reported ever having smoked. 6 (85.7%) reported using WIC or Medicaid at this time.

The participants reported delivering between 38 and 41 weeks gestation (average 39.7 weeks). One (14.3%) participant reported a cesarean delivery while 6 (85.7%) reported vaginal deliveries. All of the infants stayed in the hospital for less than 4 days. Six (85.7%) reported initiating breastfeeding, while 1 (14.3%) did not attempt breastfeeding, responding that "my first son terrified me of it." During the second survey, 3 (42.8%) reported exclusive breastfeeding. The reasons selected for using formula were not enough breastmilk, sore breasts/nipples, went back to work, baby was not gaining weight, family medicine doctor recommended formula, and "started taking antibiotics that weren't good for baby."

For all the participants who attempted breastfeeding, 5 (100%) reported that their physician observed them breastfeeding. Only 1 (16.7%) reported that their physician had recommended formula, and all reported that their physician recommended breastfeeding for greater than 6 months.

Two responses were received for the third survey. The average age of the women in this group was 36.5 years. The 2 participants reported being White, neither had ever been a smoker, both were married, and neither reported using WIC or Medicaid at this time. Both babies were healthy and had only been to the doctor for well child visits. They were both exclusively breastfeeding at this time; it was 10 weeks postpartum for one of the women and unknown how many weeks postpartum for the other. Neither reported using formula for any reason. One responded that her partner had been her support person and the other reported a lactation consultant. One responded that her provider had not observed her breastfeeding. Her provider had not recommended formula for her. Both women reported that their provider recommends breastfeeding for 6 or more months.

Two physicians had one participant each, and one physician provided prenatal care to the other 7 participants. The responses are shown in the table below for the entire group and for the one physician who had multiple participants. Separate data will not be provided for the two physicians who had one participant each.

Table 2. Likert scale data for all 3 surveys

Statement	Survey 1		Survey 2		Survey 3	
	All	One	All	One	All	One
My provider has played an important role in my decision about infant nutrition (breastfeeding or formula)	3	3.5	2.8	2.3	4*	4*
I feel confident that I will be able to successfully breastfeed	3.7	4	n/a	n/a	n/a	n/a
My provider believes that breastfeeding is best for most babies	4.2	4.3	4.2	4.5	n/a	n/a
My provider believes that breastfeeding and formula are the same	2	1.7	2.5	2	n/a	n/a
I feel comfortable discussing breastfeeding with my provider	4.3	4.5	4.5	5	5*	5*
My provider has played an important role in helping me with my breastfeeding questions and difficulties	n/a	n/a	4	4.3	4*	4*
I feel good/successful in my attempts to breastfeed	n/a	n/a	n/a	n/a	4.5*	4.5*

*Survey 3 had only 2 participants and both were cared for by the same physician.

Provider survey results:

Of the 7 prenatal care providers at Goshen Family Physicians, I received 6 returned surveys, 5 were complete, and for 1 survey the second page was complete, but the first page was blank. All of the survey respondents had an MD. The average number of years in practice of those who provided an answer was 13 years with a range of 2 years to 20 years (n=3).

The first half of the survey addressed education and experience with breastfeeding. In pre-clinical medical education, 3 (60%) respondents reported having received 1 lecture, while 2 (40%) reported none. During the clinical years of medical school, 3 (60%) reported receiving 1 lecture, 1 (20%) reported more than 1 lecture, and 2 (40%) reported less than 1 chapter in a textbook. During residency training, all 5 who responded to this question marked at least one source of training. One respondent reported having a didactic lecture, whereas 3 reported multiple resources available for reference, and 2 reported time with a lactation consultant or other hands-on experience. The most reported answer, with 4 responses (80%), was that the attending physician was very knowledgeable.

Like many other physicians, 3 (60%) reported having experience breastfeeding, either themselves or their partner. One reported a close family member or friend that has breastfed, and one reported no personal experience with breastfeeding. One physician reported that they recommend breastfeeding for "as long as want to," while the other 4 (80%) reported recommending 12 months of breastfeeding. Only 1 of 5 (20%) owned any books on breastfeeding; however, they reported owning 3 books. None of those who participated in the survey had any specific lactation certification.

For the true/false section, 6 of 6 (100%) reported discussing the benefits of breastfeeding during prenatal visits. Five (83%) reported personally assisting if someone is struggling with

breastfeeding. For the statements, "The nurse or someone else in the office discusses breastfeeding with expectant mothers," and "There are other people (nurses, lactation consultants, etc.) in the office to whom I refer a mom if she is struggling with breastfeeding," there were 3 (50%) and 2 (50%), respectively, who reported that these statement were true while the others reported that they were not true.

The statement about recommending formula received no "false" marks, but instead of marking "true," 2 people wrote in responses ("depends," and "sometimes") and 1 person marked "true" and also wrote in a response ("in severe cases").

Table 3. Physician responses to Likert scale questions

	Average	
Breastfeeding is best for most babies	5.0	
When a mother in my practice has not made a decision about infant feeding, I advocate breastfeeding	5.0	
Women have access to information about breastfeeding vs. formula and will decide for themselves which is better for them	3.0	
Exclusive breastfeeding for the first 6 months of life is unrealistic for many mothers I see	2.7	
I have enough knowledge/training to counsel a woman about benefits of breastfeeding	4.5	
Breastfeeding was adequately covered in my pre-clinical years (med school, BSN/LPN/RN)	2.0	
Breastfeeding was adequately covered in my clinical schooling (med school, BSN/LPN/RN)	2.2	
Breastfeeding was adequately covered in my advanced training (residency, CNM)	3.8	
Breastfeeding training		2.7
I feel comfortable discussing the benefits of breastfeeding	4.8	
I feel comfortable assisting with breastfeeding troubles	4.2	
I feel comfortable assisting with first latch-on	3.5	
I feel comfortable helping with low milk supply	4.2	
I feel comfortable helping with breast pain/tenderness	4.7	
I feel comfortable helping with cracked/painful nipples	4.7	
I feel comfortable teaching a mother how to manually express breastmilk	3.7	
Breastfeeding comfort		4.2

DISCUSSION

IUH-GH:

The racial make-up of the mothers was representative of the Goshen area population with 24.5% Hispanic compared to a census population of 28% and 69.5% White/Caucasian compared to a census population of 66% (1).

Across the 3 types of providers (OB/GYN, CNM, FP), the OB/GYN and FPs had very similar demographics. The average CNM patient was slightly older, more likely to be married, and less likely to be a smoker. The cesarean section rates were highest with the OB/GYN and lowest for the CNM with the FP falling between the two. This would be expected as in this particular setting, the CNMs work with the OB/GYNs and higher risk patients or repeat cesareans would be with the OB/GYN. The data were organized by the admitting provider type

and not by the delivering provider, so this difference in cesarean section rates reflects the prenatal care provider.

The Health People 2020 goal for breastfeeding initiation is 81.9%. At IUH-GH, 87.1% of the mothers had breastfeeding listed as the infant feeding plan. This exceeds the target for breastfeeding initiation. Those who received prenatal care from CNMs had a much higher rate of breastfeeding at 95.4%. They also had a higher percentage of exclusive breastfeeding at discharge at 80.5%. The higher rate of breastfeeding among CNM providers could be due to the something about the prenatal care provider by the CNMs or it could be due to the difference in who selects a CNM versus an MD/DO. I suspect that it is a combination of the 2. I suspect that the approach of CNMs to prenatal care positive influences those willing to attempt breastfeeding, and that those who are interested in breastfeeding are more likely to select a CNM provider.

All three groups showed a significant difference between the infant feeding plan of breastfeeding and exclusive breastfeeding. The percentage difference was 15-20% across all 3 provider types. This does not provide any information about how long they breastfed for, but it does show that within the very early postpartum period, a significant number of women use formula.

Mothers:

The racial make-up of the mothers in the longitudinal study was also representative of the Goshen area population 3 (33.3%) identifying themselves as Hispanic with the other 6 (66.7%) selecting White. The group had a similarly low rate of smoking; however, the mothers in the longitudinal study were all multigravidas, in contrast to the 35.9% at IUH-GH who were primigravidas.

Overall, the women reported that their providers were knowledgeable, although 50% reported being unsure of their provider's knowledge of breastfeeding, which correlates with the 50% who reported that breastfeeding was not discussed during their prenatal care. The majority of the women who chose to participate in this study had intentions to breastfeed, which is consistent with the national average and the local average at the hospital. Another reason for this could be that the women self-selected to participate in the study and might be willing to participate if they viewed breastfeeding more favorably.

The reasons selected for using formula were not enough breastmilk, sore breasts/nipples, went back to work, baby was not gaining weight, family medicine doctor recommended formula, and "started taking antibiotics that weren't good for baby," and "my first son terrified me of [breastfeeding]."

Overall, the women felt comfortable discussing breastfeeding with their physician. While they did not agree that their provider played an important role in their decision, they did feel that their provider played an important in helping with questions and difficulties. This might reflect that breastfeeding initiation has been shown to be tied to cultural norms and less influenced by breastfeeding education interventions, whereas, the duration has been shown to be extended by various methods. Alternatively, the limited amount of time allotted to prenatal care visits might preclude health care providers from having a meaningful impact on the decision-making process.

All of the women perceived that their provider believed breastfeeding was best, which correlates well with the physicians' survey. The women who had less confidence in their ability to successfully breastfeed were more likely to use formula supplementation or not breastfeed at all.

Providers:

All 7 providers reported addressing breastfeeding during prenatal care; however, the mothers reported that breastfeeding was not always addressed. I suspect that this is a difference between what the physician considers "addressing breastfeeding" and what the patient perceives. Since none of the participants selected the option of breastfeeding being addressed too much, I would expect that all of the physicians could increase the amount of time spent discussing breastfeeding without receiving negative feedback from their patients.

One of the more interesting results was the lack of agreement among the providers about whether there is another person in the office who can be used as a resource for breastfeeding. Considering that all of the providers who participated in the study work in the same office, this signals that there is not uniform use of resources among all the providers. The practice is not consistently providing breastfeeding support to the mothers; breastfeeding support must be highly dependent on the particular provider in the practice. In addition, resources outside of the clinic are not being recommended to women, even though half of the providers disagreed with the statement about women deciding for themselves. So, the physicians indicated that they believe that women need information to help them decided, but they are not utilizing community resources, such as a lactation consultant or specialized nurse, or written materials, such as books or pamphlets, to assist.

The write-in responses to the statement about formula show that they are aware that recommending formula should not be done lightly. One of the mothers reported that formula was recommended to her. It would be interesting to have more information about why it was recommended.

Everyone strongly agreed that breastfeeding is best and they will advocate breastfeeding if a mother is undecided. No one had a strong opinion about mothers' access to information and making their own decisions. Also, no one had a strong opinion about exclusive breastfeeding being unrealistic; one physician agreed with the statement, 2 were neutral, and 3 disagreed. There has been a lot of emphasis on breastfeeding as best for babies, especially in Goshen-area where the hospital is certified Baby-Friendly. Exclusive breastfeeding is seen as the politically-correct option and yet physicians try to be understanding with their patients. This might lead them to be more in the middle-ground about what is or is not realistic.

Four questions addressed the physician's perception of their training in breastfeeding. All of the physicians agreed with the statement that they had enough knowledge or training; however, no one stated that breastfeeding was adequately covered in their pre-clinical years, only one indicated that breastfeeding was adequately covered in their clinical schooling, and even during advanced training, the range of responses was neutral to strongly agree. None of the physicians had received specific certification in lactation and breastfeeding education is not a required component of residency training. This suggests that that most of breastfeeding education of prenatal care providers is informal and highly dependent on the particular physicians with whom you work. The most common resources marked during residency training were "attending physician was very knowledgeable" and "multiple resources were available." This is further evidence that there is not an intentional, systematic effort to train physicians in breastfeeding.

ACOG recommends that a healthcare provide teach everyone who is breastfeeding to manually express breastmilk. The two items that the physicians surveyed were least comfortable were assisting with first latch-on and teaching a mother to manually express breastmilk. Overall,

the physicians were fairly comfortable with addressing breastfeeding issues which is consistent with their overall self-assessment that they have enough knowledge and training; however, this again raises the question of where the knowledge is coming from and how to ensure that all physicians receive enough training to have justified comfort levels with breastfeeding.

Limitations:

It was difficult to recruit prenatal care providers to participate. Multiple offices were contacted to participate, but due to internal reorganization at the offices and the time commitment required for the longitudinal portion of the project, no other offices were able to participate. It would have been beneficial to compare breastfeeding rates of patients across different training backgrounds such as Family Medicine vs. OB/GYN vs. Nurse-Midwife. A total of 4 offices were contacted with Goshen Family Physicians being the only site willing and able to participate. A larger sample size would have allowed comparison of differences in outcomes based on providers comfort level, attitudes, elements of the practice (ie. Lactation consultant on staff), and training background.

Another limitation of the study is that the women participating self-selected. Because the study was described as a "breastfeeding survey," the women who participated might be more likely than the average to have an interest in breastfeeding. Only one woman who participated did not attempt breastfeeding, and there were no responses from women who had not shown any interest in breastfeeding. Responses from those who are not intending to breastfeeding would have helped to show a difference between prenatal care of those who breastfeed and those who use formula, if one existed.

At the participating office, only a small number of women were recruited to participate. The initial survey to the mothers was for those 35+ weeks pregnant. This restriction was put in place to allow for enrollment in the project before delivery with subsequent follow up for at least 3 months postpartum. This became a significant limitation because the receptionists were supposed to identify the women in the target population; however, they only knew that the women had prenatal care appointments; they did not know how far along the women were in their pregnancy and so ultimately did not identify women for this study. The receptionists did not know which women were 35+ weeks pregnant. This problem might have been remedied by developing a survey for all women coming for prenatal visits and another one for all women coming for postpartum visits. The receptionists would have been able to identify these women successfully and perhaps would have led to a larger pool of participants. As it was, many eligible women were missed.

If the survey was remembered by the nurse or physicians, it was not given to the woman until the end of the visit. This became an obstacle because while the survey tools were intentionally designed to be completely quickly, they took longer than anticipated to complete. The solution in one case was to take the survey home and mail it back to the office. Limiting the scope and focus of the survey tool to fewer topics would have helped with this problem.

Another limitation of the study was that it could not explore many of the reasons for choosing to not breastfeed. Only one person who did not initiate breastfeeding participated in the study and so was poorly represented. In addition, I do not know why the physician recommended formula to one of the participants. Failure to gain weight can be an indication for formula supplementation, but the medical indications are limited. Further research into specific cases of formula recommendation by physicians would help to identify how often the recommendations are made according to recognized medical indications.

The 3 month follow up was conducted by mail and had only 2 respondents. While a self-addressed and stamped envelope was provided, this required extra effort on the part of the participants to take the time to fill out the survey and mail it back.

Further Research

The providers in this study reported feeling that they had inadequate training in breastfeeding. Further research could include providing training, in particular the interventions recommended by AAFP. Pre- and post-test surveys could be used to compare physician self-confidence in assisting with breastfeeding. While this study focused on Family Physicians, a further study that involved Pediatricians, Obstetrician/Gynecologists, and Nurse-Midwives would provide a better sense of the ways different training models provide breastfeeding education.

Research into current methods of training residents would also be beneficial. Since breastfeeding education is not dictated as part of the required training, there is a lot of flexibility and variability in how or if it is taught. A survey of current practice methods for teaching residents and attempting to correlate that to the breastfeeding rates of the patient population would be very valuable.

This study attempted to examine duration of breastfeeding; however, it had a very limited time frame. To better follow participants from prenatal decision-making to actual duration of breastfeeding, it would be helpful to extend the time frame over a full year or more. Another option would be to survey mothers about past pregnancies, although this would incorporate a large recall bias.

In order to reach the Healthy People 2020 Goals for exclusive breastfeeding, there will need to be more interventions in breastfeeding education of prenatal and infant care as well as education of women and their families that focus specifically at increasing the duration and exclusivity of breastfeeding. In further research of breastfeeding initiation and duration, it would be helpful to distinguish between formula only, breastfeeding and formula, and exclusive breastfeeding. Those 3 categories are helpful to compare to the Healthy People 2020 Goals, whereas the other options listed only served to make the survey longer.

Appendices

References
WHO Ten Steps
Survey #1
Survey #2
Survey #3
Provider survey

References

1. "Goshen (city), Indiana." United States Census Bureau, U.S. Department of Commerce. Last updated 27 June 2013. Accessed 7 August 2013. http://quickfacts.census.gov/qfd/states/18/1828386.html
2. "Breastfeeding Report Card 2012, United States: Outcome Indicators." Centers for Disease Control and Prevention National Immunization Survey, Provisional Data, 2008 births. Accessed 7 August 2013. (http://www.cdc.gov/breastfeeding/data/reportcard2.htm)

3. "Breastfeeding: Maternal and Infant Aspects." Committee on Health Care for Underserved Women. Committee on Obstetric Practice. ACOG Clinical Review. 2007;12(1):1S-16S http://www.acog.org/~/media/Clinical%20Review/clinicalReviewv12i1s.pdf?dmc=1&ts=20130520T0929359497
4. "Breastfeeding, Family Physicians Supporting (Position Paper)." AAFP Breastfeeding Advisory Committee. http://www.aafp.org/about/policies/all/breastfeeding-support.html
5. "Breastfeeding and the Use of Human Milk." American Academy of Pediatrics. Published online February 27, 2012. PEDIATRICS Vol. 129 No. 3 March 1, 2012 pp. e827 – e841http://pediatrics.aappublications.org/content/129/3/e827
6. "Position Statement: Breastfeeding." American College of Nurse-Midwives. Breastfeeding Task Force. Reviesed 05/11. http://midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/000000000248/Breastfeeding%20statement%20May%202011.pdf
7. Ip S, Chung M, Raman G, Chew P, Magula N, DeVine D, Trikalinos T, Lau J. Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries. Evidence Report/Technology Assessment No. 153 (Prepared by Tufts-New England Medical Center Evidence-based Practice Center, under Contract No. 290-02-0022). AHRQ Publication No. 07-E007. Rockville, MD: Agency for Healthcare Research and Quality. April 2007. http://archive.ahrq.gov/downloads/pub/evidence/pdf/brfout/brfout.pdf
8. Maternal, Infant, and Child Health. Morbidity and Mortality. U.S. Department of Health and Human Services. HealthyPeople.gov. http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26
9. "Ten Steps to Successful Breastfeeding." WHO & UNICEF. 1989.
10. Caine VA, Smith M, Beasley Y, Brown HL. The impact of prenatal education on behavioral changes toward breast feeding and smoking cessation in a healthy start population. J Natl Med Assoc. 2012;104(5-6):258-64. Cited in: Ovid MEDLINE(R) at http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=medl&NEWS=N&AN=22973675. Accessed July 19, 2013.
11. Forster D, McLachlan H, Lumley J, Beanland C, Waldenstrom U, Amir L. Two mid-pregnancy interventions to increase the initiation and duration of breastfeeding: a randomized controlled trial. Birth. 2004;31(3):176-82. Cited in: Ovid MEDLINE(R) at http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=med4&NEWS=N&AN=15330879. Accessed July 19, 2013.
12. Rosen IM, Krueger MV, Carney LM, Graham JA. Prenatal breastfeeding education and breastfeeding outcomes. MCN Am J Matern Child Nurs. 2008;33(5):315-9. doi:10.1097/01.NMC.0000334900.22215.ec
13. Brand E, Kthari C, Stark, MA. Factors Related to Breastfeeding Discontinuation Between Hospital Discharge and 2 Weeks Postpartum. J Perinatal Education. 2011;20(1):36-44.
14. Mellin PS, Poplawski DT, Gole A, Mass SB. Impact of a formal breastfeeding education program. MCN Am J Matern Child Nurs. 2011;36(2):82-8; quiz 89-90. doi:10.1097/NMC.0b013e318205589e
15. Anchondo I, Berkeley L, Mulla Z, Byrd T, Nuwayhid B, Handal G, Akins R. Pediatricians', Obstetricians', Gynecologists', and Family Medicine Physicians' Experiences with and Attitudes about Breast-Feeding. Southern Medical J 2012;105(5):243-48.

16. Nakar S, Peretz O, Hoffman R, Grossman Z, Kaplan B, Vinker S. Attitudes and knowledge on breastfeeding among paediatricians, family physicians, and gynaecologists in Israel. Acta Paediatrica 2007;96:848-51.
17. Taveras EM, Li R, Crummer-Strawn L, Richardson M, Marshall R, Rego V, Miroshnik I, Lieu T. Opinions and Practices of Clinicians Associated With Continuation of Exclusive Breastfeeding. Pediatrics 2004;113:e283-90.
18. Taveras EM, Capra AM, Braveman PA, Jensvold NG, Escobar GJ, Lieu TA. Clinician Support and Psychosocial Risk Factors Associated With Breastfeeding Discontinuation. Pediatrics 2003;112:108-15.
19. Watkins AL, Dodgson JE. Breastfeeding educational interventions for health professionals: a synthesis of intervention studies. J Spec Pediatr Nurs. 2010;15(3):223-32. doi:10.1111/j.1744-6155.2010.00240.x
20. Breast-feeding education and practice in family medicine.Sarah J. Clark, Peter Curtis, Gary L. Freed, and James R. Sorenson. Journal of Family Practice.40.3 (Mar. 1995) p263.
21. Freed GL, Clark SJ, Sorenson J, Lohr JA, Cefalo R, Curtis P. National Assessment of Physicians' Breast-feeding Knowledge, Attitudes, Training, and Experience. *JAMA*.1995;273(6):472-476. doi:10.1001/jama.1995.03520300046035.
22. ACGME Program Requirements for Graduate Medical Education in Family Medicine. Effective: July 1, 2007. http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/120pr07012007.pdf
23. ACGME Program Requirements for Graduate Medical Education in Pediatrics. Effective July 1, 2013. https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/320_pediatrics_07012013.pdf
24. ACGME Program Requirements for Graduate Medical Education in Obstetrics and Gynecology. Effective: January 1, 2008. https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/220obstetricsandgynecology01012008.pdf

WHO Ten Steps to Successful Breastfeeding

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth. (now interpreted as: place baby in skin-to-skin contact immediately after birth for one hour)
5. Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
7. Practice rooming-in—allow mothers and infants to remain together—24 hours a day. (moms get just as much sleep this way)
8. Encourage breastfeeding on demand. (8-12 times per 24 hours)
9. Give no artificial teats or pacifiers to breastfeeding infants. (until well established 3-4 weeks)
10. Foster the establishment of breast-feeding support groups and refer mothers to them on discharge from the hospital or clinic.

Survey #1 (Expectant Mothers)

Name: _____ Date: _____
Mailing address: _____
City _____ State _____ Zip Code _____
Phone number: ( ) _____
Age: _____
Ethnicity:

O White/Caucasian
O Hispanic/Latina
O Black/African-American
O Other, please specify: _____

Smoker?

O Never
O Former
O Yes, currently smoke

Relationship status:

O Single
O Married
O Dating/Engaged/Living with partner

Do you use any of the following services?

O WIC
O Medicaid
O Food stamps/SNAP/EBT

Survey Questions

Directions: Please mark the box(es) next to your answer choice(s).

1) Which provider do you see for your pregnancy?

☐ Timothy Thut, MD, GFP ☐ Barb Meyer, MD, GFP
☐ Carla Mishler, MD, GFP ☐ Bethany Wait, DO, GFP
☐ Lane Reed, MD, GFP ☐ Amanda Schmidt, MD, GFP

2) How many biological children have you had?
   ☐ **None, my first pregnancy, skip to Question #5**
   ☐ One
   ☐ More: _____

3) **If you have had children**, what nutrition did you provide?
   ☐ Exclusive formula
   ☐ Formula and breastmilk equally
   ☐ Used formula or pumped breastmilk so partner or other person could feed baby (**circle which was used**)
   ☐ Breastfed for a while, then switched to formula or supplemented with formula
   ☐ Exclusive breastmilk for 6 months

4) **If you breastfed**, how long did you breastfeed?

☐ Tried in hospital ☐ 4 – 6 months
☐ < 2 weeks ☐ 6 – 12 months
☐ 2-6 weeks ☐ >12 months
☐ 6 wks – 3 months ☐ Other: _____

5) Where have you learned about nutrition infant (formula, breastfeeding, pumps) ? **Please mark all that apply**

- ☐ Mother
- ☐ Sister(s)/Friend(s)
- ☐ Breastfeeding class
- ☐ Lactation consultant
- ☐ Nurse
- ☐ Doctor
- ☐ Midwife
- ☐ Books/Magazines, please specify: _____

6) How much time has been spent addressing infant nutrition with your provider? **Please mark all that apply:**
   - ☐ None
   - ☐ Mentioned at least 1 visit
   - ☐ Addressed at every visit
   - ☐ Not discussed enough
   - ☐ Addressed too often
   - ☐ My provider recommended I attend a breastfeeding class
   - ☐ My provider has recommended resources for infant nutrition
   - ☐ My provider has given me infant formula or coupons

7) How much does your provider know about breastfeeding? **Please mark all that apply:**
   - ☐ I am unsure how much s/he knows
   - ☐ A little
   - ☐ A lot
   - ☐ More than I do
   - ☐ S/he can answer all of my questions

8) What are your intentions for your current pregnancy?
   - ☐ Exclusive formula
   - ☐ Formula and breastmilk equally
   - ☐ Use formula or pumped breastmilk so partner or other support person can feed baby
   - ☐ Breastfeed, use formula as needed
   - ☐ Exclusive breastmilk for 6 months

The following questions will use a scale. Please mark the circle that most closely reflects your feelings about each statement. If a question does not apply to you, please leave it blank.

	Strongly disagree--Neutral--Strongly agree				
	1	2	3	4	5
My provider has played an important role in my decision about infant nutrition (breastfeeding or formula)	○	○	○	○	○
I feel confident that I will be able to successfully breastfeed	○	○	○	○	○
My provider believes that breastfeeding is best for most babies	○	○	○	○	○
My provider believes that breastfeeding and formula are the same	○	○	○	○	○
I feel comfortable discussing breastfeeding with my provider.	○	○	○	○	○

Comments: _____

_____

Survey #2 (4-6 weeks postpartum)

Name: _____ Date: _____

Mailing address: _____

City _____ State _____ Zip Code _____

Phone number: ( ) _____

Age: _____

Ethnicity:

O White/Caucasian O Hispanic/Latina O Black/African-American

O Other, please specify: _____

Smoker?

O Never O Former O Yes, currently smoke

Relationship status:

O Single O Married O Dating/Engaged/Living with partner

Do you use any of the following services?

O WIC O Medicaid O Food stamps/SNAP/EBT

Baby's Date of Birth:

How many weeks were you when you delivered?

35 36 37 38 39 40 41 42 Other: _____

Survey Questions

Directions: Please mark the box(es) next to your answer choice(s).

1) Which provider did you see for your pregnancy and delivery?
   - ☐ Timothy Thut, MD, GFP
   - ☐ Carla Mishler, MD, GFP
   - ☐ Lane Reed, MD, GFP
   - ☐ Barb Meyer, MD, GFP
   - ☐ Bethany Wait, DO, GFP
   - ☐ Amanda Schmidt, MD, GFP
2) What type of delivery did you have? **Please mark all that apply**
   - ☐ Vaginal delivery
   - ☐ C-section
   - ☐ Complication: _____
3) How is your baby's health? **Please mark all that apply**
   - ☐ Came home within 4 days
   - ☐ Stayed in hospital, how long? _____
   - ☐ Transferred to _____
   - ☐ Visit to doctor for something other than routine check-up: _____
   - ☐ Visit to the ER
   - ☐ Stayed in hospital overnight after coming home
   - ☐ Has a condition that required follow up by a pediatrician: _____
4) **Mark all that describe your baby's nutrition**:
   - ☐ Exclusive formula
   - ☐ Formula and breastmilk
   - ☐ Breastmilk with occasional formula

- ☐ Use formula or pumped breastmilk so partner or other person can feed baby (**circle which was used**)
- ☐ Exclusive breastfeeding
- ☐ Breastfed, then switched to formula or supplemented with formula

5) **If you breastfed**, how long did you breastfeed?
   - ☐ Tried in hospital
   - ☐ < 2 weeks
   - ☐ 2-6 weeks
   - ☐ Still breastfeeding

6) **If you used formula**, please mark all that describe reasons why:
   - ☐ Went back to work
   - ☐ Not enough breastmilk
   - ☐ Sore breasts or nipples
   - ☐ Baby prefers bottle
   - ☐ Baby was not gaining weight
   - ☐ Family medicine doctor recommended formula
   - ☐ Pediatrician recommended formula
   - ☐ Formula is easier
   - ☐ Formula provided for free or reduced cost
   - ☐ Breatmilk does not have enough of certain things baby needs, what?: _____
   - ☐ Other: _____

7) What support people have helped you? **Please mark all that apply**
   - ☐ Partner
   - ☐ Mother
   - ☐ Sister(s)/Friend(s)
   - ☐ Lactation consultant
   - ☐ Doctor
   - ☐ La Leche League/Breastfeeding group
   - ☐ Other: _____

8) Please mark the following as true/false:

True	False	
☐	☐	My provider has observed me breastfeeding
☐	☐	My provider recommended formula to me, why? _____
☐	☐	My provider recommends breastfeeding for 6 months or greater

The following questions will use a scale. Please mark the circle that most closely reflects your feelings about each statement. If a question does not apply to you, please leave it blank.

	Strongly disagree--Neutral--Strongly agree				
	1	2	3	4	5
My provider has played an important role in my decision about infant nutrition (breastfeeding or formula)	○	○	○	○	○
My provider advocates that breastfeeding is best for most babies	○	○	○	○	○
My provider believes that breastfeeding and formula are the same	○	○	○	○	○
I feel comfortable discussing breastfeeding with my provider.	○	○	○	○	○
My provider has played an important role in helping me with my breastfeeding questions and difficulties	○	○	○	○	○

Comments:

Survey #3 (3 months postpartum)

Name: _____ Date: _____

Mailing address: _____

City _____ State _____ Zip Code _____

Phone number: ( ) _____

Age: _____

Ethnicity:

- O White/Caucasian
- O Hispanic/Latina
- O Black/African-American
- O Other, please specify: _____

Smoker?

- O Never
- O Former
- O Yes, currently smoke

Relationship status:

- O Single
- O Married
- O Dating/Engaged/Living with partner

Do you use any of the following services?

- O WIC
- O Medicaid
- O Food stamps/SNAP/EBT

Survey Questions

Directions: Please mark the box(es) next to your answer choice(s).

1) Which provider did you see for your pregnancy and delivery?
   - ☐ Timothy Thut, MD, GFP
   - ☐ Carla Mishler, MD, GFP
   - ☐ Lane Reed, MD, GFP
   - ☐ Barb Meyer, MD, GFP
   - ☐ Bethany Wait, DO, GFP
   - ☐ Amanda Schmidt, MD, GFP
2) How is your baby's health? **Please mark all that apply:**
   - ☐ Well child visits
   - ☐ Visit to doctor for something other than routine check-up: _____
   - ☐ Visit to the ER
   - ☐ Stayed in hospital overnight after coming home
   - ☐ Has a condition that required follow up by a pediatrician: _____
3) **Mark all that describe your baby's nutrition**:
   - ☐ Exclusive formula
   - ☐ Formula and breastmilk
   - ☐ Breastmilk with occasional formula
   - ☐ Use formula or pumped breastmilk so partner or other person can feed baby (**circle which was used**)
   - ☐ Exclusive breastfeeding
   - ☐ Breastfed, then switched to formula or supplemented with formula

4) **If you breastfed**, how long did you breastfeed?
   - ☐ Tried in hospital
   - ☐ < 2 weeks
   - ☐ 2-6 weeks
   - ☐ 6 wks – 3 months
   - ☐ Still breastfeeding

5) **If you used formula**, please mark all that describe reasons why:
   - ☐ Went back to work
   - ☐ Not enough breastmilk
   - ☐ Sore breasts or nipples
   - ☐ Baby prefers bottle
   - ☐ Baby was not gaining weight
   - ☐ Family medicine doctor recommended formula
   - ☐ Pediatrician recommended formula
   - ☐ Formula is easier
   - ☐ Formula provided for free or reduced cost
   - ☐ Breatmilk does not have enough of certain things baby needs, what?: _____
   - ☐ Other: _____

6) What support people have helped you? **Please mark all that apply**
   - ☐ Partner
   - ☐ Mother
   - ☐ Sister(s)/Friend(s)
   - ☐ Lactation consultant
   - ☐ Doctor
   - ☐ La Leche League/Breastfeeding group
   - ☐ Other: _____

7) Please mark the following as true/false:

True	False	
☐	☐	My provider has observed me breastfeeding
☐	☐	My provider recommended formula to me, why? _____
☐	☐	My provider recommends breastfeeding for 6 months or greater

The following questions will use a scale. Please mark the circle that most closely reflects your feelings about each statement. If a question does not apply to you, please leave it blank.

	Strongly disagree--Neutral--Strongly agree				
	1	2	3	4	5
My provider has played an important role in my decision about infant nutrition (breastfeeding or formula)	○	○	○	○	○
	○	○	○	○	○
I feel good/successful in my attempts to breastfeed	○	○	○	○	○
I feel comfortable discussing breastfeeding with my provider.	○	○	○	○	○
My provider has played an important role in helping me with my breastfeeding questions and difficulties	○	○	○	○	○

Comments: _____

_____

_____

Thank you so much for all your time!!

Prenatal Care Provider Survey

Name: _____ Degree(s): _____

Number of years practicing: _____

1) How much was breastfeeding addressed in your pre-clinical years of medical school?
   - ☐ None
   - ☐ 1 lecture
   - ☐ >1 lecture
   - ☐ <1 chapter of a textbook
   - ☐ 1+ chapters of a textbook
2) How much was breastfeeding addressed in your clinical years of medical school?
   - ☐ None
   - ☐ 1 lecture
   - ☐ >1 lecture
   - ☐ <1 chapter of a textbook
   - ☐ 1+ chapters of a textbook
   - ☐ Time spent with a lactation consultant or other hands-on experience
3) How much was breastfeeding addressed in your residency?
   - ☐ Not at all
   - ☐ 1 didactic lecture
   - ☐ >1 didactic lecture
   - ☐ Few resources available for reference
   - ☐ Multiple resources available for reference
   - ☐ Attending physician was very knowledgeable
   - ☐ Time spent with a lactation consultant or other hands-on experience
4) Do you have personal experience with breastfeeding?
   - ☐ No
   - ☐ Partner breastfed
   - ☐ Personally breastfed at least one child
   - ☐ Close family or friends have breastfed
5) I advocate women breastfeed for:
   - ☐ Not at all
   - ☐ I do not advocate a specific length of time
   - ☐ 6 weeks
   - ☐ 3 months
   - ☐ 6 months
   - ☐ 12 months
   - ☐ Longer: _____
6) Do you own any books on breastfeeding?
   - ☐ No
   - ☐ Yes, number: _____
7) Do you have any specific lactation certification?
   - ☐ No
   - ☐ Yes, please explain: _____

8) Please mark the following as true/false:

True	False	
☐	☐	I discuss the benefits of breastfeeding during prenatal visits.
☐	☐	The nurse or someone else in the office discusses breastfeeding with expectant mothers.
☐	☐	I personally assist a mom if she is struggling with breastfeeding.
☐	☐	There are other people (nurses, lactation consultants, etc.) *in the office* to whom I refer a mom if she is struggling with breastfeeding.
☐	☐	There are other people (nurses, lactation consultants, etc.) *in the community* to whom I refer a mom if she is struggling with breastfeeding.
☐	☐	I recommend formula to women struggling with breastfeeding or infant weight gain.
☐	☐	I advocate breastfeeding classes to expectant women.
☐	☐	I recommend books about breastfeeding to expectant women.

Please mark the circle that most closely reflects your feelings about each statement.

	Strongly disagree--Neutral--Strongly agree				
	1	2	3	4	5
Breastfeeding is best for most babies	○	○	○	○	○
When a mother in my practice has not made a decision about infant feeding, I advocate breastfeeding	○	○	○	○	○
Women have access to information about breastfeeding vs. formula and will decide for themselves which is better for them	○	○	○	○	○
Exclusive breastfeeding for the first 6 months of life is unrealistic for many mothers I see	○	○	○	○	○
I have enough knowledge/training to counsel a woman about benefits of breastfeeding	○	○	○	○	○
Breastfeeding was adequately covered in my pre-clinical years of medical school	○	○	○	○	○
Breastfeeding was adequately covered in my clinical years of medical school	○	○	○	○	○
Breastfeeding was adequately covered in my residency training	○	○	○	○	○
I feel comfortable discussing the benefits of breastfeeding	○	○	○	○	○
I feel comfortable assisting with breastfeeding troubles	○	○	○	○	○
I feel comfortable assisting with first latch-on	○	○	○	○	○
I feel comfortable helping with low milk supply	○	○	○	○	○
I feel comfortable helping with breast pain/tenderness	○	○	○	○	○
I feel comfortable helping with cracked/painful nipples	○	○	○	○	○
I feel comfortable teaching a mother how to manually express breastmilk	○	○	○	○	○

Comments: _____

_____

_____

Thank you for your time!!!