

Striving To Quit-First Breath Qualitative Impact Evaluation Report



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Wisconsin Women's Health Foundation

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Cover photo: Striving To Quit-First Breath Participants Focus Group: Milwaukee, WI

Note: The final evaluation report on Wisconsin's Striving to Quit-First Breath initiative is available at https://www.dhs.wisconsin.gov/opib/index.htm

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Background

Perinatal Smoking

Smoking during pregnancy has been clearly linked to a host of problems, including miscarriage, stillbirth, low birth weight, and preterm delivery. According to the American Congress of Obstetrics and Gynecology (ACOG), "Smoking is one of the most important modifiable causes of poor pregnancy outcomes in the United States." In addition, infant exposure to second- and third-hand smoke increases the risk of Sudden Infant Death Syndrome (SIDS), exacerbates asthma and other lung diseases, and has been linked to other infant health problems, such as ear infections and pneumonia.

Wisconsin has higher maternal smoking rates than the national average (13% vs 9%),¹ and there is a huge disparity in smoking rates based on income. This places an enormous burden on the state's Medicaid program. In 2014, 8,805 babies were born in Wisconsin to mothers who smoked; the majority of those births (70%) were paid for by Medicaid.¹ Overall, 25% of Medicaid members smoked during their pregnancies compared to 6% of women with private insurance.¹

Striving to Quit

In 2011, Wisconsin was one of 10 states that received a Medicaid Incentives for the Prevention of Chronic Diseases (MIPCD) grant from the Centers for Medicare and Medicaid Services (CMS). The Wisconsin Women's Health Foundation, along with the University of Wisconsin Center for Tobacco Research and Intervention (UW-CTRI), entered into a partnership with the Wisconsin Department of Health Services (DHS) to implement the Striving to Quit quality improvement study. The goal of the study was to determine the impact of financial incentives on Medicaid members' engagement in cessation services and

smoking outcomes. UW-CTRI provided expanded services via the Wisconsin Tobacco Quit Line for adult Medicaid members. The Wisconsin Women's Health Foundation provided evidence-based tobacco cessation services to pregnant and postpartum smokers through the First Breath program.

Between 2012 and 2015, the Wisconsin Women's Health Foundation enrolled 1,052 women² into the Striving to Quit-First Breath study.³ During pregnancy, participants received tobacco cessation counseling through the existing First Breath program consisting of three 5-minute counseling



Figure 1: Striving to Quit-First Breath Six-Month Intervention Timeline

¹ Wisconsin Interactive Statistics on Health; Prenatal Care Module. Retrieved 8/12/16.

² A total of 1,356 women were invited to participate in the study. Of this total, the Wisconsin Women's Health Foundation enrolled 1,052 women in the study. After data cleaning and removing pilot/initial test participants, 1,014 women remained in the data set being analyzed by UW-CTRI. For the purposes of this qualitative study, we included all 1,052 case files as being eligible for the impact evaluation analysis.

³ Women enrolled in the Striving to Quit-First Breath study from 8/2012 through 6/30/2014 received a 12-month intervention (five home visits, six phone calls). Women enrolled in the study on or after 7/1/2014 received a six-month intervention (four home visits, five phone calls). The six-month postpartum expired air carbon monoxide test was the key indicator used for all women in both the qualitative and quantitative analyses.

sessions conducted by nurses as part of their regular prenatal care. The standard First Breath program ends when a woman's contact with the prenatal care provider ends, typically shortly after delivery. Through the Striving to Quit-First Breath study, participants received expanded cessation services postpartum. Wisconsin Women's Health Foundation health educators delivered intensive postpartum cessation counseling via home visits, phone calls, and expired-air carbon monoxide (CO) tests, as summarized in Figure 1 (Appendix A: Striving to Quit-First Breath Study Intervention Overview). Health educators were a diverse group of professionals with previous experience in addressing women's health issues, including in nursing, social work, counseling, addiction services, and adult education. Health educators completed training on in-depth tobacco cessation counseling and how to make referrals for other needs, such as breastfeeding, mental health services, housing resources, and family violence services.

Wisconsin Women's Health Foundation's Qualitative Impact Evaluation

While the main focus of the Striving to Quit study was to investigate the quantitative impact of financial incentives, the Striving to Quit-First Breath team recognized the huge positive effect of the expanded services on participants beyond the incentives. With the approval of CMS, DHS, and the UW Health Sciences Institutional Review Board (IRB), the Wisconsin Women's Health Foundation designed and executed a qualitative impact evaluation to investigate the impact Striving to Quit-First Breath had on pregnant and postpartum Medicaid smokers. A small Wisconsin Women's Health Foundation evaluation team was developed, comprised of Striving to Quit health educators, a Striving to Quit-First Breath program manager, and the Wisconsin Women's Health Foundation data manager. All team members maintained their IRB certification and were trained on impact evaluation procedures, qualitative research, and security measures. The qualitative study was conducted from November 2015 through August 2016.

Objectives

The Striving to Quit-First Breath Qualitative Impact Evaluation had four objectives that guided the work and analysis:

- 1. Measure the impact of Striving to Quit-First Breath by comparing key outcomes to other perinatal smoking data. To meet this objective, the Wisconsin Women's Health Foundation evaluation team compared Striving to Quit-First Breath outcomes to First Breath program outcomes.
- 2. Identify the factors that most affected participants' outcomes, not including financial incentives. To accomplish this objective, the Wisconsin Women's Health Foundation evaluation team reviewed all 1,052 participant files and identified over 100 unique factors that had the potential to impact participants' smoking outcomes. This component is referred to as "case summary analysis."
- 3. **Describe the attitudes, experiences, and needs of program participants.** The Wisconsin Women's Health Foundation evaluation team designed a qualitative sub-study to investigate this objective through focus group discussions. A total of 134 Striving to Quit-First Breath graduates engaged in a focus group or in-depth phone interview to share their perspectives on perinatal tobacco use and the services they received via the study. They also shared their recommendations and ideas for future perinatal smoking cessation. This component is referred to as the "qualitative sub-study."
- 4. Develop recommendations for tobacco programs serving prenatal and postpartum Medicaid members. The Wisconsin Women's Health Foundation evaluation team interpreted the results of the case summary analysis, qualitative sub-study, and impact analysis. This component is called "interpretation." Four major recommendations were developed and can be found in the Keys to Success section of this report.

Impact of Striving to Quit-First Breath on Postpartum Smoking Cessation

Quit Rates

State data indicates that about 13% of all Wisconsin births in 2014 (67,119) were to women who smoked, with the majority of these births (70%) paid for by Medicaid.⁴ Available data from Medicaid members who participated in First Breath (prenatal services only prior to Striving to Quit-First Breath) suggests that 35% self-reported quitting at six weeks after birth.⁵

A key premise in designing and implementing the Striving to Quit-First Breath study was that intensive, evidence-based smoking cessation counseling following delivery would improve quit rates. This section of the report highlights findings from the final Striving to Quit-First Breath evaluation conducted by the UW-CTRI, which largely support this premise cited above. The evaluation used 1,014 as the total enrollment for these analyses.

Baseline data (at the time of enrollment in Striving to Quit-First Breath, generally 14 weeks gestation) from the UW-CTRI evaluation indicates that nearly 60% smoked more than 10 cigarettes per day and more than half smoked within 30 minutes of waking. There were only minor differences between the Incentive and Control groups.⁶

The primary smoking outcome for this quality improvement study was biochemically confirmed seven-day point-prevalence abstinence at 26 weeks (six months) postpartum.⁷ As indicated in the table below, the results show that the Incentive Group achieved significantly higher point-prevalence abstinence at six months postpartum than did the Control Group: 14.7% vs. 9.2%, respectively. When self-reported outcomes were analyzed (with no biochemical confirmation), the abstinence rates for the Incentive and Control groups were 16% and 10.6%, respectively.

⁴ Wisconsin Interactive Statistics on Health, Birth Counts and Prenatal Care Modules. Retrieved 8/12/2016.

⁵ This figure is based on data provided by 4,542 pregnant Medicaid members who received First Breath prenatal services between 2005 and 2015 and who had a completed postpartum check form on file. These women did not receive postpartum Striving to Quit-First Breath services and did not have their self-reported quit status biochemically confirmed.

⁶ University of Wisconsin, Center for Tobacco Research and Intervention. *Medicaid Incentives for the Prevention of Chronic Disease, Wisconsin Striving to Quit First Breath Incentive Program, Final Report. 2016.*

⁷ The seven-day point-prevalence, biochemically confirmed abstinence (documented in this study with an expired-air CO test value < 7 ppm) is considered the "gold standard" for non-smoking in smoking cessation research. The measure includes self-reporting and external confirmation, as well as applied intent-to-treat criteria.

	Abstinence Rates	
Striving to Quit-First Breath Postpartum Endpoint	Number Abstinent/Total	
	Control Group	Incentive Group
Seven-Day Point-Prevalence ⁸ Home visit 4 – six months postpartum biochemically confirmed seven-day point-prevalence abstinence rates	47/509 (9.23%)	74/505 (14.65%)
Intent-to-Treat Analysis ⁹ Home visit 4 – six months postpartum biochemically confirmed abstinence rates*	92/509 (18.07%)	175/505 (34.65%)
Responder-Only Analysis¹⁰ Home visit 4 – 6 months postpartum biochemically confirmed abstinence rates*	92/316 (29.11%)	175/360 (48.61%)

*Abstinence based only on an expired-air CO test (passing based on value < 7 ppm); self-reported smoking status was not used in the determination of abstinence for these analyses.

Additional analyses found higher quit rates when not requiring a dual abstinence measure—both biochemical confirmation and self-reported seven-day point-prevalence abstinence confirmation. For example, the last two rows of the table on the previous page reflect the results when intent-to-treat and responder-only (using only those who came to the home visit and completed the biochemical test) criteria are applied, with the abstinence criteria of self-reported smoking eliminated.

The second additional analysis provided data that included responders only (i.e., an analysis that only included the 671 [of 1,014] participants who provided an expired-air CO test value confirming abstinence). Both of these supplemental analyses yielded findings that concurred with the main study outcomes (using the same outcome criteria); in all analyses, the Incentive Group produced a statistically significant higher quit rate than the Control Group.

⁸ UW-CTRI Striving to Quit-First Breath Final Report, Table 2.

⁹ Ibid, Table 4.

¹⁰ Ibid.

Case Summary Analysis

Case Summary Qualitative Research Design

As part of the Striving to Quit-First Breath expanded postpartum services, Wisconsin Women's Health Foundation health educators maintained detailed files for each of the 1,052 participants. These files included case notes, interview forms, and quit-smoking action plans. All files were maintained per study, IRB, and Wisconsin Women's Health Foundation procedures for data security and confidentiality. The Wisconsin Women's Health Foundation evaluation team systematically reviewed each of the 1,052 files and extracted 31 qualitative analysis categories, including over 100 individual factors (see Table 2). Each of the categories that were examined had the potential to impact smoking outcomes beyond the role of financial incentives.

Case Summary Participants

Of the 1,052 total Striving to Quit-First Breath participants, 930 met requirements for this analysis, which were:

- 1. Participant completed the study.
- 2. Participant disclosed complete demographic data.
- 3. Participant disclosed complete smoking history data.

These 930 participant files were used in the case summary analysis. Participant data were collected in the Striving to Quit-First Breath enrollment process via phone and through health educator documentation. No new data were collected as part of this case summary analysis.

Case Summary Procedures

A case file review guide (see Appendix B) was developed by the Wisconsin Women's Health Foundation evaluation team and approved by the IRB. Striving to Quit-First Breath health educators used the guide to pull data from the case files. Data were de-identified and transmitted from the file through SurveyGizmo, a Health Insurance Portability and Accountability (HIPAA)-compliant and Safe Harbor-certified database. All data were encrypted, and hyperlinks were secured. Data were monitored regularly for quality. The evaluation team also synthesized each participant's involvement in Striving to Quit-First Breath using documented case notes and wrote a narrative case summary, which was also entered into SurveyGizmo.

Case Summary Data Analysis

Of the 930 participants,¹¹ 672 (or 72%) completed an expired-air CO test at six months postpartum.¹² Data from these tests were used in analyzing the impact of over 100 factors within 31 categories (shown in Table 2) on smoking outcomes. Two post-intervention outcomes were the focus of this analysis: smoking amount and quit rate.

Intervention Outcome #1: Smoking Amount

Smoking amount was determined by expired-air CO testing. Results were measured in parts per million (ppm) of exhaled CO.⁸ There were six categories:

- 1. Nonsmoker (0-6 ppm)
- 2. Light smoker (7-10 ppm)

¹¹ 930 Striving to Quit-First Breath participants completed the Striving to Quit study and chose to disclose complete demographic and smoking history data.

¹² CoVita's Smokerlyzer monitor was used to measure the amount of CO on a smoker's breath in parts per million.

- 3. Smoker (11-15 ppm)
- 4. Frequent smoker (16-25 ppm)
- 5. Heavy smoker (26-50 ppm)
- 6. Very heavy smoker (more than 50 ppm)

Group differences in self-reported information were calculated using one-way analysis of variance (ANOVA). If there were less than 50 participants associated with a particular factor, it was excluded from the analysis.

Intervention Outcome #2: Smoking Quit Rate

Quit rates were determined by comparing participants who "passed" their expired-air CO test as a nonsmoker (0-6 ppm) and those who "failed" the expired-air CO test (7 or more ppm). Data were analyzed using Chi-Square. If there were less than 50 participants associated with a particular factor, it was excluded from the analysis.

Case Summary Demographics

Participant demographics were collected during the study enrollment process (via phone during pregnancy). Some of these demographics included:

- Participants ranged in age from 18 to 44 at enrollment.
- Nearly half were in their early- to mid-20s.
- The majority of women were black (39%) or white (46%).
- One-third of participants had a high school diploma or General Educational Development (GED) certificate.
- A quarter of participants had less than a high school diploma.
- Only 5% had a college degree or higher.
- Over half of participants were not employed at the time of enrollment.
- More than a third of participants were single, and half were in a relationship but not married.
- Around 40% of participants started smoking in their early teens (between the ages of 11 and 15), and the remainder started smoking between age 16 and 20.
- About half of participants lived in a household where there was at least one other smoker.

A full list of case summary demographics can be found in Appendix C.

Table 2: 31 Qualitative Analysis Categories

	Analysis Categories	Factors and Stratification Details		
Den	nographics and Household Characteristics			
1.	Age at Enrollment	20 years old or younger		
		21-24 years old		
		25-29 years old		
		30-34 years old		
		35-39 years old		
		40+ years old		
2.	Race	American Indian/Alaskan Native		
		Asian		
		Black		
		Hawaiian/Pacific Islander		
		White		

Analysis Categories		Factors and Stratification Details	
3.	Educational Attainment	Less than a high school diploma	
		High school diploma or GED	
		Some college or two-year degree	
		College degree	
4.	Employment Status at Striving to Quit	Not employed	
	Enrollment	Employed	
5.	Relationship Status	Single	
		In a relationship	
		Married	
		Divorced	
6.	Transiency (number of times physical	0 moves	
	address changed)	1-2 moves	
		3+ moves	
7.	Other Smokers in Household	No other smokers in household	
		One or more other smokers in household	
Psyc	hosocial Characteristics		
8.	Type of Major Stressor	Mental health diagnosis	
		Level of daily stress	
		Substance use	
		Legal issues	
		Prior trauma	
		Death of family member or friend	
		Illness in family	
		Relationship problems	
		Domestic violence	
		Caring for multiple children	
		Financial insecurity	
		Homelessness	
		Transiency	
		Job problems	
		Social solation	
		Health problems	
		Child health problems	
		Child Protective Services (CPS) involvement	
9.	Number of Major Stressors	0	
		1-2	
		3-4	
		5+	
10.	Number of Support People	0	
		1-2	
		3-5	
		6+	
11	Breastfeeding	Did not attempt	
		Did attempt breastfeeding	
Smo	king History and Smoking Status		
1.	Age Started Smoking	13 years old or younger	
		14-17 years old	
		18-21 years old	
		22+ years old	

Analysis Categories		Factors and Stratification Details	
2.	Cigarettes per Day (cpd) at Max	0-10 cpd	
		11-20 cpd	
		21+ cpd	
3.	Smoking Status at Striving to Quit Home	Not smoking	
	Visit 1	Smoking	
4.	Number of Cigarettes Smoked per Day	None	
	at Striving to Quit Home Visit 1	1-5 cpd	
		6-10 cpd	
		11+ cpd	
Atti	tudes About Smoking and Quitting		
16.	Importance of Quitting	Very important to participant	
		Somewhat important to participant	
		Not very/not at all important to participant	
17.	Confidence in Ability to Quit	Very confident	
		Somewhat confident	
		Not very/not at all confident	
18.	Reason for Quitting	Baby's health	
		Want to be a role model	
		Mom's health	
		Money	
		To end addiction	
		Other people	
		Feel pressured	
Quit	Quit Experiences		
19.	Smoking Triggers	Social triggers	
		Smelling/seeing cigarettes	
		Alcohol	
		Stress	
		Negative emotions	
		Daily routines	
		Boredom	
		Caffeine/coffee	
20.	Barriers to Quitting	Being around other smokers	
		Loss of alone time	
		Few coping skills	
		Few stress management skills	
		Weight gain	
		Withdrawal symptoms	
21.	Type of Coping Skills	Breathing techniques	
		Self-talk	
		Distractions	
		Oral fixation techniques	
		Drink water	
		Physical activity	
		Medications/nicotine replacement therapy (NRT)	
22.	Number of Coping Skills	0	
		1-2	
		3+	

Analysis Categories		Factors and Stratification Details
23.	New Coping Skills Learned	0
		1+
24.	Quitting Challenges	Social smoker
		Friends and family smoke
		Partner smokes
		Low support to quit
		Using cigarettes to cope
		Using cigarettes for alone time/breaks
		Limited coping skills
		Low confidence
		Highly addicted to nicotine
25.	Quit Smoking Strategies	Cold turkey
		Cut down
		Quit-smoking medications
		E-cigarettes
Enge	agement in Services	
26.	Number of First Breath Sessions	0
		1-2
		3-4
		5-6
		7-10
		11+
27.	Number of Striving to Quit Home Visits	<u><</u> 50%
		> 50%
28.	Length of Striving to Quit Postpartum	Shorter than average (< 20 minutes for home visits 2 and 3, and <
	Home Visits	30 minutes for home visits 1 and 4)
		Average (21-45 minutes for home visits 2 and 3, and 31-60
		minutes for home visits 1 and 4)
		Longer than average (> 46 minutes for home visits 2 and 3, and >
		61 minutes for home visits 1 and 4)
29.	Health Educator	10 Wisconsin Women's Health Foundation health educators
30.	Participant Engagement	High engagement
		Low engagement
31.	Communication with Participant	Very easy to reach participant
		Somewhat easy to reach participant
		Somewhat difficult to reach participant
		Very difficult to reach participant

Case Summary Results

The Striving to Quit-First Breath quit rates for participants in the Control Group (no incentives) ranged from 9.2% to 29.1%, depending on the analytic method used (see Table 1 on page 5).¹³ Looking into these data further, Wisconsin Women's Health Foundation analyzed the impact of over 100 individual factors within 31 analysis categories on the two post-intervention outcomes: smoking amount and quit rate. There were 671 case files included in this analysis. The full demographic data set is included in Appendix C.

Differences in Six-Month Postpartum Expired-Air CO Test Results by Demographic Characteristics

Table 3: Quit Rates at Six Months Postpartum by Demographic Characteristics

*Sample was < 50 women, too small to generate a representative quit rate

Δge	# of Women	Quit Rate (% of women with expired-air
	women	CO test lesuit <u><</u> oppin)
<u><</u> 20	15	т —
21-24	224	46%
25-29	223	35%
30-34	139	31%
35-39	57	40%
40+	14	*

Race	# of Women	Quit Rate (% of women with expired-air CO test result <u><</u> 6ppm)
American Indian	16	*
Asian	5	*
Black	296	37%
Hawaiian/Pacific Islander	1	*
White	302	41%

of

Women

237

267

57

Quit Rate

(% of women with expired-air

CO test result < 6ppm)

39%

40%

32%

Educational Attainment	# of Women	Quit Rate (% of women with expired-air CO test result <u><</u> 6ppm)
< High school	162	41%
degree		
High school	222	42%
degree/GED		
Some college	164	32%
College degree	35	*

	<i>u</i> . f	Quit Rate
	# OT	(% of women with expired-air
Employment	Women	CO test result <u>< 6</u> ppm)
Unemployed	204	42%
Employed	144	32%

*	Divorced	7
Quit Rate (% of women with expired-air CO test result <u><</u> 6ppm)	Transiency (# times physical address changed through six months postpartum)	# of Women
42%	0	283
32%	1-2	283

Relationship

In a relationship

Status

Single

Married

Other Smokers in Household	# of Women	Quit Rate (% of women with expired-air CO test result <u><</u> 6ppm)
No other	193	42%
smokers		
1+ other	214	35%
smokers		

Transiency		
(# times physical		
address changed		Quit Rate
through six months	# Of	(% of women with expired-air
postpartum)	Women	CO test result <u>< 6</u> ppm)
0	283	39%
1-2	283	39%
3+	283	37%

Intensive postpartum smoking cessation counseling helped a diverse group of women achieve consistently high quit rates.

¹³ The rate of 9.2% represents the seven-day point-prevalence, biochemically confirmed abstinence, including self-reporting, external confirmation, and intent-to-treat criteria. The rate of 29.1% represents only those participants who provided an expired-air CO test value confirming abstinence and excludes self-reports and intent-to-treat (671 out of 1,014).

When looking at post-intervention smoking outcomes (smoking amount and quit rate), there were no significant differences when comparing racial groups, educational attainment, transiency, or relationship status. Statistically significant variations were seen with:

- **Employment**: Women who were unemployed at enrollment had significantly higher post-intervention quit rates than employed women (42% vs.32%, p = 0.02).¹⁴
- **Age**: Women aged 21 to 24 had the best quit rate (46%), which was significantly higher than 25- to 29year-olds (35%, p = 0.02) and 30- to 34-year-olds (31%, p = 0.004). Limitation: Younger women generally have a shorter smoking history, potentially confounding this result.
- Other smokers living in the home: Participants who lived with at least one other smoker smoked more cigarettes (p = 0.03) and had significantly worse quit rates (p = 0.06). Thirty-five percent of these women quit compared to 42% of those who did not live with another smoker (See Appendix C).

Impact of Psychosocial Characteristics on Six-Month Postpartum Expired-Air CO Test Results

At the first postpartum home visit (home visit 1), which occurred within a few weeks after delivery, participants reported on a number of psychosocial characteristics, including a discussion of major life stressors. A full list of the stressors examined is in Appendix D.

Type of Stressors

Stress was a major issue for participants of the Striving to Quit-First Breath study, with many participants experiencing multiple stressors. The **six most common major life stressors** reported by participants (n = 672) were:

- 1. Financial insecurity (57%)
- 2. High/chronic daily stress (43%)
- 3. Job/unemployment issues (40%)
- 4. Relationship problems (38%)
- 5. Insecure housing/transiency (21%)
- 6. Mental health diagnosis (20%)

When comparing women with different life stressors, there was little variation in quit rates for women who experienced a particular stressor compared with women who did not experience that particular stressor. There were only two stressors where statistically significant variances were found between women who did and did not experience that particular stressor:

- **Death of a family member or friend** (experienced by 106 women). Only 28% of participants who disclosed experiencing the death of a loved one were able to quit smoking compared with 41% of those who did not experience the death of a loved one (p = 0.01).
- **Difficulty caring for multiple children** (identified by 123 women as a stressor¹⁵). Twenty-nine percent of participants who found caring for multiple children stressful quit smoking compared with a 41% quit rate for women who did not report this as a stressor (p = 0.01).

Although these two stressors were not the most commonly experienced, they are important to note and deliberately address in smoking cessation counseling.

¹⁴ It is possible that women who went back to work had less time to devote to the Striving to Quit-First Breath program and/or that working brought additional stressors. This result was unexpected and is an interesting area for future research.

¹⁵ Many additional women also care for multiple children, but 123 women identified this as a major stressor for them personally.

While the particular stressors women identified did not generally predict smoking cessation outcomes, the number of major stressors did have a significant impact on women's ability to quit and stay smoke-free. Statistically significant differences were seen when examining the total number of major stressors a participant experienced.

Table 4: Quit Rates at Six Months Postpartum by Number of Major Stressors Experienced

		Quit Rate
Number of		(% of women with expired-air
Stressors	# of Women	CO test result <u>< 6</u> ppm)
0	203	41%
1-2	264	40%
3-4	143	37%
5+	62	31%

Total number of major life stressors significantly impacted women's smoking quit rates.

As shown in Table 4, the number of stressors strongly influenced quit rates: women with 0-2 major life stressors smoked significantly less than women with 5+ major stressors (p = 0.02).

Influence of Women's Smoking History on Six-Month Postpartum Expired-Air CO Test Results

Table 5: Quit Rates at Six Months Postpartum by Participant Smoking History

*Sample was <<u>5</u>0 women, too small to generate a representative quit rate

		Quit Rate			Quit Rate
Age Started		(% of women with	Maximum # of		(% of women with
Smoking	# of	expired-air CO test	Cigarettes Ever	# of	expired-air CO test
(years of age)	Women	result <u>< 6</u> ppm)	Smoked per Day	Women	result <u>< 6</u> ppm)
<u><</u> 13	77	38%	0-10 cpd	269	44%
14-17	197	40%	11-20 cpd	269	35%
18-21	165	35%	21+ cpd	120	35%
22+	34	*			

There were no significant differences in postpartum smoking outcomes when comparing the age at which participants started smoking. However, participants' historical maximum smoking amount was predictive of Striving to Quit-First Breath quit rates. Women who were historically "light smokers" had a quit rate of 44% through Striving to Quit-First Breath, significantly better than women who were historically moderate smokers (11+ cpd) at 35% quit rate (p = 0.02).

Influence of Early Postpartum Smoking Status on Six-Month Postpartum Expired-Air CO Test Results Participants reported their smoking status at the first postpartum home visit (home visit 1), which occurred within one month of the delivery date. The following longer-term six-month postpartum quit rates for women were examined after dividing women into groups based on their smoking status at home visit 1.

Table 6: Smoking Abstinence Rates at Six Months Postpartum by Smoking Behavior at Home Visit 1

		Six-Month				Six-Month Abstinence
		Abstinence Rate				Rate
		(% of women with		Cigarettes per		(% of women with
Smoking Status	# of	expired-air CO test		Day (cpd) at	# of	expired-air CO test
at Home Visit 1	Women	result <u>< 6</u> ppm)		Home Visit 1	Women	result <u>< 6</u> ppm)
Not smoking	171	73%		None to very light smoker (0-5 cpd)	261	35%
Smoking any amount	494	27%		Light smoker (6-10 cpd)	125	18%
			-	Moderate to heavy smoker (11+ cpd)	47	13%

Early postpartum smoking behavior was a critical factor in long-term smoking cessation success. When comparing smoking status at the first postpartum visit, there was a significant difference in longer-term smoking amount and quit rates; 73% of women who were smoke-free by the first postpartum visit were still smoke-free at six months postpartum (smoking amount p < 0.0001; quit rate p = 0.0001).

The number of cigarettes women were smoking at the first postpartum home visit was also a factor that impacted six-month postpartum smoking outcomes. Women who were smoking less than five cigarettes per day at the first postpartum home visit had a six-month quit rate of 35% compared with women who were light smokers (6-10 cpd) at only an 18% quit rate at six months postpartum (p = 0.0006).

Influence of Women's Attitudes About Smoking on Six-Month Postpartum Expired-Air CO Test Results *Reasons Women Want to Quit*

Participants identified their reasons for wanting to quit during their first postpartum home visit. As shown in Table 7, women's top reasons included: infant health, their own health, to save money, and wanting to be a good role model.

Table / Quit hates at six months i ostpartan by i articipants neusons for Quitting							
Reasons for Quitting Smoking		Six-Month Quit Rate					
(women could select multiple		(% of women with expired-air CO					
reasons)	# of Women	test <u><</u> 6 ppm)					
Infant's health	481	41%					
Mom's health	449	39%					
Save money	254	38%					
Want to be a role model	218	40%					
End addiction	73	37%					
Feeling pressured	71	34%					
Others	68	35%					

No statistically significant differences were seen between the different reasons that women chose. This suggests that it is important for women to articulate a reason for wanting to quit, but the particular reason chosen is not necessarily indicative of long-term success.

Quit Importance and Confidence

At home visit 1, participants also ranked how important quitting was to them and how confident they were that they would be smoke-free by the end of the intervention.

		Six-Month Quit			
Quit Importance		Rate	Quit Confidence		Six-Month Quit Rate
(measured at two		(% of women with	(measured at		(% of women with
weeks	# of	expired-air CO test	two weeks	# of	expired-air CO test
postpartum)	Women	result <u>< 6</u> ppm)	postpartum)	Women	result <u>< 6</u> ppm)
Very important	448	42%	Very confident	337	48%
Somewhat	155	30%	Somewhat	268	33%
important			confident		
Not very	22	*	Not very	53	21%
important			confident		

Table 8: Quit Rates at Six Months Postpartum by Participants' Attitudes about Quitting

*Sample was < 50 women, too small to generate a representative quit rate

Both **quit importance** and **quit confidence** had a significant impact on postpartum quit rates. Participants who said that quitting was "very important" at the first postpartum home visit ultimately smoked significantly less (p = 0.009) and had significantly better quit rates postpartum (p = 0.005) than participants who felt it was only "somewhat important."

Similarly, women who said they were "very confident" in their quit attempt smoked significantly less at six months postpartum than women who were somewhat (p = 0.005) and not very/not at all confident (p < 0.0001). Nearly 50% of women who expressed confidence in their ability to quit/stay abstinent were smoke-free at six months postpartum compared with 33% of women who were somewhat confident (p = 0.0002) and only 21% of women who were not very or not at all confident (p < 0.0001).

Building self-efficacy and confidence helps women stay smoke-free.

Influence of Quitting Behaviors on Six-Month Postpartum Expired-Air CO Test Results

Wisconsin Women's Health Foundation health educators identified smoking cessation strategies that women used during their participation in Striving to Quit-First Breath. The most common strategies were:¹⁶

- Cutting down—either by reducing the number of cigarettes per day or reducing the number of days of smoking (45%)
- Medications offered by individuals' physicians (nicotine replacement therapy, Chantix, and Wellbutrin were noted) (17%)
- Cold turkey (13%)
- E-cigarettes (7%)

¹⁶ Quit rates and smoking amounts were not compared within these groups due to small sample sizes.

Coping Skills

Participants identified their coping skills at the first postpartum visit. Results are summarized in Table 9.

Table 9: Quit Rates at Six Months Postpartum by Type of Quit-Smoking Coping Skills

*Sample was < 50 women, too small to generate a representative quit rate

		Six-Month Quit Rate
Type of Coping Skills		(% of women with expired-air CO
(women could identify multiple skills)	# of Women	test result <u>< 6</u> ppm)
Using distractions to get through a	397	41%
craving		
Oral fixation techniques	302	40%
Physical activity	147	37%
Positive self-talk	104	46%
Breathing techniques	52	54%
Nicotine replacement therapy	39	*

More important than the specific coping skills a woman uses are:

- 1. The total number of coping skills she has.
- 2. That she is working to **build new skills moving forward**.

As shown in Table 10 below, participants entering the postpartum intervention with at least one coping skill had significantly higher quit rates (44%) than women who reported not having any coping skills (p = 0.04). During the intervention, many participants acquired new coping skills. Participants who did not acquire any new skills by the six-month postpartum mark had a quit rate of 32%, which was significantly lower than participants who acquired one or more coping skills and had a quit rate of 47% (p = 0.02). Helping women learn new coping skills improves their chances of staying smoke-free.

Table 10: Ouit Rates at Six Months Post	nartum by Number of Coning Skills
Table 10. Quit nuces at 51x months 1 05t	partain by Namber of coping skins

			# of Newly		
# of Quit-Smoking		Six-Month Quit	Acquired Coping		Six-Month Quit
Coping Skills		Rate	Skills		Rate
(measured at two		(% of women with	(measured at six		(% of women with
weeks	# of	expired-air CO test	months	# of	expired-air CO test
postpartum)	Women	result <u>< 6</u> ppm)	postpartum)	Women	result <u>< 6</u> ppm)
0	319	35%	1+ new skill	351	47%
			learned		
1-2	194	44%	0 new skills learned	109	32%
3+	152	41%			

Influence of Challenges and Barriers on Six-Month Postpartum Expired-Air CO Test Results Smoking Triggers

Striving to Quit-First Breath participants were asked to identify their smoking triggers. Eight types of smoking triggers were examined. As shown in Table 11 on the following page, the four most common triggers were: stress, daily routines involving cigarettes, smelling or seeing others using cigarettes, and using tobacco to help cope with negative emotions.

Table 11: Quit Rates at Six Months Postpartum by Reported Smoking Triggers

Smoking Triggers		Six-Month Quit Rate
(women could identify multiple		(% of women with expired-air
triggers)	# of Women	CO test result <u>< 6</u> ppm)
Stress	529	37%
Daily routines	293	32%
Smelling or seeing cigarettes	246	39%
Negative emotions	232	34%
Boredom	147	30%
Social triggers	110	44%
Alcohol	109	38%
Caffeine/Coffee	75	20%

Self-Reported Barriers

Participants also identified barriers to quitting smoking, as summarized in Table 12.¹⁷

Barriers to Quitting Smoking		Six-Month Quit Rate		
(women could identify multiple	# of	(% of women with expired-		
barriers)	Women	air CO test result <u><</u> 6 ppm)		
Too few stress management techniques	315	33%		
Being around other smokers	194	40%		
Too few coping skills	154	34%		
Withdrawal symptoms	138	28%		
Loss of alone time that comes with	93	37%		
smoking				
Weight gain	41	32%		

Table 12: Quit Rates at Six Months Postpartum by Reported Barriers to Quitting

Observed Challenges

Throughout the intervention, Wisconsin Women's Health Foundation health educators took detailed notes on each participant's quit attempts, goals, challenges, and strategies. These data complement the self-reported data shown above. The most frequent challenge observed by health educators was women "using cigarettes to cope." More challenges are detailed in Table 13 on the following page.

Major Challenges:

- Stress management
- Smoking-saturated environments

¹⁷ Additional, less common barriers were also mentioned; since less than 50 participants cited each, they were excluded from the analysis.

Table 13: Quit Rates at Six Months Postpartum by Quitting Challenges Identified by Wisconsin Women's Health Foundation Health Educators

Type of Challenge		Six-Month Quit Rate
(Health educators could identify multiple challenges	# of	(% of women with expired-air CO test
per participant)	Women	result <u>< 6</u> ppm)
Participant uses cigarettes to cope	484	34%
Participant's family and friends (non-partner) smoke	224	44%
Participant uses cigarettes for alone time/breaks	219	31%
Participant has limited coping skills	170	29%
Participant's partner smokes	153	42%
Participant is highly addicted to nicotine	116	19%
Social smoker	94	51%
Participant has low confidence in herself	79	28%
Participant lacks support to quit	49	37%

Participants who were identified by health educators as being "highly addicted to nicotine"¹⁸ had the poorest outcomes, with only 19% quitting by six months postpartum, a significantly lower quit rate than women who struggled with other challenges ($p \le 0.05$). Participants with low confidence in their quit ability and limited coping skills had the next worst outcomes, with six-month quit rates of only 28% and 29%, respectively.

On the other end of the spectrum, participants who were identified as "social smokers"¹⁹ had very positive outcomes. Social smokers had a significantly higher quit rate at 51% (p \leq 0.002). Similarly, participants whom health educators observed as having friends, family, and/or partners who smoked also did very well in the Striving to Quit intervention, with quit rates at 44% (p \leq 0.01) and 42% (p \leq 0.03), respectively. These friends, family, and/or partners are referred to as the woman's "social network," which is distinct from household smokers.²⁰

Impact of Session Completion on Six-Month Postpartum Expired-Air CO Test Results

At the second home visit, around two months postpartum, participants were asked to recall the number of First Breath counseling sessions they received during pregnancy from their prenatal care provider. Based on these numbers, the number of prenatal (First Breath) counseling sessions appears to have an impact on post-intervention smoking outcomes. Not surprisingly, the group of women with the best quit rates included participants who reported receiving three or four First Breath sessions (the First Breath standard of care in compliance with the Clinical Practice Guideline).²¹ These were significantly better rates than women who received fewer First Breath sessions.²²

Women who completed the recommended number of Striving to Quit-First Breath sessions had the best outcomes.

¹⁸ Defined by a Fagerstrom Test for Nicotine Dependence score in case notes.

¹⁹ Defined by "using cigarettes for social connection" and/or "social triggers" recorded on in-person interview form.

²⁰ Having partners, family, or friends who smoke (social network) is different than the "household smokers" data on page 8. Women who lived with another smoker had worse outcomes than women with smokers in their social networks, as reported above. Household smokers were more likely to be roommates or extended family members than partners or close family/friends.

²¹ Fiore MC, Jaén CR, Baker TB, et al. *Treating Tobacco Use and Dependence:* Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. U.S. Public Health Service.

²² Limitation: Because the number of sessions was self-reported and retrospective, these data may not be an accurate reflection of actual prenatal services. Women who reported receiving five or six First Breath sessions had lower quit rates than women receiving the standard of care of three or four visits. However, this may be a reflection of an overall larger number of prenatal visits due to social, health, mental, and/or emotional complications during pregnancy.

Table 14: Quit Rates at Six Months Postpartum by Number of First Breath Prenatal Sessions

*Sample was < 50 women, too small to generate a representative quit rate

# UI FIISL DI Eatil		
Sessions		
(Reported by		Six-Month Quit Rate
women		(% of women with expired-air
retrospectively)	# of Women	CO test result <u>< 6</u> ppm)
3-4	116	51%
1-2	80	40%
5-6	64	34%
None ²³	50	*
7-10	46	*
11+	20	*

Data on postpartum services were recorded in real time by the Wisconsin Women's Health Foundation health educators during the intervention.

Table 15: Quit Rates at Six Months Postpartum by Number of Striving to Quit-First Breath Postpartum VisitsCompleted

# of Home Visits		Six-Month Quit Rate
(Reported by		(% of women with expired-
health educators)	# of Women	air CO test result <u><</u> 6 ppm)
≥ 50% of home	516	48%
visits		
< 50% of home	129	36%
visits		

Women who completed all or most of their postpartum visits (possible total of 4) had significantly better outcomes than those who completed half or fewer visits; 42% of women who completed all or most visits quit compared with only 26% who completed half or fewer visits (p = 0.001). On the same note, participants whose visits were longer than average (> 46 minutes for home visits 2 and 3, and > 61 minutes for home visits 1 and 4) had a 48% quit rate compared to 36% for women whose visits were average length (21-45 minutes for home visits 2 and 3, and 31-60 minutes for home visits 1 and 4) (p = 0.01).

Impact of Engagement in Postpartum Services on Six-Month Postpartum Expired-Air CO Test Results

Health educators also identified participants who were highly engaged²⁴ during the intervention and those with lower engagement. Engagement had an impact on both smoking amount and quit rates post-intervention, as shown in Table 16 on the following page. Participants who were identified as having "high" engagement had a quit rate of 43% compared with just 20% of those with low engagement (p = 0.0005).

Engagement:

- Frequent communication
- Personalized goal setting
- Session completion

²³ *Limitation*: Some First Breath sites so seamlessly integrate the First Breath counseling into prenatal visits that women don't know which portion of the visit is specific to the First Breath program. A small number of women didn't receive prenatal counseling due to late entry into prenatal care, late enrollment in First Breath, and/or early delivery dates. Also, because the number of sessions was self-reported and retrospective, it may not be an accurate reflection of actual prenatal services.

²⁴ Measured by the number of visits and phone calls completed, as well as the number of individualized action plans completed.

Table 16: Quit Rates at Six Months Postpartum by Level of Participant Engagement

		Six-Month Quit Rate	
		(% of women with expired-air	
Engagement	# of Women	CO test result <u>< 6</u> ppm)	
High	150	43%	
Low	55	20%	

Health educators also rated how difficult it was to communicate and connect with participants. Rankings ranged from "very easy" to "very difficult," as shown in Table 17 below.

Table 17: Quit Rates at Six Months	Postpartum by Leve	l of Participant Engagement
------------------------------------	--------------------	-----------------------------

		Six-Month Quit Rate
Difficulty to		(% of women with expired-air
Reach	# of Women	CO test result <u>< 6</u> ppm)
Very easy	151	55%
Somewhat easy	218	38%
Somewhat	139	32%
difficult		
Very difficult	93	32%

Participants who were reported as being "very easy" to reach had the highest quit rate of 55%, significantly higher than those reported as "somewhat easy," "somewhat difficult," or "very difficult" to reach ($p \le 0.01$). Participants in the "very easy-to-reach" category also smoked significantly less than those in the "very difficult-to-reach" category (p = 0.01).

Summary: Qualitative Analysis—What We Learned from the Case Files

Women achieved positive smoke-free outcomes with the intensive home visiting intervention. The Striving to Quit-First Breath quit rates for participants in the Control Group (no incentives) ranged from 9.2% to 29.1%, depending on the analytic method used (see Table on page 5).²⁵

The women who achieved the best six-month postpartum outcomes:

- Were highly engaged in Striving to Quit-First Breath services.
- Learned new coping skills to help them stay smoke-free.
- Viewed their quit attempt as a priority and were confident in their ability to succeed.
- Were smoke-free immediately after delivery.
- Did not live with other smokers.
- Reported fewer major life stressors.

Wisconsin Women's Health Foundation health educators were able to effectively serve a very diverse group of participants. Results did not vary significantly by race, educational level, or relationship status. Health educators were able to track and engage with highly transient women, one-third of whom moved three or more times during the Striving to Quit-First Breath study intervention. With the intensive intervention, women were successful in quitting smoking despite facing an array of challenges and barriers and lacking social support.

The next section of this report moves from what was learned from the case file analysis to what was learned from women through focus group discussions and individual interviews.

²⁵ The rate of 9.2% represents the seven-day point-prevalence, biochemically confirmed abstinence, including self-reporting, external confirmation, and intent-to-treat criteria. The rate of 29.1% represents only those participants who provided an expired-air CO test value biochemically confirming abstinence and excludes self-reports and intent-to-treat (671 out of 1,014).

Qualitative Sub-Study: Participant Focus Groups and Interviews



Qualitative Sub-Study Design

In-person focus groups and additional phone interviews were conducted with 143 women. All women were Striving to Quit-First Breath "graduates," having completed the study in the last 48 months. The Wisconsin Women's Health Foundation evaluation team created an interview guide (Appendix E) that was used for both focus groups and interviews. The guide was reviewed and approved by DHS, CMS, and the IRB. Two independent facilitators²⁶ were recruited, were trained on the study instrument, and led the focus groups. Facilitators completed HIPAA and UW-Madison Collaborative Institutional Training Initiative training. Wisconsin Women's Health Foundation evaluation team members conducted the phone interviews after being trained on interview skills, usage of the study instrument, and transcription procedures. The groups and interviews were conducted during the spring of 2016.

Focus Group Recruitment

Participants of the qualitative sub-study were recruited from the pool of Striving to Quit-First Breath participants who had completed their first and last home visits. Participants were mailed a letter explaining the purpose of focus groups and inviting them to register to attend. The letter also explained that if they were unable to travel (lacked transportation or lived too far from a focus group site) or felt uncomfortable speaking in a group setting, they could complete a phone interview. Study staff then called potential participants to explain the sub-study. Interested participants either registered for a focus group or scheduled a phone call.

One hundred and forty-three women volunteered to participate in the qualitative sub-study:

- Seventy-six women participated in a focus group.
- Sixty-seven women chose to complete phone interviews.

²⁶ Facilitators were not involved in Striving to Quit participant services or study procedures and had never met any of the participants prior to the focus group sessions. This was done to maintain objectivity and allow the participants to freely express themselves.

Table 18: Focus Group Locations and Sub-Study Participation

	# of Focus	Total #
City	Groups	Participants
Milwaukee	5	36
Racine	2	17
Kenosha	2	8
Green Bay	1	7
Madison	1	3
Eau Claire	1	5
Statewide—individual phone	N/A	67
interviews		
TOTAL	12	143

Demographics

The full list of focus group/phone interview participant demographics can be found in Appendix F.

As shown in Table 19 below, most women in the focus groups/interviews were in their mid-20s to early-30s. Half of the focus group/phone interview participants were white, 36% were black, 5% were American Indian, and another 5% identified as other. The majority of women had a high school diploma, GED, or less.

Age	Number	Percent
18-22 years old	27	19%
23-27 years old	44	31%
28-32 years old	47	33%
33-37 years old	19	13%
38 + years old	6	4%
Race	Number	Percent
American Indian	3	2%
Black	52	36%
White	73	51%
Other	7	5%
Unknown/prefer not to answer	8	6%
Educational Attainment	Number	Percent
Less than high school diploma	24	17%
High school or GED	53	37%
Some college or two-year degree	39	27%
College degree	14	10%
Unknown/prefer not to answer	13	9%

Table 19. Focus Gro	un and Interview	Particinant	Demogra	nhics
	up and interview	r ai titipai it	Demogra	princo

Additionally, most women in the focus groups and interviews first started smoking at age 16, and they reported an average of three previous serious quit attempts prior to Striving to Quit-First Breath. Half of participants lived in households where there were one or more other smokers. Half of the sub-study participants finished the study as biochemically verified nonsmokers, and the other half tested as smokers (expired-air CO test result ≥7 ppm). At the time of the focus groups and interviews, participants were between nine months and 48 months postpartum.

Procedures Focus Groups

Twelve focus groups with a total of 76 participants were held at community-based locations in six cities across Wisconsin (Table 18). Each group was comprised of three to 10 women. Multiple groups were held in three of the larger urban areas: Milwaukee (five groups), Racine (two groups), and Kenosha (two groups). Madison, Green Bay, and Eau Claire each offered one group.

Participants verbally consented to an oral consent statement read by the group facilitator following the interview guide (Appendix E). Focus group discussions lasted about 60 minutes. Upon the completion of the focus group, participants were given \$60 worth of gift cards.²⁷ Group discussions were audio recorded. Audio recordings were saved to a secure, password-protected laptop and then transcribed verbatim, maintaining anonymity of respondents. Transcripts and interview data were monitored regularly for quality.

Individual Phone Interviews

In addition to the 76 women who participated in a focus group, 67 participants completed an in-depth phone interview. Participants verbally consented via a statement read by a trained interviewer. Phone interviews lasted between 20 and 30 minutes. The interviewer followed the interview guide (Appendix E) and entered responses verbatim into SurveyGizmo. Upon completion of the phone interview, participants were mailed \$60 worth of gift cards.²³ Interview data were monitored regularly for quality.

All Sub-Study Participants

All women were asked a series of open-ended questions following the interview guide (Appendix E), with three predetermined themes: perinatal smoking attitudes, responses to services, and recommendations for future programming. Prompts were rarely used and only occurred if participants did not fully understand the question. The data reflected here are the results of semi-structured discussions among participants.

Focus Group and Interview Data Analysis

Transcripts were de-identified and entered into SurveyGizmo, a HIPAA-compliant and Safe Harbor-certified database system. Data were independently reviewed by five members of the evaluation team and with feedback from the outside facilitators. Team members developed an initial list of codes based on the data. The team met several times to revise the codes and gain consensus for a master list of codes. Wisconsin Women's Health Foundation evaluation team members then coded the data in SurveyGizmo using the Text Analysis tool. During analysis, team members met frequently to discuss the data and emerging themes. Codes were then ranked from most common to least common responses.

²⁷ Gift cards were funded by the Wisconsin Women's Health Foundation, not through the CMS Striving to Quit-First Breath subcontractor agreement. Women received a combination of \$40 and \$20 Visa and Wal-Mart gift cards based on women's preferences.

Focus Groups and Interview Results

The list of qualitative focus group and interview results can be found in Appendix G.

Perinatal Smoking Attitudes

1. Why do women smoke during pregnancy? General Response: Stress

Prenatal Smoking Reasons

When asked about the reasons women smoke during pregnancy, "stress" was the most common response, accounting for one-third of all responses. Participants went on to further identify the source of the stress, which included unplanned or unwanted pregnancy, issues with the father of the baby, stress from other children, and the lack of financial resources. One participant said her reason was "fear and stress of raising that child on my own. That's 99.99% of it." Another participant shared this story: "My son. I wasn't ready for him. I'm 18. I'm scared. My "Fear and stress of raising that child on my own. That's 99.99% of it."

"Smoking was all I had."

"My son. I wasn't ready for him. I'm 18. I'm scared."

water broke and I'm walking around the neighborhood looking for a cigarette, dripping water. I literally smoked going up the stairs to the hospital to have him. Smoking was all I had."

After stress, the most common response (20% of comments) was that smoking is a habit from prepregnancy and is a part of their life. "It's hard to make your mind stop doing what it's been doing for years...that's part of your life. You wake up; you want to smoke. You eat; you want to smoke. You feel sad; you want to smoke." The third most common response (11% of comments) focused on nicotine addiction and smoking to avoid nicotine withdrawal. Mood was also discussed: boredom, anxiety, depression, fear, and feeling overwhelmed and angry were mentioned as reasons for smoking during pregnancy: "It's a crutch to self-medicate from feeling upset, stressed, or down."²⁸

Environmental cues were also identified as reasons for prenatal smoking: other smokers in the home, seeing and smelling cigarettes, and smoking socially. Others mentioned pregnancy-related body changes, hormones, and mood swings (6% of responses). One participant said: "I think it might be harder for pregnant women to stop, with hormones being so out of whack while pregnant. It makes it difficult. Things get to you a lot quicker. Smoking was my go-to for a few minutes of release somehow." Others mentioned the lack of support as a reason for smoking. One participant said it was hard, "especially if you don't have a solid support system. You go to the go-to cigarette. It's temporary, but it's there for you." Also mentioned were issues of lack of "mind control" or will power, oral fixation, selfishness, and generational smoking.

2. Why do you think women relapse after having a baby? General Response: Smoking is used as a coping mechanism.

²⁸ Nicotine addiction should not be discounted. According to the CDC, nicotine can be as addictive as heroin, cocaine, and alcohol. Most experts now agree that nicotine addiction is also a chronic disease, requiring ongoing treatment and intervention.

Postpartum Relapse Reasons

Women were asked the reasons for postpartum relapse and provided a range of answers. Like prenatal smoking, the most common response (nearly 20%) was that smoking helped them manage their stress. The second most common response was that they "quit for the baby" and resumed smoking after delivery. Along those same lines, another 13% of responses were that they feel less guilt about smoking when they were no longer pregnant. Many alluded to the fact that smoking became socially acceptable again.

Another common response (11%) focused on mental health and mood. Smoking helped participants who were feeling overwhelmed. One participant explained: "If your inner self isn't happy, you're gonna find whatever it takes to make you happy." Participants also described how smoking helped them manage

postpartum depression. One woman said: "I had postpartum depression. I would breastfeed, get him dressed and that was it. I

didn't do nothing with him. He is now detached from me. That's where smoking comes in. It kept me calm." Smoking also helped participants deal with anger, irritation, and boredom. "The mood swings get bad. And go from bad to worse. Instead of dealing with me arguing and stuff, he [partner] gave me a cigarette to help me cool down. It worked out for the both of us. It made me shut up and go to sleep."

Several responses were also about how smoking helped them deal with unique aspects of the postpartum period: caring for a newborn and lack of sleep. "It sounds awful, but the stress of being a new mom. It's hard to count to 10 with a screaming baby. It's easier to step outside, take a breather, adjust yourself, then go back inside to take care of the baby."

Also mentioned were smoking triggers that were more common post-pregnancy, including seeing and smelling cigarette smoke, being around other smokers, and drinking alcohol. Other less common, but still mentioned, responses included: old habits/routines, cravings return, needing alone time, issues with the

father of the baby, easy access to cigarettes, using smoking as a reward for delivery, and pain management. "Once you're a smoker, it's just what you do. I think people find it hard to let go of something you do daily. They also haven't found other ways to cope with stress, boredom...even happiness. I don't think people who smoke, especially heavy smokers, don't know what to go to when they don't have their cigarettes."

3. What did you get out of smoking? General Response: Calming, distractions, and coping

Positive Aspects of Smoking

Next, participants were asked about the positives they received from smoking or what they "got out of smoking." Of the 158 responses,²⁹ more than half pointed to improved mood and improved state of mind. Specifically, they indicated that smoking is calming and soothing and eases their mind. One participant described it this way: "When you light up and take that first puff, it is almost a euphoric feeling. A sense of calm.... That's

"When you light up and take that first puff, it is almost a euphoric feeling. A sense of calm..."

"The stress of being a new mom.

It's hard to count to 10 with a screaming baby. It's easier to

step outside, take a breather,

adjust yourself, then go back

inside to take care of the baby."

"I had postpartum depression."

"They haven't found other ways to cope with stress, boredom...even happiness."

²⁹ Responses were counted individually, and women could give more than one response that fell into a given category for analysis.

the only reason." Also mentioned under improved mood were distraction from life, trauma, and other "bad stuff." One participant stated: "It's a way to step away, to step out of all of those problems. Smoking was a way to step out of all the crazy and go back in feeling more refreshed." Others mentioned that smoking helped manage their anxiety and anger. The next most common response about the positive

aspects of smoking was that smoking is a coping mechanism for stress, which accounted for over a quarter of all responses. Another 10% of responses identified that smoking offered alone time and freedom as a benefit. Seven percent of responses were about the physical benefits of

smoking, specifically digestive help and pain management. Less common responses included smoking as a social activity or something to do, and two mentioned that smoking was a "friend."

4. What are some of the bad things women experience with smoking? General Response: Health problems and shame

Negative Aspects of Smoking

When asked to discuss the negative aspects of smoking, the most common response, with nearly 40% of responses, focused on infant health problems. Most of these comments were general, but some identified

specific problems, such as low birth weight, prematurity, breathing problems, birth defects, nicotine withdrawal, and death. Many shared personal stories like one woman who said: "My child was born with RSV [respiratory syncytial virus] because I smoked basically the whole pregnancy. And he was very small. He kept going in and out of the hospital. He was in the tent. He couldn't come out. He still has asthma. All because I smoked."

After infant health, the second most common response was their own "mom health problems," which accounted for 36% of all responses. Again, most comments were general, but some identified specific health problems, such as respiratory problems, cancer, oral health, and later even death. The third most common response, with 6% of all responses, was a tie between smell and mood/mental health, specifically feeling guilt or shame and an increase in anxiety and depression symptoms. "The kids don't like it, that's for sure. And I feel a lot of shame with it. I don't like it, but I am still doing it." Less common responses included the effect on older children, their kids seeing them smoke, decreased bonding time with their infant, and their kids growing up to be smokers themselves. One participant

shared this story: "My [daughter] came to me while I was in the bathroom and opened up the door...and that little girl...she had a cigarette for ME. She was like, 'Here.' And I was like, 'Lord Jesus, that is MESSED UP.' That's my baby. She is only 16 months. She knows that mama goes in that bathroom when I need a cigarette." Also mentioned, though less common, were the cost of smoking, judgment, and the fact that cigarettes are messy.

"[My baby] was very small. He kept going in and out of the hospital. He was in the tent... He still has asthma. All because I smoked."

"My [daughter] came to me while I was in the bathroom and opened up the door...and that little girl....she had a cigarette for ME. She was like, 'Here.' And I was like, 'Lord Jesus, that is MESSED UP.' That's my baby. She is only 16 months [old]. She knows that mama goes in that bathroom when I need a cigarette."

"It's a way to step out of all [the] problems."

5. How did your social network impact your quit attempt? General Response: Family and friends who smoke made quit attempts more difficult

Impact of Social Support Network

Women were also asked about the role of social support networks, or loved ones, on their quit attempts. The majority of respondents (61%) said that the people in their life made it harder for them to quit. The most common reason identified was exposure to tobacco smoke. "My family would straight up be disrespectful. They would smoke around

61% of women said that their family and friends made it harder to quit smoking.

me, in my house, in the car when they picked me up. They would even ask me for cigarettes or try to short me theirs. They were not supportive at all."

Other common reasons identified were that people in their lives did not care about their quit attempt or they judged, shamed, or nagged them about smoking. Participants described the challenges their loved ones created by giving them cigarettes or asking for cigarettes. Participants also mentioned that loved ones added to their overall stress level, making quitting harder.

Only 39% of women said the people in their life made it easier for them to quit. Most of these women said their loved ones supported their quit attempt. "I have a really supportive family. Although 90% of them smoke cigarettes, they didn't come around me. They would go out to their car to smoke." A few women indicated that avoiding other smokers was a way to make it easier. Others mentioned quitting together with a loved one or that their loved ones encouraged them and motivated them to quit. "Through the whole Striving to Quit program, my fiancé, we would put [him] on speaker [phone]. He would talk right back with [my health educator]. He was working the program with me. Even though it wasn't for him."

When asked what loved ones could have done differently, several women offered suggestions such as "not smoking around me" or "trying to quit with me." Also mentioned were suggestions for loved ones to be more "encouraging" or "motivating." Other participants said they wished their loved ones wouldn't "add to their stress level." Other less common suggestions were: expressing interest in their quit attempt, being more positive, not smoking in the house, reminding them not to smoke, stopping nagging, and reducing their stress level.

Smoking Cessation Services

Women were asked about their experience with the First Breath and Striving to Quit programs.

1. What was the best part of the First Breath prenatal services? General Response: The clinicians at First Breath sites

First Breath

First Breath is a brief intervention implemented by trained prenatal care providers (First Breath providers) as part of regular prenatal care. The intervention includes three brief (3- to 5-minute) counseling sessions and noncash incentives.

When participants were asked to provide feedback about the First Breath program, most responses were positive. The most common feedback was that they liked the support. "Every interaction and intervention helps, even if it is just five minutes," one participant said. A few participants mentioned that they liked

First Breath because it led to other programs (like Striving to Quit-First Breath and the First Breath *Text-Connect-Quit* service).

A few others said that it was positive because it held them accountable and it was easy and/or convenient. The most neutral responses were that they received information, resources, and incentives. Women mentioned that it was an "OK" or "fine" experience. The most common negative response was that the First Breath provider was hard to contact, and there were problems with follow-up, often due to staff turnover at First Breath sites.

Participants also spoke about their First Breath providers (prenatal provider implementing First Breath). **Eighty-six percent had a positive experience with their prenatal First Breath provider**, and 14% had a negative experience. The top reasons for a positive experience included:

- First Breath offered someone to talk to.
- The provider was nonjudgmental.
- The provider was knowledgeable.

A few women also mentioned that their provider was positive/uplifting and compassionate and that they felt a personal connection to him or her. Of the negative responses women had about their provider, most were about a lack of connection and lack of engagement. Others mentioned a lack of availability, misinformation, and an inability to relate to issues faced by smokers.

Participants were also asked about program materials. Most (82%) had a positive reaction to the noncash incentives; they mentioned that the gifts were useful and also offered a few new suggestions. When asked about the patient education materials (booklets), most participants had a neutral reaction because they either didn't remember receiving them or their provider didn't go through it with them. Some said the materials were not helpful, although no reasons were given as to why.³⁰

All of the valuable feedback about the First Breath program has been shared with Wisconsin Women's Health Foundation-First Breath staff and will be incorporated into clinician education and First Breath programming updates in 2016 and 2017.

- 2. What was the best part of Striving to Quit postpartum program? General Responses:
 - Personal connection with Wisconsin Women's Health Foundation health educators
 - Intensive cessation services

Striving To Quit-First Breath

The Striving to Quit-First Breath study consisted of intensive smoking cessation counseling via home visits and phone calls with a trained Wisconsin Women's Health Foundation health educator during the postpartum period as detailed in Appendix A. Expired-air CO tests were conducted at the first and last home visits, and gift cards were given for completing study activities. Participants and their health educator developed a quit-smoking plan (action plan) at each visit.

"I liked that [my health educator] came to the house.... It shows that you have support.

³⁰ Limitation: Striving to Quit-First Breath participants had varying levels of health literacy, and some were not native English speakers. These factors play into the utility of health education materials, like those from First Breath.

When asked to describe their experience in Striving to Quit-First Breath, participants focused much of their discussion on their health educator. Of the 324 comments²⁵ about the Striving to Quit health educators, 95% were positive and only 5% were negative. Participants identified several factors that contributed to a positive experience with their health educator. The major factor was that their health educator was positive, uplifting, or encouraging. Participants also mentioned that their health educator was helpful, was

supportive, and listened. One participant said of her Wisconsin Women's Health Foundation health educator: "She was very encouraging. She pushed enough to make you think. She made me feel like it was tailored to me." Participants also spoke of the accessibility and availability in a positive light. Also mentioned was the connection, bond, or comfort they felt from their health educator. "It was mostly just her energy and her believing that I

could do it. It kept pushing me forward. She was actually concerned. She asked about my kids. She wanted to know what was going on. She was really positive." Only 5% of comments were negative, and these included lack of availability/flexibility, not feeling a connection, or knowing their health educator from previous services.

Participants reported positive responses to the overall program (91% of all comments). The most common response was that the program was informational and educational. Many mentioned the one-on-one visits during home-based services in a positive light. "I liked that she came to the house.... It shows that you have support. The father of my kids was in prison so I didn't have his help, and I had no family so someone in my

case; I was kind of dependent on that extra support." Participants also commented on the materials, goal-setting tools, challenges, and new coping skills/strategies they acquired. "She would help me try and figure out what is happening in my brain, what are my talents, what are my coping skills? There were so much different

things. She like delved into my brain. She was almost like a mirror to me. She was very special to me." Only 9% of comments about the Striving to Quit-First Breath program were negative; these included frustration with the strict visit windows and gaps between visits, especially toward the end of the program.

Reaction to the Striving to Quit-First Breath financial incentives was also positive (87%). A majority of comments pointed to the gift cards as being motivating. Several women also explained that the incentives were a nice "perk" or "bonus" to participation. "I think that the amount given was just right. No one should have to pay you to be healthy, but it is a perk and appreciated. Even if I got zero dollars, I would love this program the same."

There were a few neutral responses to the gift cards. For example, one participant said, "The gift cards were fine, but the home visits were more motivating." There were also negative comments about the gift cards. The most common negative response was that they "didn't need the incentives and wanted to quit for the baby." A handful of women also mentioned that they could use the gift cards to buy cigarettes.

When asked what they spent their gift cards on, nearly a third said, "Diapers or wipes." Another large portion of women mentioned baby clothes and other baby-related items. Several women spent the money on gas or food. A smaller number of women reported using the gift cards on kid gear and baby food or formula. Other women reported spending the money on household items, hygiene products, nicotine replacement therapy gum, and date nights. When asked about suggestions for incentives in the future, the most common response was to receive more gift cads in smaller amounts. Other suggestions included

"She was very encouraging. She pushed enough to make you think... It was tailored to me."

"It was mostly just her energy and her believing that I could do it. It kept pushing me forward." higher amounts, gift cards that prohibited the purchase of cigarettes, gas cards, and products or services instead of gift cards.

Participants were also asked about their reaction to expired-air CO tests that were taken at one-month and six-month postpartum visits. Reactions to the tests were mostly positive, with 88% providing a positive response. Nearly half of all positive reactions were about how expired-air CO tests motivated them. Other common responses included a positive reaction to

The CO tests were a "reality check."

the evidence, ability to track progress, and that the tests were a "reality check." Others mentioned that the tests held them accountable. One participant said the tests were "definitely a shock factor and a wow factor. It may be a better idea to do these during pregnancy...[to] help women trying to quit before delivery."

Negative reactions to the expired-air CO tests accounted for only 12% of the overall comments. Some women thought the CO machine wasn't accurate.³¹ Others said that the test wasn't motivating or that it added to their stress level. Two women stated that they were able to "cheat" the systems, and two others mentioned that it was hard to perform the test. Many women suggested that the CO test should also be performed during pregnancy.

Participants reported changes to their knowledge, attitude, and behavior about smoking as a result of Striving to Quit-First Breath. The most common change was that they learned new coping skills and learned to set goals. Other common responses included increased knowledge about the benefits of quitting and about environmental tobacco smoke. Some women reported a sense of accomplishment and "thinking differently."

Recommendations for Future Services

- 1. What would have made it easier for you to quit? General Responses:
 - More support from family and friends
 - More tools to manage stress
 - More Striving to Quit services

Helping Pregnant/Postpartum Women Quit

When asked to discuss what would make it easier for women to quit smoking and stay abstinent during pregnancy and in the postpartum period, participants had a number of ideas. The most common response was support from family and friends. Another common response was reducing stress levels and finding positive stress relief.

Focusing on the baby and other children was identified as a way to make it easier to quit. One participant shared this insight: "To be honest, [messaging should focus on] the health and safety of their child. If they are smoking already, their own health doesn't matter to them. But their child might matter to them. They need to know why their choices matter if they continue to smoke." The recognition that everyone is different and that there is no single correct way to quit was also mentioned. Although a few women

³¹ Limitation: Exposure to environmental tobacco smoke can cause a participant to test as a smoker on the expired-air CO test machine.

disagreed, there was general consensus that showing shocking visuals of the consequences to baby would be impactful in helping women quit, as long as it was done in a positive way.

A few women mentioned that sharing personal stories about the consequences of smoking would help. Support groups, interaction with other pregnant smokers, and access to quit-smoking counselors were also identified as ways to help women quit. Other programming ideas included incentives, visiting moms in the hospital, helping moms figure out their triggers, and providing positive education. Environmental ideas included avoiding smokers and smoking environments and stopping generational smoking. A few women mentioned banning tobacco sales to pregnant women and not advertising cigarettes at all.

Suggestions for New Programming for Pregnant and Postpartum Women

Participants were asked to imagine they could design a brand new program to help pregnant and

postpartum women quit smoking. Nearly half of participants said to "keep Striving to Quit" and to continue to offer one-on-one homebased counseling. Similar suggestions included more communication with a counselor, more visits, and a longer duration program. "I think there needs to be more visits, especially around the six-month mark. I think that's when I heard from my health educator less, but I wish I could have saw her more. She was so helpful and kinda like my only support."

I think there needs to be more [home] visits, especially around the six-month mark.... I wish I could have saw her more. She was so helpful and kinda like my only support."

The second most common response was to hold support groups or create opportunities for pregnant smokers to interact with each other. Others suggested integrating topics like stress management, exercise, and smoking cessation together. When asked about messaging, nearly a third of participants suggested "focusing on the baby," while another 20% suggested focusing on the mother. Another common suggestion was to have visuals and shocking images showing the effect of smoking on the baby. Other messages included staying positive, "don't give up," "taking baby steps, "and "you are not alone." A few said, "The earlier the better," and others said, "It's never too late."

Suggestions for New Programming and Initiatives for Support Network (Relatives, Friends, Roommates)

Participants were also asked about their suggestions for new programs or initiatives targeting support networks. Nearly a quarter suggested creating a home-visiting program like Striving to Quit. Many others also suggested offering support, information, and education. Several others suggested focusing on a smoke-free home and reducing family exposure to environmental tobacco smoke. When asked about suggestions for messages to target support networks, the most common response was "it's a personal choice." Other common responses included "Let's do it together." Several others also suggested focusing on the baby or family.

Summary: Focus Group and Interview Analysis—What We Learned from Striving to Quit-First Breath Graduates



Relationships Matter

Participants credited their relationships with health educators as being critical in their success in quitting smoking. Women's relationships with health educators were:

- Long term.
- Personal.
- Consistent.
- Trusting.
- Skill building.

Conversely, women cited **lack of support from family and friends** as a **major barrier** in their quit attempts. Living with other smokers and lacking a support system make it very difficult to quit smoking.

Smoking is used as a coping mechanism and distraction from stressors. Postpartum depression, stress, and anxiety were consistent undertones in women's comments and feedback. These issues play an important role in women's ability to quit and stay smoke-free.

The intensity and frequency of Striving to Quit-First Breath services were welcomed by participants. While the intervention was time intensive, most women wished they could have had more home visits and contact with their health educator (past the end of the study period) to help them continue to stay smokefree. Women did not perceive the frequent home visits and phone calls to be invasive or a burden, as could be the case with an intervention of this nature.
Interpretation and Implications

Table 20 summarizes findings from both the case summary analysis (file review) and the focus groups and interviews (women's feedback). Data is grouped into four categories based on statistical significance (from the case summary analysis) and perceived importance (from the focus group discussions and interviews). The diagram below outlines factors considered in this analysis based on their statistical and perceived impact on smoking cessation outcomes postpartum.

Table 20: Statistical Significance and Perceived Importance of Factors Impacting Smoking Cessation Outcomes

Statistical Significance

 High Statistical Significance + Low Perceived Importance 1. Participant age 2. Smoking amount (pre-intervention) 3. Quit importance and confidence 4. Triggers 5. Number of coping skills 6. Level of addiction 	 High Statistical Significance + High Perceived Importance 1. Intensive cessation services 2. Relationship with health educator 3. Living with another smoker 4. Number of stressors
Low Statistical Importance + Low Perceived Importance 1. Race 2. Educational attainment 3. Age started smoking 4. Specific coping skills	 Low Statistical Significance + High Perceived Importance 1. Type of stressors 2. Relationship status 3. Reasons for quitting 4. Perceived barriers (pre- intervention) 5. Smokers in support network

Perceived Importance

High Statistical Significance + High Perceived Importance Intensive Cessation Services

Women who completed all or most postpartum visits had quit rates of 42% compared with only 26% of those who completed half or less than half of the scheduled sessions. Furthermore, longer sessions (home visits > 46 minutes) produced better cessation outcomes. Women with longerthan-average visits had quit rates of 48% compared with 36%

High Statistical Significance + High Perceived Importance

- 1. Intensive cessation services
- 2. Relationship with health educator
- 3. Living with another smoker
- 4. Number of stressors

of those with average-length visits. These numbers reflect agreement among study participants that additional smoking cessation counseling would be helpful. Women also emphatically requested more information, more contact with a counselor, and longer duration of services.

Relationship with Health Educator

The impact evaluation shows the importance of a long-term, one-on-one, trusting, consistent relationship with one service provider. Participants spoke at length about the positive experience of having a trusting, consistent (same person), and long-term connection/relationship with their health educator. Health educators had the time to focus on the root causes of tobacco use and helped

participants develop action plans and coping skills. Participants also mentioned that the skills, knowledge, and insight they acquired as a result of this relationship are far reaching—beyond tobacco—into other areas of their life. Participants who felt a lack of connection with their health educators were more likely to be dissatisfied with services.

Other Smokers in Home

Participants who lived with at least one other smoker smoked more cigarettes (p = 0.03) and had significantly worse quit rates (p = 0.06). Thirty-five percent of these women quit compared to 42% of those who did not live with another smoker. Women living in a household with another smoker typically had minimal control over exposure to environmental tobacco smoke, experienced near-constant environmental triggers (seeing/smelling smoke), and had consistent access to cigarettes in the home. Other smokers in the household are especially pertinent in the early postpartum period, when many women spend more hours at home caring for their newborns.

Number of Stressors

The number of stressors strongly influenced quit rates: women with 0-2 major life stressors smoked significantly less than women with 5+ major stressors (p = 0.02).

High Statistical Significance + Low Perceived Importance

Six factors in this quartile had high statistical significance but were rarely or never discussed during the focus groups or interviews.

Younger women in their early to mid-20s had the best quit rates of any group. However, age was not mentioned during the focus groups. Smoking amount pre-Striving to Quit-First Breath was another factor with statistical significance but was rarely mentioned in the focus groups or individual interviews. The groups tended to focus on bigger picture issues, and although

High Statistical Significance

+ Low Perceived Importance

- 1. Participant age
- 2. Smoking amount (pre-intervention)
- 3. Quit importance and confidence
- 4. Triggers
- 5. Number of coping skills
- 6. Level of addiction

lots of personal information was shared, age was not discussed as an important factor.

Quit importance and confidence were also strongly correlated with quit success but, again, were not mentioned in the focus groups. It's possible that again, this is a personal attribute and one that is hard to verbalize in a focus group setting or structured phone interview.

With regard to triggers, some had statistical significance and others did not. Triggers were mostly absent from the discussions, but the two triggers that were mentioned—stress and social cues—were not statistically significant. Participants who were identified as "highly addicted" in the case summary analysis had some of the worst quit rates of any group. Although addiction was mentioned when participants were asked about reasons for prenatal smoking, it was much less common than other explanations, such as stress. Participants also tended to talk about and discuss "willpower" or "mind control" more often than addiction.

Low Statistical Significance + High Perceived Importance

There were several factors that had little to no statistical impact on quit outcomes yet were important to participants in the focus groups and interviews.

Major stressors identified through this impact evaluation were serious and complex: financial insecurity, stress, unemployment, domestic violence, insecure housing, and mental health diagnoses.

Surprisingly, however, many of the women citing major stressors (including mental health disorders, transiency, homelessness, and baby/child health issues) had nearly equal quit rates to women who did not experience those stressors. These specific issues undoubtedly

Low Statistical Significance

- + High Perceived Importance
- 1. Type of stressors
- 2. Relationship status
- 3. Reasons for quitting
- 4. Perceived barriers
- 5. Smokers in support network

make it harder for women to quit.³² As noted previously, the total number of stressors experienced seems to have more impact on quit success than the presence/absence of any given stressor.

Unexpected results: There were a few stressors experienced by women who had higher quit rates than those who did not. These differences were not statistically different but interesting nonetheless. Nearly half of women who disclosed a substance abuse disorder quit smoking compared with 39% of women who did not disclose substance abuse. Health educators reported that for some, quitting smoking was viewed as the "last piece of the puzzle" toward complete recovery. These women may also have been connected to other services, including counseling and treatment, during their enrollment in Striving to Quit-First Breath. Women may have also acquired coping skills or confidence from working on or having to overcome other addictions.

Another example with surprising outcomes was around the issue of relationships, including domestic violence. Although the differences were not statistically significant due to small sample size, women who disclosed domestic violence had quit rates of 48% compared with 38% of women who did not disclose domestic violence. It's important to note that women who were included in this group *disclosed* their experience with domestic violence. If they disclosed this information, they were probably ready for help and to take action or were currently connected to other services. Health educators noted that anecdotally, there seemed to be a correlation between a woman leaving the controlling environment/person and quitting smoking. So for some, stressors may lead to growth, development of coping skills, and building resiliency and self-efficacy, which can contribute to a successful quit attempt.

Some women—particularly single women—spoke at length about their relationship status as having a huge effect on their smoking habits. Participants also talked about the social triggers to smoke and noted that being around other smokers was a major barrier to quit. Interestingly, though, none of these issues—relationship status, social triggers, or smoking networks—were predictive of smoking outcomes. In fact, the only social factor that had a statistically significant impact on smoking outcomes was "living with another smoker."

"Reasons for quitting" was another area where there was a disparity between perceived and actual impact. Women in the qualitative sub-study spoke at length about their reasons for quitting smoking, sharing stories, sometimes deeply personal or troubling. Yet in the comparison of reasons, there were no

Low Statistical Importance + Low Perceived Importance

- 1. Race
- 2. Educational attainment
- 3. Age started smoking
- 4. Specific coping skills

³² However, there were isolated situations and circumstances where stressors positively influenced a woman's quit attempt. Homelessness, for example, limited a woman's access to cigarettes. The new environments she moved to (friend's house and a shelter) did not allow smoking.

significant differences between the reasons participants gave for wanting to quit. Perhaps having a reason—any reason—to quit smoking is enough to make an impact.

Low Statistical Importance + Low Perceived Importance

There were a few factors that had both low statistical significance and low perceived importance among participants. These included race, educational attainment, age started smoking, and specific coping skills. These factors should not be discounted, however.

The lack of statistical differences between white and black women in Striving to Quit-First Breath was consistent with other Wisconsin perinatal smoking data, where smoking rates for the two groups are nearly identical. During the focus groups, race was mostly absent from the discussion. As one health educator put it, "Addiction doesn't care what color your skin is." Although the analysis revealed that race was of low perceived importance, there is a wealth of research documenting the impact of smoking on birth outcomes, including high rates of low birth weight and preterm babies and, to a lesser degree, infant mortality. These poor outcomes are especially high among black women who smoke. Striving to Quit-First Breath has demonstrated that intensive, one-on-one counseling with specially trained providers can be effective with diverse populations.

Coping skills were another category with low statistical significance and low importance in the qualitative sub-study. Although the *type* of coping skill did not appear to have much influence, the *number* of coping skills a participant had at enrollment and the *number of new* coping skills acquired during the course of the intervention did have an impact on smoking outcomes. Thus, perinatal smoking cessation interventions should include strategies to increase and strengthen coping skills.

Keys to Success—Lessons Learned and Recommendations for Future Programming

1. Smoking cessation interventions targeting Medicaid members should begin while women are pregnant, continue for at least six months postpartum, and be delivered by skilled staff via a variety of personal contacts.

The Striving to Quit-First Breath postpartum intervention started too late for some women. In the Striving to Quit-First Breath study, home visit 1 occurred within two weeks after delivery of the baby. This project demonstrated that early postpartum smoking behavior is a critical factor in long-term smoking cessation success. In the future, it is recommended that more intensive services should begin prenatally, allowing time to build a relationship with the dedicated counselor and hopefully prevent relapse early in the postpartum period.

The consistent, trusting, long-term connection with their health educator was a key to Striving to Quit-First Breath's success. Based on participant feedback, having an advocate to help guide women and provide support through their quit-smoking journey, address major life stressors, and set long- and short-term quit goals was essential. Each quit attempt was individually tailored to the current needs of a participant, which promoted her sense of self-accountability.

Wisconsin Women's Health Foundation health educators had expertise in tobacco cessation and perinatal health, insight into participants' social environment, and knowledge of community and local resources. Every effort should be made to continue supporting specially trained health educators for pregnant and postpartum Medicaid smokers.

Pregnant and postpartum smokers want more cessation counseling. Data supports that the more counseling women receive, the higher their quit rates. The Clinical Practice Guidelines state that there is "a strong dose-response relation between the session length of person-to-person contact and successful treatment outcomes."³³ This study provides further evidence, with women who received more minutes of counseling achieving higher quit rates.

Participants recognized the need for cessation efforts to begin during pregnancy. Integrating tobacco cessation efforts into existing prenatal care (e.g., First Breath) is a proven strategy for success, and providers should continue to offer counseling during prenatal care visits. Health educators or other specially trained staff focusing on tobacco cessation should complement prenatal support services and begin developing relationships during these visits. Striving to Quit-First Breath's intensive smoking cessation counseling is a service that few prenatal care providers have the time to provide.

2. Perinatal smoking cessation interventions that focus on skill-building activities and practical tools should be prioritized to maximize positive outcomes.

Participants in this study stated that they understand the risks of smoking during pregnancy. Solely providing more health education to pregnant and postpartum women is not enough to change behavior.

³³ A Clinical Practice Guideline for Treating Tobacco Use and Dependence: 2008 Update. U.S. Public Health Service. Retrieved 8/12/16.

Instead, providers should focus on increasing women's quit confidence and self-efficacy, prioritizing being smoke-free, and teaching new coping skills. This can be done by:

- Using a strengths-based approach: Providers should highlight women's successes and focus on what women are already doing well. Providers should reinforce participants' existing strengths, as these same skills and strategies can be used when women decide to address their nicotine addiction.
- **Promoting self-awareness:** Wisconsin Women's Health Foundation health educators used a stepwise approach that moved participants toward becoming smoke-free. The process started by helping participants become more self-aware and conscious of their smoking habits, triggers, and why they use smoking to cope. This foundation allowed participants to develop action plans to quit.
- Using simple hands-on tools: Women need simple tools that are engaging and help them feel empowered to make a change. For example, Striving to Quit-First Breath used a one-page Action Plan to help women set short- and long-term goals, noting specific strategies to reach each goal. These hour-to-hour and day-to-day short-term goals helped participants feel more confident about long-term quit success. Other tools preferred by Striving to Quit-First Breath participants were a *Strategies Checklist* for participants to better comprehend the process it takes to quit and the *101 Ways to get Through a Craving* worksheet.

3. Smoking cessation education for perinatal care providers should include culturally appropriate tools and emphasize how women can be successful quitting smoking despite considerable challenges.

Providers need to address the significance of stressors while focusing on the reality that women can, *and do*, quit often in the face of adversity. Overcoming challenges can build confidence, resiliency, and coping skills that translate to successful quit attempts. It is important to acknowledge the significance of major life stressors for women and that many women can still be successful in quitting.

Many women in the Striving to Quit-First Breath study experienced multiple, seemingly insurmountable challenges. But when provided with consistent support and individualized tools, nearly 40% were able to achieve smoke-free status by six months postpartum. Tools and resources should be culturally appropriate, account for major life stressors (single parenthood, poverty, incarceration, mental health diagnosis), and be tested for receptivity and impact among different populations.

4. Future interventions and research should address women's social environments, including other smokers in women's support networks and the importance of maintaining smoke-free homes.

Social-environmental factors were a major topic of discussion among Striving to Quit-First Breath participants—both in the qualitative sub-study and as documented in the case summaries. Women spoke at length about the negative impact of partners, family members, and friends who smoked. The presence of other smokers in the home had a statistically significant impact on quit rates and has a critical impact on the health and well-being of the infant and other children in the home. Future interventions should adopt approaches that address the social network of perinatal smokers.

In addition to individualized services, tobacco programs and partners should capitalize on women placing a high value on the health and well-being of their babies and other children. The main reason cited by the women in Striving to Quit-First Breath for wanting to quit was "the health of my baby." On the flip side, the main reason reported for relapsing postpartum was that they "care more about baby than themselves." Tobacco programs should use this sentiment to make the case for remaining smoke-free.

Strategies should continue to focus on the health of new babies in the postpartum period with messages and education about the harmful effects of exposure to environmental tobacco smoke.

Appendix A: Striving to Quit-First Breath Study Intervention Overview



Striving To Quit—First Breath Intervention

	PRENATAL	Birth				POST	PARTUM	
	1st 2nd 3rd trimester trimester trimester	r	1 month	2 months	3 months	4 months	5 months	6 months
Who	First Breath Provider			Strivir	ng To Quit Hea	Ith Educators		
Participant Enrollment	Any time during pregnancy * FB Providers distribute Study Invitation							
Counseling	First Breath (Standard procedures) * FB Providers send "Checklist" after each session		hus email text	STC	Postpartum () ()	Counseling Prog	gram	Â
Online Support	www.firstbreathmoms.org	-						
CO Breath Test			S. S					G
Usual Care	\$40 Enrollment	\$	\$40 Home Visit					\$40 Home Visit
Usual Care + Incentives	\$40 Enrollment + \$25 Prenatal Visits (up to 6)		\$40 Home Visit \$40 Pass CO Test \$20 Phone Call \$20 Phone Call	\$25 Home Visit \$20 Phone Call	\$20 Phone Call	\$25 Home Visit	\$20 Phone Call	\$40 Home Visit \$40 Pass CO Test

Appendix B: Striving to Quit-First Breath Case Summary Guide

1.	Striving to Quit ID + RE-ENTER	XXXXXX + XXXXXX (re-enter)
2.	HE Name(s)	Drop Down – Choose all that apply
3.	Did participant complete any study-related activities?	YES – continue on
		NO – end of survey
4.	Actual Delivery Date	XX/XX/XXXX
5.	BC+ Status	Drop down – choose one
		a. Remained in BC+ entire time
		b. Lost coverage but regained on own
		c. Lost coverage but regained with help of HE
		d. Lost coverage, did not regain, and was removed from study
		(prior to 4/1/14)
		e. Lost remained in study (after 4/1/14)
6.	Smoking status at first HV	Choose one
		a. Not smoking (Skip to Q7)
		b. Smoking
7.	If smoking, average #cpd	Enter number – XX
8.	Smoking status trend at subsequent visits?	Choose one
		a. Remained quit
		b. Fully quit and stayed quit
		i. Quit at what month postpartum?
		c. Fully quit but experienced slips
		d. Fully quit but then fully relapsed
		i. Quit at what month postpartum?
		e. Cut down consistently
		i. Final cpd = XX
		f. Variable (no trend)
9.	"Attempts to reach" difficultly/intensity	a. Very difficult ("unreachable" multiple attempts for multiple
		visits required)
		b. Somewhat difficult (several attempts for several visits
		required)
		c. Somewhat easy (a few attempts or a few visits)
		d. Very easy (very few attempts needed)
10.	Number of times physical address changed	Choose one
		a. 0
		b. 1 or 2
		c. 3 or more
11.	Pregnancy Outcome	Choose one
		a. Pregnancy Loss
		 Weeks' gestation at time of loss (Skip to Part 4)
		XX weeks
		unknown
		b. Live Birth
12.	Delivery Type	Choose one
		a. Vaginal
		b. C-Section
		c. Unknown

Part 1 – Intake Form Documentation

13. Infant survival	Choose one
	a. Infant survived
	b. Infant loss
	i. Age lost
	ii. XX month
	iii. unknown
14. Infant custody	Choose one
	a. Full time with participant and/or FOB
	b. Split custody between participant and FOB
	c. Placed outside of home
	d. Changed of study
	e. Unknown
15. Total number live children – including baby	Enter XX or unknown

Part 2 – In-Person Interview Form Documentation

1.	How many in-person interviews were completed?	Choose One
	, F	a. All (5 of 5 for 12m or 4 of 4 for 6m)
		b. Most (4 of 5 for 12m, 3 of 4 for 6m)
		c. About Half (3 of 5 for 12m, 2 of 4 for 6m)
		d. A few (1/2 of 5 for 12m, 1 of 4 for 6m)
		e. None (SKIP to PART 6)
2.	Overall, what was the average length of the home visits?	Choose One
		a. Shorter than average (<20 minutes for HV2. 3 and <30
		minutes for HV1. 5, and 6)
		b. Average (21-45 minutes for HV2. 3 and 31-60 minutes
		for HV1, 4, 6)
		c. Longer than average (>46 minutes for HV2,3 and >61
		mins for HV1.5, and 6)
		d. Varied greatly
3.	Quit Importance at first HV	Choose One
	•	a. Not at all important
		b. Not very important
		c. Somewhat important
		d. Very important
4.	Overall trend/change in importance over course of study	Choose one
	(subsequent visits, i.e. HV2, HV3, HV4, HV5)	a. Increased
		b. Decreased
		c. Stayed same
		d. Variable
		e. N/A – only one HV
5.	Quit confidence at first HV	Choose one
		a. Not at all confident
		b. Not very confident
		c. Somewhat confident
		d. Very confident
6.	Overall trend/change in confidence over course of study	Choose one
		a. Increased
		b. Decreased
		c. Stayed same
		d. Variable
		e. N/A – only one HV

7 Reasons for wanting to guit at first HV	Choose all that apply:
	a My health
	b. Someone clee wante me te
	D. Someone eise wants me to
	c. Wy baby s nealth
	d. Want to be a good role model
	e. Money
	f. Don't want to feel addicted/tied down to cigarettes
	g. Other:
8. New reasons for wanting to guit at subsequent visits	Choose all that apply: (same options as Q7)
9 Barriers to quitting/staving guit at first HV	Choose all that apply: (dame options do dr)
	Withdrawal symptoms (o g irritability)
	a. Withdrawar Symptoms (e.g., initiability)
	b. Everyone around the smokes
	c. Don't want to gain weight
	d. Won't have alone time/breaks
	e. Don't have enough coping skills
	f. Won't be able to handle stress/negative feelings
	g. Other (TEXT BOX)
10. New barriers to guitting/staying guit at subsequent visits	Choose all that apply: (same options as Q12)
11 Barriers no longer relevant or overcome at subsequent visits	Choose all that apply: (same options as 012)
12. Conjug monhanisme at first UV	Choose all that apply: (same options as Q12)
12. Coping mechanisms at linst HV	Choose all that apply.
	a. Keep mouth busy: food, candy, gum
	b. Physical activity
	c. Drink water
	d. Distraction (doing something else)
	e. NRT
	f. Deep breathing
	g. Self-talk
	b Other (TEVT DOV)
13 New coning mechanisms at subsequent visits	Other: (TEXT BOX) Choose all that apply (same options Q15)
13. New coping mechanisms at subsequent visits	Choose all that apply (same options Q15)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply Stress
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana q. Daily routines (finishing meals, waiting for bus)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) i. Smell of cinarettee/other people smeking around me
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choef: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k Other: (TEXT BOX)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV	Choel: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits	Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom
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13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad. anxious)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f Marijuana
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana q. Daily routines (finishing meals, waiting for bus)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Scriptiona g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i.
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party)
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me
13. New coping mechanisms at subsequent visits 14. Triggers at first HV 15. New triggers at subsequent visits 16. Any triggers no longer relevant or overcome at subsequent visits	n. Other: (TEXT BOX) Choose all that apply (same options Q15) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) Choose All That Apply: (same options as Q17) Choose All That Apply a. Stress b. Other substances (TEXT BOX) c. Boredom d. Alcohol e. Negative emotions (feeling sad, anxious) f. Marijuana g. Daily routines (finishing meals, waiting for bus) h. Caffeine/coffee i. Social triggers (talking on phone, at a party) j. Smell of cigarettes/other people smoking around me k. Other: (TEXT BOX) </td

17. How many people can you count on when you need help?	Choose one:
(Average # responded in all surveys)	a. 0
	b. 1-2
	c. 3-5
	d. 6+
18. Supporting to guit smoking/stay guit at first HV	Choose all that apply:
	a. Partner
	b. Adult Family Member
	c. Child
	d. Friend
	e. Provider/Professional
	f No One
	g. Other: (TEXT BOX)
19. Newly identified support to guit smoking/stay guit at	Choose all that apply: (same options as Q21)
subsequent HVs	
20. Attempted to breastfeed?	Chose one:
	a. Yes
	b. No (skip to Q27)
21. How long did she breastfeed?	Enter XX months
22. Why did she stop?	a. Not enough milk
	b. Doctor said I shouldn't because I'm smoking
	c. Not enough support/education
	d. Didn't work with current lifestyle (work schedule, other
	kids)
	e. Lack of interest
	f. Health issues – mother (medications, illness)
	g. Lactation issues
	h. Health issues – baby (preemie, etc.)
	i. Other: (TEXT BOX)
23. Social Service Programs involved in (non-HE referred)	Choose All That Apply
	a. WIC
	b. Home Visiting (B-3, PNCC, Early Head Start)
	c. FoodShare
	d. Job Placement
	e. W2
	f. Other (TEXT BOX)
24. Referrals made by HE	Choose All That Apply
	a. PCP – Reason:
	b. Breastfeeding Help or Support
	c. Pediatrician – Reason
	d. Cribs for Kids
	e. HMO – Reason
	f. Birth to Three
	g. Mental Health Services
	h. Domestic Violence
	i. 1-800-QUIT-NOW (for support system)
	j. Striving to Quit for Non-Pregnant Family Members
	k. AODA
	I. Housing
	m. Job Help
	n. Educational Services
	o. Other (TEXT BOX)

Part 3 – First Breath Experience Survey

1.	How many times did you receive First Breath counseling from your provider at FB site?	Enter Number: XX or Unknown
2.	Participating in First Breath helped me quit smoking/cut down.	Choose One: a. Strongly Agree b. Agree c. Neutral d. Disagree e. Strongly Disagree f. Unknown
3.	I would have quit smoking/cut down even if I hadn't been in First Breath.	Choose One (same options as Q2)
4.	My First Breath provider helped me make a quit smoking/stay quit plan.	Choose One: (same options as Q2)

Part 4 – Quit Plan Documentation

1.	Specific guit smoking strategies identified at all	Choose All That Apply:
	visits	Physical
		a. Exercise. List: (TEXT BOX)
		b. Eat or drink, List: (TEXT BOX)
		c Hands/mind busy – non-digital (crossword coloring crafts
		reading writing) List (TEXT BOX)
		d Digital distraction (Facebook phone games) List (TEXT BOX)
		f Regular gum
		Social
		a Interact with baby
		b Interact with other children
		i Talk to friend or family member (in-person or phone)
		Emotional/Sniritual
		i Deen breathing
		k Solf Talk
		I Prav
		m Meditate
		Cigaratte Manipulation
		n Pationing solf
		n. Rationing – sen
		n Hiding signature
		p. Thung Ogarettes
		 Not purchasing cigatettes r Durchasing singles/"lossies"
		Fulcidality singles/ loosies Smoking partial gigarattes/charting
		s. Smoking partial cigarettee per dev
		L. Sinoking lewel cigarelies per day
		u. Designating nonsmoking areas (nouse, car)
		V. NRI
		W. Chantix
		X. Weilbutin
		y. E-Olgarelles
		z. Manjuana
		aa. Alconol
		DD. Other Substance, IIST. (TEXT BOX)
1		a. Uther (IEXIBUX)

Part 5 – Summary and Case Study

1.	What life issues did this participant face during her	Choose All That Apply:
	participation in Striving to Quit?	a. Mental health diagnosis
		 High levels of daily stress
		c Substance use/abuse
		d Lenalissues
		a. Drier traume
		e. Phot trauma
		r. Death of family member/friend
		g. Illness of family member/friend
		h. Relationship stress
		i. Domestic Violence
		i. Difficulty caring for multiple children
		k Financial difficulty
		L Homelessness
		m. I ransiency (moved multiple times)
		n. Job problems
		o. Social isolation
		p. Other (TEXT BOX)
2.	What were some of the main challenges the participant	Choose all that apply:
	faced in guitting smoking?	a. Highly addicted to nicotine, using cigarettes to prevent
	······································	withdrawal
		 Using cigarettes to cope with negative feelings/moods
		c Using cigarettes to get time to herself/take a break
		d Using cigarettes for social connection
		a. Derther emeker
		t. Social network (triends, tamily) smokers
		g. Unsupportive family/friends
		h. Limited coping strategies
		 Low level of confidence/motivation/urgency
		j. Other (TEXT)
3.	What strengths/attributes did this participant possess?	Choose All That Apply:
		a. Confidence
		b. Motivation
		c Positive Attitude and self-talk
		d Support from partner
		 Support from family/Erionds
		f Eaith
		I. Falul
		g. independent, sen-reliant
		h. Goal-oriented, ambitious
		i. I houghtful/reflective
		j. Educational attainment
		k. Financial security
		I. Success in other areas of life, list (TEXT BOX)
4.	If participant quit or significantly cut down, what were the	TEXT BOX or N/A – Did not quit or cut down
	most significant factors or strategies that led to her	'
	success?	
5	If participant did not quit, what were the most significant	TEXT BOX or N/A – Participant quit
0.	factors that prevented her from succeeding?	
I	autoro and provented nor norn succeeding:	

6.	Were there any nonsmoking outcomes that can be attributed to her involvement with Striving to Quit?	 Choose All That Apply: a. Increased breastfeeding duration b. Engaged in medical care (self or baby) c. Engaged in mental health services d. Engaged in social services, list (TEXT BOX) e. Increased overall confidence f. New coping skills/strategies g. Goal-setting skills h. Improved communication skills i. Improved ability to advocate for self or children j. Educational attainment k. Employment
		k. Employment I. Other: TEXT BOX
7.	Case summary narrative: (History, situation, quit goals and strategies, major challenges, unique strengths, engagement with Striving to Quit, outcome of Striving to Quit)	TEXT BOX (long)

Appendix C: Striving to Quit-First Breath Case Summary Demographics (n = 930)

Age	Number	Percent
18-22	181	20%
23-26	250	28%
27-30	228	25%
31-34	148	16%
35-38	63	7%
39 and older	33	4%
Ethnicity	Number	Percent
Non-Hispanic	740	82%
Hispanic	45	5%
Missing/Prefer not to answer	118	13%
Race	Number	Percent
American Indian/Alaska Native	16	2%
Asian	5	<1%
Black	356	39%
Hawaiian/Pacific Islander	1	<1%
White	415	46%
Don't know	7	1%
Other	43	5%
Missing/Prefer not to answer	60	7%
0,		-
Educational Attainment	Number	Percent
Educational Attainment Less than high school	Number 35	Percent 4%
Educational Attainment Less than high school Some high school	Number 35 196	Percent 4% 22%
Educational Attainment Less than high school Some high school High school or GED	Number 35 196 298	Percent 4% 22% 33%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree	Number 35 196 298 216	Percent 4% 22% 33% 24%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College	Number 35 196 298 216 41	Percent 4% 22% 33% 24% 5%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college	Number 35 196 298 216 41 1	Percent 4% 22% 33% 24% 5% <1%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college Missing/Prefer not to answer	Number 35 196 298 216 41 1 116	Percent 4% 22% 33% 24% 5% <1%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college Missing/Prefer not to answer Employment Status at Baseline	Number 35 196 298 216 41 1 116 Number	Percent 4% 22% 33% 24% 5% <1%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college Missing/Prefer not to answer Employment Status at Baseline Employed	Number 35 196 298 216 41 1 116 Number 276	Percent 4% 22% 33% 24% 5% <1%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college Missing/Prefer not to answer Employment Status at Baseline Employed Not employed	Number 35 196 298 216 41 1 116 Number 276 489	Percent 4% 22% 33% 24% 5% <1%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college Missing/Prefer not to answer Employment Status at Baseline Employed Not employed Blank	Number 35 196 298 216 41 1 116 Number 276 489 138	Percent 4% 22% 33% 24% 5% <1%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college Missing/Prefer not to answer Employment Status at Baseline Employed Not employed Blank Relationship Status	Number 35 196 298 216 41 1 116 Number 276 489 138 Number	Percent 4% 22% 33% 24% 5% <1%
Educational Attainment Less than high school Some high school High school or GED Some college or 2-year degree College Post-college Missing/Prefer not to answer Employment Status at Baseline Employed Not employed Blank Relationship Status Single	Number 35 196 298 216 41 1 116 Number 276 489 138 Number 302	Percent 4% 22% 33% 24% 5% <1%
Educational AttainmentLess than high schoolSome high schoolHigh school or GEDSome college or 2-year degreeCollegePost-collegeMissing/Prefer not to answerEmployment Status at BaselineEmployedNot employedBlankRelationship StatusSingleIn a relationship	Number 35 196 298 216 41 1 116 Number 276 489 138 Number 302 234	Percent 4% 22% 33% 24% 5% <1%
Educational AttainmentLess than high schoolSome high schoolHigh school or GEDSome college or 2-year degreeCollegePost-collegeMissing/Prefer not to answerEmployment Status at BaselineEmployedNot employedBlankRelationship StatusSingleIn a relationshipLiving with partner	Number 35 196 298 216 41 1 116 Number 276 489 138 Number 302 234 145	Percent 4% 22% 33% 24% 5% <1%
Educational AttainmentLess than high schoolSome high schoolHigh school or GEDSome college or 2-year degreeCollegePost-collegeMissing/Prefer not to answerEmployment Status at BaselineEmployedNot employedBlankRelationship StatusSingleIn a relationshipLiving with partnerMarried	Number 35 196 298 216 41 1 116 Number 276 489 138 Number 302 234 145 73	Percent 4% 22% 33% 24% 5% <1%
Educational AttainmentLess than high schoolSome high schoolHigh school or GEDSome college or 2-year degreeCollegePost-collegeMissing/Prefer not to answerEmployment Status at BaselineEmployedNot employedBlankRelationship StatusSingleIn a relationshipLiving with partnerMarriedDivorced	Number 35 196 298 216 41 1 116 Number 276 489 138 Number 302 234 145 73 7	Percent 4% 22% 33% 24% 5% <1%
Educational AttainmentLess than high schoolSome high schoolHigh school or GEDSome college or 2-year degreeCollegePost-collegeMissing/Prefer not to answerEmployment Status at BaselineEmployedNot employedBlankRelationship StatusSingleIn a relationshipLiving with partnerMarriedDivorcedOther	Number 35 196 298 216 41 1 116 Number 276 489 138 Number 302 234 145 73 7 14	Percent 4% 22% 33% 24% 5% <1%

Age Started Smoking	Number	Percent
Younger than 10	42	5%
11-15	340	38%
16-20	431	48%
21-25	75	8%
26 or older	15	2%
Number in Household	Number	Percent
1-2	264	29%
3-4	385	43%
5-6	169	19%
7 or more	80	9%
Missing/Prefer not to answer	27	3%
Number of Smokers in Other Household	Number	Percent
None	437	48%
1 or more	460	51%
Missing/Prefer not to answer	6	< 1%

Appendix D: Striving to Quit-First Breath Case Summary Analysis Results

Case Summary Project (n = 672)

Note: While the total number of case files included was 672, some files did not include data for given topics. Thus, the total n for some tables may be less than 672.

Part 1 – Demographics

A. Age at Enrollment

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences
	Number	Rate	Smoking Amount?	in Quit Rate?
20 years old or younger	15	N/A*	N/A*	N/A*
21-24 years old	224	46%	Yes, smoke less than:	Yes, quit rate higher
			• 25- to 29-year-olds (p =	than:
			0.009)	 25- to 29-year-olds
			• 30- to 34-year-olds (p =	(p = 0.02)
			0.006)	 30- to 34-year-olds
				(p = 0.004)
25-29 years old	223	35%	Yes, smoke more than:	Yes, quit rate lower
			21- to 24-year-olds (p =	than: 21- to 24-year-
			0.009)	olds (p = 0.02)
30-34 years old	139	31%	Yes, smoke more than: 21-	Yes, quit rate lower
			to 24-year-olds (p = 0.006)	than: 21- to 24-year-
				olds (p = 0.004)
35-39 years old	57	40%	No	No
40 years old or older	14	N/A*	N/A*	N/A*

*Subsample < 50 participants

B. Race

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences
	Number	Rate	Smoking Amount?	in Quit Rate?
American Indian/Alaska	16	N/A*	N/A*	N/A*
Native				
Asian	5	N/A*	N/A*	N/A*
Black	296	37%	No	No
Hawaiian/Pacific Islander	1	N/A*	N/A*	N/A*
White	302	41%	No	No

*Subsample < 50 participants

C. Educational Attainment

		<u> </u>	· · · ·	
	Total	Quit	Significant Differences in	Significant Differences
	Number	Rate	Smoking Amount?	in Quit Rate?
Less than a high school diploma	162	41%	No	No
High school diploma or GED	222	42%	No	No
Some college or two-year degree	164	32%	No	No
College degree	35	N/A*	N/A*	N/A*

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

*Subsample < 50 participants

D. Employment Status at Enrollment

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

Employment Status	Total Number	Quit Rate	Significant Differences in Smoking Amount?	Significant Differences in Ouit Rate?
Not employed	204	42%	No	Yes (p = 0.02)
Employed	144	32%		

E. Relationship Status

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences
Relationship Status	Number	Rate	Smoking Amount?	in Quit Rate?
Single	237	39%	No	No
In a relationship	267	40%	No	No
Married	57	32%	No	No
Divorced	7	N/A*	N/A*	N/A*

*Subsample < 50 participants

F. Transiency (Number of Times Physical Address Changed During Postpartum Intervention) Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

Number of Times Physical	Total	Quit	Significant Differences in	Significant Differences
Address Changed	Number	Rate	Smoking Amount?	in Quit Rate?
0	283	39%	No	No
1-2 times	283	39%	No	No
3 or more times	283	37%	No	No

G. Other Smokers in the Household

	Total	Quit	Significant Differences in	Significant Differences
Smokers in Household	Number	Rate	Smoking Amount?	in Quit Rate?
No other smokers in household	193	42%	Yes (p = 0.03)	Yes (p = 0.06)
One or more other smokers in household	214	35%		

Part 2 – Psychosocial Characteristics

Self-Reported Data

A. Major Stressors (Type)

,	Total	0	Significant Differences in	Cignificant Differences
Stuasaan	Total	Quit	Significant Differences in	Significant Differences
Stressor	Number 127			
Ne se stal la selta diagnosis		37%	NO	NO
No mental health diagnosis	545	40%		
	202	270/	No	No
High daily stress	292	37%	NO	NO
No daily stress disclosed	380	41%		a. / a ¥
Substance use	45	44%	N/A*	N/A*
No substance use disclosed	627	39%		
Legal issues	75	31%	Yes (p = 0.004)	No
No legal issues disclosed	597	40%		
Prior trauma	44	32%	N/A*	N/A*
No prior trauma disclosed	628	40%		
Death of family member or friend	106	28%	Yes (p = 0.03)	Yes (p = 0.01)
No death of family member	566	41%	1	
or friend disclosed				
Illness in family	54	37%	No	No
No illness in family	618	39%	1	
disclosed				
Relationship problems	254	40%	No	No
No relationship problems	418	39%		
disclosed				
Domestic violence	56	48%	No	No
No domestic violence	616	38%		
disclosed				
Caring for multiple children	123	29%	Yes (p = 0.008)	Yes (p = 0.01)
No caring for multiple	549	41%		
children disclosed				
Financial insecurity	383	38%	No	No
No financial insecurity	289	40%	1	
disclosed				
Homelessness	92	38%	No	No
No homelessness disclosed	580	39%	1	
Transiency	143	42%	No	No
No transiency disclosed	529	39%	1	
Job problems	266	37%	No	No
No job problems disclosed	406	41%		
Social isolation	59	31%	No	No
No social isolation disclosed	613	40%	1	

	Total	Quit	Significant Differences in	Significant Differences
Stressor	Number	Rate	Smoking Amount?	in Quit Rate?
Participant health issues	124	39%	No	No
No participant health issues	548	39%		
disclosed				
Child health issues	99	42%	No	No
No child health issues	573	39%		
disclosed				
Child Protective Services	41	44%	N/A*	N/A*
involvement				
No Child Protective Services	631	39%		
involvement disclosed				

*Subsample < 50 participants

B. Major Stressors (Number)

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences
Number of Stressors	Number	Rate	Smoking Amount?	in Quit Rate?
0	203	41%	Yes, smoke less than: "5	No
			or more"(p = 0.004)	
1-2	264	40%	Yes, smoke less than: "5	No
			or more"(p =0.02)	
3-4	143	37%	No	No
5 or more	62	31%	Yes, smoke more than:	No
			• "0" (p = 0.004)	
			• "1-2" (p = 0.02)	

C. Number of People in Participant's Support Network

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

Number in Support	Total	Quit	Significant Differences in	Significant Differences
Network	Number	Rate	Smoking Amount?	in Quit Rate?
0	19	N/A*	N/A*	N/A*
1-2	239	35.7%	No	No
3-5	322	42.7%	No	No
6 or more	79	41.8%	No	No

*Subsample < 50 participants

D. Breastfeeding Attempt

	Total	Quit	Significant Differences in	Significant Differences
Breastfeeding Attempt	Number	Rate	Smoking Amount?	in Quit Rate?
No	212	43%	No	No
Yes	448	38%	No	No

Part 3 – Smoking History

A. Age Started Smoking

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences
	Number	Rate	Smoking Amount?	in Quit Rate?
13 years old or younger	77	38%	No	No
14-17 years old	197	40%	No	No
18-21 years old	165	35%	No	No
22 years old or older	34	N/A*	N/A*	N/A*

*Subsample < 50 participants

B. Cigarettes per Day (CPD) During Period When Smoking the Most

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

CPD at Period When	Total	Quit	Significant Differences in	Significant Differences
Smoking Most	Number	Rate	Smoking Amount?	in Quit Rate?
0-10 cpd	269	44%	Yes, smoke less than:	Yes, quit rate higher
			 10-20 cpd (p = 0.009) 	than:
			• 21+ cpd (p = 0.006)	• 11-20 cpd (p = 0.02)
				 21+ cpd (p = 0.08)
11-20 cpd	269	35%	Yes, smoke more than: 0-	Yes, quit rate lower
			10 cpd (p = 0.009)	than: 0-10 cpd (p =
				0.02)
21 or more cpd	120	35%	Yes, smoke more than: 0-	Yes, quit rate lower
			10 cpd (p = 0.006)	than: 0-10 cpd (p =
				0.08)

Part 4 – Smoking at Postpartum Home Visit 1

A. Smoking Status at Home Visit 1 (1 Month Postpartum)

				Significant
	Total	Quit	Significant Differences in	Differences in Quit
Status at Home Visit 1	Number	Rate	Smoking Amount?	Rate?
Not smoking	171	73%	Yes (p < 0.0001)	Yes (p = 0.0001)
Smoking	494	27%		

B. Smoking Amount at Home Visit 1 (One Month Postpartum)

	Total	Quit	Significant Differences in	Significant Differences
CPD at Home Visit 1	Number	Rate	Smoking Amount?	in Quit Rate?
Very light smoker	261	35%	Yes, smoke less than: light	Yes, quit rate higher
(0-5 cpd)			smoker (p = 0.08)	than: light smoker (p =
				0.0006)
Light smoker	125	18%	Yes, smoke more than:	Yes, quit rate lower
(6-10 cpd)			very light smoker (p =	than: very light smoker
			0.08)	(p = 0.0006)
Moderate to heavy smoker	47	13%	N/A*	N/A*
(11 or more cpd)				

Influence on Post-Intervention Outcomes (Six Months Postpartum)

*Subsample < 50 participants

Part 5 – Smoking Attitudes

A. Quit Importance

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences
Quit Importance	Number	Rate	Smoking Amount?	in Quit Rate?
Very	488	42%	Yes (p = 0.009)	Yes (p = 0.005)
Somewhat	155	30%		
Not at all/Not very	22	N/A*	N/A*	N/A*

*Subsample < 50 participants

B. Quit Confidence

	Total	Quit	Significant Differences in	Significant Differences
Confidence	Number	Rate	Smoking Amount?	in Quit Rate?
Very	337	48%	Yes, smoke less than:	Yes, quit rate higher
			 Somewhat (p = 0.005) 	than:
			• Not very (p < 0.0001)	 Somewhat (p =
				0.0002)
				 Not at all/Not very (p
				< 0.0001)
Somewhat	268	33%	Yes, smoke less than: very	Yes, quit rate lower
			(p = 0.005).	than: very (p = 0.0002)
			But smoke more than: not	
			at all/not very (p = 0.01)	
Not at all/Not very	53	21%	Yes, smoke more than:	Yes, quit rate lower
			• Very (p < 0.0001)	than: very (p < 0.0001)
			• Somewhat (p = 0.01)	

C. Reason for Quitting

		3	· · ·	,
	Total	Quit	Significant Differences in	Significant Differences
Reason for Quitting	Number	Rate	Smoking Amount?	in Quit Rate?
Baby's health	481	41%	No	No
Want to be a role model	218	40%	No	No
Mom's health	449	39%	No	No
Money	254	38%	No	No
End addiction/don't want	73	37%	No	No
to be tied down to				
cigarettes				
Other reasons	68	35%	No	No
Feel pressured	71	34%	No	No

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

D. Smoking Triggers

	Total	Quit	Significant Differences in	Significant Differences
Smoking Triggers	Number	Rate	Smoking Amount?	in Quit Rate?
Social triggers	110	44%	Yes, smoke less than:	Yes, quit rate higher
			• Boredom (p = 0.01)	than:
			• Caffeine (p = 0.0004)	 Boredom (p = 0.02)
				 Caffeine (p = 0.0009)
Smelling/Seeing cigarettes	246	39%	Yes, smoke less than:	Yes, quit rate higher
			caffeine ($p = 0.001$)	than: caffeine (p =
				0.002)
Alcohol	109	38%	Yes, smoke less than:	Yes, quit rate higher
			caffeine ($p = 0.004$)	than: caffeine (p =
				0.001)
Stress	529	37%	Yes, smoke less than:	Yes, quit rate higher
			caffeine ($p = 0.002$)	than: caffeine (p =
				0.004)
Negative emotions	232	34%	Yes, smoke less than:	Yes, quit rate higher
			caffeine (p = 0.01)	than: caffeine (p = 0.03)
Daily routines	293	32%	Yes, smoke less than:	Yes, quit rate higher
			caffeine (p = 0.02)	than: caffeine (p = 0.04)
Boredom	147	30%	Yes, smoke more than:	Yes, quit rate lower
			social triggers (p = 0.01)	than: social triggers (p =
				0.02)

Smoking Triggers	Total Number	Quit Rate	Significant Differences in Smoking Amount?	Significant Differences in Quit Rate?
Caffeine/Coffee	75	20%	 Yes, smoke more than: Social triggers (p = 0.0004) Alcohol (p = 0.004) Negative emotions (p = 0.01) Daily routines (p = 0.02) Smelling/seeing cigarettes (p = 0.001) 	 Yes, quit rate lower than: Social triggers (p = 0.0009) Smelling/seeing cigarettes (p = 0.002) Alcohol (p = 0.01) Stress (p = 0.004) Negative emotions (p = 0.03) Daily routines (p = 0.04)

E. Barriers to Quitting

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

Barriers to Quitting	Total Number	Quit Rate	Significant Differences in Smoking Amount?	Significant Differences in Quit Rate?
Smoking network/Being around other smokers	194	40%	Yes, smoke less than: withdrawal (p = 0.02)	Yes, quit rate higher than: withdrawal (p = 0.02)
Loss of alone time	93	37%	No	
Few coping skills	154	34%	No	
Few stress management skills	315	33%	No	
Weight gain	41	32%	N/A*	N/A*
Withdraw symptoms	138	28%	Yes, smoke more than: smoking network (p = 0.02)	Yes, quit rate lower than: smoking network (p = 0.02)

*Subsample < 50 participants

Part 6 – Quitting Behaviors

A. Coping Skills (Type)

	Total	Quit	Significant Differences in	Significant Differences
Type of Coping Skills	Number	Rate	Smoking Amount?	in Quit Rate?
Breathing techniques	52	54%	No	Yes, quit rate higher
				than: physical activity (p
				= 0.03)
Self-talk	104	46%	No	No
Distraction	397	41%	No	No
Oral fixation techniques	302	40%	No	No
Drink water	71	38%	No	No
Physical activity	147	37%	No	No
Nicotine replacement	39	13%	N/A*	N/A*

	Total	Quit	Significant Differences in	Significant Differences
Type of Coping Skills	Number	Rate	Smoking Amount?	in Quit Rate?
therapy				

*Subsample < 50 participants

B. Coping Skills (Number)

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences in
Number of Coping Skills	Number	Rate	Smoking Amount?	Quit Rate?
3 or more	159	41%	No	No
1-2	194	44%	No	Yes, quit rate higher than:
				"0" (p = 0.04)
0	319	35%	No	Yes, quit rate lower than:
				"1-2" (p = 0.04)

C. Coping Skills (Newly Acquired)

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

New Coping Skills Acquired	Total Number	Quit Rate	Significant Differences in Smoking Amount?	Significant Differences in Quit Rate?
0	109	32%	No	Yes (p = 0.02)
1 or more	351	47%		

D. Quitting Challenges

	Total	Quit	Significant Differences in	Significant Differences in
Challenges	Number	Rate	Smoking Amount?	Quit Rate?
Social smoker	94	51%	Yes, smoke less than:	Yes, higher quit rate than:
			 Using cigarettes to 	 Using cigarettes to cope
			cope (p = 0.002)	(p = 0.001)
			 Using cigarettes for 	 Limited coping skills (p =
			alone time (p < 0.0001)	0.0004)
			 Partner smokes (p = 	 Low confidence (p =
			0.03)	0.002)
			 Low support (p = 	 Using cigarettes for
			0.006)	alone time (p = 0.0006)
			 Limited coping skills (p 	 Highly addicted (p <
			= 0.0002)	0.0001)
			 Low confidence (p < 	
			0.0001)	
			 Highly addicted (p < 	
			0.0001)	

Challenges	Total Number	Quit Bate	Significant Differences in Smoking Amount?	Significant Differences in Ouit Rate?
Friends/family smoke	224	44%	 Yes, smoke less than: Using cigarettes to cope (p = 0.005) Using cigarettes for alone time (p = 0.001) Limited coping skills (p = 0.005) Low confidence (p = 0.005) Highly addicted (p < 0.0001) 	 Yes, higher quit rate than: Highly addicted (p < 0.0001) Using cigarettes to cope (p = 0.007) Using cigarettes for alone time (p = 0.003) Limit coping skills (p = 0.002) Low confidence (p = 0.01)
Partner smokes	153	42%	 Yes, smoke less than: Addicted (p < 0.0001) Using cigarettes for alone time (p = 0.03) Limited coping skills (p = 0.009) Low confidence (p = 0.007) But smoke more than: social smoker (p = 0.03) 	 Yes, higher quit rate than: Highly addicted (p = 0.0001) Using cigarettes for alone time (p = 0.02) Limited coping skills (p = 0.01) Low confidence (p = 0.03)
Low support to quit	49	37%	Yes, smoke more than: social smoker (p = 0.006)	Yes, higher quit rate than: highly addicted (p = 0.01)
Using cigarettes to cope	484	34%	Yes, smoke less than: highly addicted (p = 0.0005) But smoke more than: • Social smoker (p = 0.0002) • Friends/family smoke (p = 0.005)	 Yes, higher quit rate than: highly addicted (p = 0.02) But lower quit rate than: Social smoker (p = 0.002) Friends/family smoke (p = 0.005)
Using cigarettes for alone time/breaks	219	31%	 Yes, smoke less than: highly addicted (p = 0.01) But smoke more than: Social smoker (p < 0.0001) Partner smokes (p = 0.03) Friends/family smoke (p = 0.001) 	 Yes, higher quit rate than: highly addicted (p = 0.02) But lower quit rate than: Social Smoker (p < 0.0001) Partner Smokes (p = 0.03) Friends/family smoke (p = 0.001)

	Total	Quit	Significant Differences in	Significant Differences in
Challenges	Number	Rate	Smoking Amount?	Quit Rate?
Limited coping skills	170	29%	 Yes, smoke more than: Social smoker (p = 0.0002) Partner smokes (p = 0.009) Friends/family smoke (p = 0.0003) 	 Yes, higher quit rate than: highly addicted (p = 0.05) But lower quit rate than: Social smoker (p = 0.0004) Partner smokes (p = 0.01) Friends/family smoke (p = 0.002)
Low confidence	79	28%	 Yes, smoke more than: Social smoker (p < 0.0001) Partner smokes (p = 0.007) Friends/family smoke (p = 0.0005) 	 Yes, lower quit rate than: Social smoker (p = 0.002) Partner smokes (p = 0.03) Friends/family smoke (p = 0.01)
Highly addicted to nicotine	116	19%	 Yes, smoke more than: Using cigarettes to cope (p = 0.0005) Using cigarettes for alone time/breaks (p = 0.01) Social smoker (p < 0.0001) Partner smokes (p < 0.0001) Friends/family smoke (p < 0.0001) 	 Yes, lower quit rate than: Using cigarettes to cope (p = 0.002) Using cigarettes for alone time/breaks (p = 0.02) Social smoker (p < 0.0001) Partner smokes (p = 0.0001) Family/friends smoke (p < .0001) Low support to quit (p = 0.01) Limited coping skills (p = 0.05)

E. Quit Smoking Strategies

	Total	Quit	Significant Differences in	Significant Differences in
Strategies	Number	Rate	Smoking Amount?	Quit Rate?
Cold turkey	82	63%	Yes, smoke less than:	Yes, quit rate higher than:
			• Cut down (p < 0.0001)	• Cut down (p < 0.0001)
			 Quit-smoking 	 Quit-smoking
			medications (p <	medications (p <
			0.0001)	0.0001)

	Total	Quit	Significant Differences in	Significant Differences in
Strategies	Number	Rate	Smoking Amount?	Quit Rate?
Cut down	283	32%	Yes, smoke less than:	Yes, quit rate higher than:
			quit-smoking	quit-smoking medications
			medications ($p = 0.02$)	(p = 0.02)
			But smoke more than:	But quit rate lower than:
			cold turkey (p < 0.0001)	cold turkey (p < 0.0001)
Quit-smoking medications	110	20%	Yes, smoke more than:	Yes, quit rate lower than:
			• Cold turkey (p <	• Cold turkey (p < 0.0001)
			0.0001)	• Cut down (p = 0.02)
			• Cut down (p = 0.02)	
E-cigarettes	45	N/A*	N/A*	N/A*

*Subsample < 50 participants

Part 7 – Engagement in Services

A. Number of Prenatal First Breath Counseling Sessions

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

		0	· · · · · · · · · · · · · · · · · · ·	
Number of First Breath	Total	Quit	Significant Differences in	Significant Differences in
Sessions	Number	Rate	Smoking Amount?	Quit Rate?
3-4 visits	116	51%	Yes, smoke less than: 5-6	Yes, quit rate higher than:
			visits (p = 0.02)	 No visits (p = 0.04)
				 5-6 visits (p = 0.03)
1-2 visits	80	40%	No	No
5-6 visits	64	34%	Yes, smoke more than:	Yes, quit rate lower than:
			3-4 visits (p = 0.02)	3-4 visits (p = 0.03)
No visits	50	N/A*	N/A*	N/A*
7-10 visits	46	N/A*	N/A*	N/A*
11 or more	20	N/A*	N/A*	N/A*

*Subsample < 50 participants

B. Number of Postpartum Visits Completed

Number of Visits	Total	Quit	Significant Differences in	Significant Differences in
Completed	Number	Rate	Smoking Amount?	Quit Rate?
All or most visits	539	42%	Yes (p = 0.01)	Yes (p = 0.001)
About half or a few visits	125	26%		

C. Length of Postpartum Visits

	Total	Quit	Significant Differences in	Significant Differences in
Length of Visits	Number	Rate	Smoking Amount?	Quit Rate?
Longer than average	516	48%	No	Yes (p = 0.01)
Average	129	36%		
Shorted than average	14	N/A*	N/A*	N/A*

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

*Subsample < 50 participants

D. Striving to Quit Health Educator

Influence on Post-Intervention Smoking Outcomes (Six Months Postpartum)

	Total	Quit	Significant Differences in	Significant Differences in
Health Educator	Number	Rate	Smoking Amount?	Quit Rate?
Health educator "A"	64	52%	Yes, smoke less than:	Yes, higher quit rates than
			health educator "l" (p =	 Health educator "H"
			0.03)	(p = 0.01)
				 Health educator "I"
				(p = 0.02)
Health educator "B"	55	49%	Yes, smoke less than:	Yes, higher quit rates
			health educator "l" (p =	than: health educator "I"
			0.02)	(p = 0.03)
Health educator "C"	42	45%	N/A*	N/A*
Health educator "D"	117	42%	No	No
Health educator "E"	76	41%	No	No
Health educator "F"	37	37%	N/A*	N/A*
Health educator "G"	47	34%	N/A*	N/A*
Health educator "H"	111	34%	No	Yes, lower quit rates than:
				health educator "A" (p =
				0.02)
Health educator "I"	87	31%	Yes, smoke more than:	Yes, lower quit rates than:
			• Health educator "A" (p	 Health educator "A"
			= 0.03)	(p = 0.01)
			• Health educator "B" (p	Health educator "B"
			= 0.02)	(p = 0.03)
Health educator "J"	49	26%	N/A*	N/A*

*Subsample < 50 participants

E. Participant Engagement (As Reported by Health Educator)

_	Total	Quit	Significant Differences in	Significant Differences in
Engagement	Number	Rate	Smoking Amount?	Quit Rate?
High	150	43%	Yes (p = 0.006)	Yes (p = 0.0005)
Low	55	20%		

F. "Difficulty to Reach" (As Reported by Health Educator)

	Total	Quit	Significant Differences in	Significant Differences in
Difficulty to Reach	Number	Rate	Smoking Amount?	Quit Rate?
Very easy	151	55%	Yes, smoke less than:	Yes, higher quit rates
			very difficult (p = 0.01)	than:
				 Somewhat easy (p =
				0.01)
				• Somewhat difficult (p =
				0.0001)
				 Very difficult (p =
				0.0005)
Somewhat easy	218	38%	No	Yes, lower quit rates than:
				very easy (p = 0.01)
Somewhat difficult	139	32%	No	Yes, lower quit rates than:
				very easy (p = 0.0001)
Very difficult	93	32%	Yes, smoke more than:	Yes, lower quit rates than:
			very easy ($p = 0.01$)	very easy ($p = 0.0005$)

Appendix E: Striving to Quit-First Breath Focus Group and Interview Facilitator Guide

Brief Introduction – Wisconsin Women's Health Foundation ORGANIZER <1 minute

- 1. Time to get started.
- 2. Thank you for being here.
- 3. Housekeeping items: bathrooms, help yourself to food or water.
- 4. Silence phones.

Introduction and Consent – FACILITATOR 10 minutes AM Session: 11:30 – 11:40 AM PM Session: 5:30 – 5:40 PM

- 1. Name and role.
- 2. Participant introductions and short icebreaker (depends on size of group).
- 3. Intro. Now that you have completed the First Breath program and Striving to Quit study, we want to hear what you think about the program. We also want to know your thoughts about tobacco use during the perinatal period in general. We ask for your complete honesty and would like to hear both positive and negative comments.
- 4. **Consent.** Thank you for agreeing to discuss your experience with the Striving to Quit study. Before we begin with the interview, I would like to review the risks and benefits of participation and verbally receive your informed consent to participate. You are under **no obligation** to participate in this interview. The information from these interviews will help us learn more about the challenges of guitting smoking among pregnant and postpartum women and how we can improve the First Breath program. The health information about you that will be part of the discussion is your first name, your use of tobacco, and how you felt about the services you received from the First Breath program. Your health information will be used only by study staff at the Wisconsin Women's Health Foundation. If you provide your consent, you are giving your permission for this health information to be used by Wisconsin Women's Health Foundation. You may withdraw your permission at any time by contacting Wisconsin Women's Health Foundation. If you'd like, we will give you a contact card today with the phone number to call. The risks of participating in this study are minimal. The interview will be audio taped. All of the information collected will be confidential and not tied to participant names in any way. As a participant, you are required to keep the discussion confidential. You have the right to choose not to participate in this interview or not to answer any question that you prefer not to answer. The interview will take about 90 minutes. If you do not wish to do the interview, you will not be treated any differently by research staff. You can stop at any time. Are you willing to continue with the interview?
- 5. Any other questions before we get started?

Part 1 – Tobacco Use in the Perinatal Population – FACILITATOR 20 minutes AM Session: 11:40 AM – 12:00 PM PM Session: 5:40 – 6:00 PM

We're interested in tobacco use among pregnant and postpartum women. By "postpartum" we mean the year after childbirth (so from the time baby is born until baby is 1 year old.)

- 1. What are some reasons why pregnant women smoke?
- 2. What do they get out of smoking?
 - a. Good things?
 - b. Bad things?
- 3. Why do you think it is so hard for pregnant women to quit smoking?
- 4. Research shows that many women (70-85%) who quit smoking during pregnancy, relapse, or go back to smoking after the baby is born. Why do you think so many women relapse after having a baby?

Part 2 – Services – FACILITATOR 35 minutes AM Session: 12:00 – 12:35 PM PM Session: 6:00 – 6:35 PM

Now let's talk about your experience in the First Breath and Striving to Quit programs. As a refresher:

- First Breath was the program when you were PREGNANT. It was part of normal prenatal care (usually
 at your clinic or WIC). Your provider talked to you about smoking and gave you workbooks and small
 gifts.
- Striving to Quit was the program/study you were in AFTER you delivered. A health educator came to your house, did carbon monoxide (CO) tests with you, and gave you gift cards.

Remember we are looking for all feedback—both positive and negative.

- 1. What do you remember about your experience with your First Breath **prenatal** care provider (not Striving to Quit, not health educator)?
 - a. How did your provider bring up the topic?
 - b. What do you remember about the counseling you received?
 - c. What were some of the most helpful parts of the program?
 - d. Did you like the small gifts? (Explain or show gifts.) Would you prefer something different?
 - e. Did you receive and/or read any of these booklets? (Show booklets.) Would you prefer something different?
 - f. Anything you didn't like about the program?
- 2. Overall, how would you rate your experience with the First Breath program (not Striving to Quit)? Four options:
 - a. Very positive
 - b. In the middle/just OK
 - c. Very negative
 - d. Don't remember
 - 1. What are the main reasons you rated it that way?
 - 2. For those who said just OK or very negative, what would have made it better?

- 3. What do you remember about your experience with the Striving to Quit program [refresher on Striving to Quit services: home visits, CO tests, gift cards]?
 - a. What do you remember about the counseling you received?
 - b. What were some of the most helpful parts of the program?
 - c. Anything you didn't like about the program?
- 4. Overall, how would you rate your experience with the Striving to Quit program/study? Four options:
 - a. Very positive
 - b. In the middle/just OK
 - c. Very negative
 - d. Don't remember
 - 1. What are the main reasons you rated it that way?
 - 2. For those who said just OK or very negative, what would have made it better?
- 5. What did you think about receiving gift cards for participating in Striving to Quit?
 - a. Did the gift cards motivate you to want to quit?
 - b. What dollar amount would be ideal and fair?
 - c. Did you like receiving gift cards, or would you have preferred something different?
 - d. What did you spend your gift cards on?
- 6. What did you think about taking the CO breath tests?
 - a. Was this helpful to you?
 - b. Did taking the CO tests motivate you to want to quit?
- 7. What were some of the main things you remember your health educator talking with you about?
 - a. Did your health educator help you make an action plan? Was this helpful?
 - b. Did your health educator help you come up with strategies to quit smoking? Was this helpful?
- 8. Did your First Breath or Striving to Quit health educator talk to you about any of these topics?
 - a. Secondhand and thirdhand smoke?
 - b. Protecting your baby from secondhand and thirdhand smoke?
 - c. Breastfeeding and smoking?
 - d. Sudden infant death syndrome (SIDS) and smoking?
 - e. Mental health and smoking?
 - f. Stress management and smoking?
 - g. Which topics were most important to you?

Part 3 – Future Programming – FACILITATOR 20 minutes

AM Session: 12:35 – 12:55 PM PM Session: 6:35 – 6:55 PM

- 1. What influence, if any, did your partner, family, or friends have on your quit attempts?
 - a. In what way did they support you?
 - b. Did anything they do NOT help you or make your quit attempt harder?
 - c. What could your family have done or said differently to support you?
- 2. Imagine you could design a brand new program to help pregnant and postpartum women quit smoking.
 - a. What would you do?
 - b. What should the main messages be?
 - c. How would you get the word out about the program?

- 3. Imagine you wanted to help the partners and families of pregnant women and new moms quit smoking.
 - a. What would you do?
 - b. What should the main messages be?
 - c. How would you get the work out about the program?
- 4. What would make it easier for pregnant and new moms to quit?

CLOSING – FACILITATOR

5 minutes AM Session: 12:55 – 1:00 PM PM Session: 6:55 – 7:00 PM

- 1. That concludes our session today.
- 2. Thank you so much for all of your input and honesty.

CLOSING – Wisconsin Women's Health Foundation ORGANIZER <1 minute

A few things to know before we leave today:

- 1. The Wisconsin Women's Health Foundation is currently recruiting for a Participant Advisory Group (pass out half sheet)—please fill this out if you have any interest in continuing to provide guidance to our programs and help other women struggling to quit smoking. You can turn this in at the registration table on your way out.
- 2. Please see HOST at the registration table to pick up your gift cards.

Thanks again!

Age	Number	Percent
18-22 years old	27	19%
23-27 years old	44	31%
28-32 years old	47	33%
33-37 years old	19	13%
38 years old or older	6	4%
Race	Number	Percent
American Indian	3	2%
Black	52	36%
White	73	51%
Other	7	5%
Unknown/Prefer not to answer	8	6%
Educational Attainment	Number	Percent
Less than high school diploma	24	17%
High school or GED	53	37%
Some college or 2-yr degree	39	27%
College degree	14	10%
Unknown/Prefer not to answer	13	9%
Employment Status at Baseline	Number	Percent
Employed	41	29%
Unemployed	82	57%
Unknown/Prefer not to answer	20	14%
Relationship Status	Number	Percent
Single	59	41%
In a relationship/Living together	51	35%
Married	16	11%
Divorced	1	0%
Unknown/Prefer not to answer	16	11%
Number of Cigarettes per Day (cpd)		
During Period When Smoking the Most	Number	Percent
Half pack or less (1-10 cpd)	54	38%
Half to a full pack (11-20 cpd)	63	44%
More than a pack (21-50 cpd)	25	17%
Unknown/Prefer not to answer	2	1%
Household Smoking at Baseline	Number	Percent
No other smokers in home	74	52%
1 or more other smokers in home	51	48%
Post-Intervention Smoking Status		
(Six Months Postpartum)	Number	Percent
Smoking (expired-air CO test result \geq 7	67	47%
ppm)		
Nonsmoking (expired-air CO test result 0-6	72	50%
ppm)		
Expired-air CO test not conducted	4	3%

Appendix F: Qualitative Sub-Study Participant Demographics (n = 143)
Appendix G: Striving to Quit-First Breath Focus Group and Interview Results

Part 1 – Attitudes to Perinatal Smoking

A. Prenatal Smoking Reasons and Root Causes – 459 Responses

		Number	Percent	Rank
1.	Stress	138	30%	1
	• Stress – 107			
	 Unplanned or unwanted pregnancy – 14 			
	 Issues with father of baby – 13 			
	• Kids – 3			
	 Money problems – 1 			
2.	Habit from pre-pregnancy, part of life	94	20%	2
3.	Addiction and avoiding withdrawal	52	11%	3
4.	Tie	32	7%	4 tie
	A. Mood			
	• Boredom – 3			
	• Anxiety – 5			
	 Depression –7 			
	• Fear - 5			
	 Feeling overwhelmed – 9 			
	• Anger – 3			
	B. Environmental Cues			
	 Smokers in life/home – 13 			
	 Seeing/smelling cigarettes – 10 			
	 Social smoking – 9 			
5.	Hard to quit (reason not specified)	31	7%	5
6.	Being pregnant: body changes/hormones/mood swings	29	6%	6
Ot	her reasons:	N/A	N/A	N/A
•	Lack of support – 16			
•	Don't want to quit/likes smoking – 11			
•	Lack of "mind control" or willpower – 11			
•	Oral fixation – 4			
•	Selfishness/stubbornness – 3			
•	Generational smoking (parents smoked) – 3			
•	Doctor told me not to guit – 3			

B. Prenatal Smoking Positives/Pros – 158 Responses

		Number	Percent	Rank
1.	Improved mood/state of mind	88	56%	1
	 Calming, soothing, eases mind – 71 			
	 Distracts mind from life/trauma/"bad stuff" – 7 			
	 Anxiety management – 5 			
	 Improved mental health – 3 			
	 Anger management – 2 			
2.	Coping mechanism for stress	41	26%	2
3.	Alone time/freedom	16	10%	3
4.	Physical benefits	11	7%	4
	• Digestive help – 5			
	• Pain management – 6			
5.	Social activity/something to do	8	5%	5
6.	Smoking is a "friend"	2	1%	6

C. Prenatal Smoking Negatives/Cons – 273 Responses

		Number	Percent	Rank
1.	Baby health problems	106	39%	1
	• General – 48			
	 Low birth weight – 15 			
	 Prematurity/growth development – 14 			
	 Breathing problems (asthma, RSV) – 12 			
	• Birth defects – 7			
	 Risk of complications – 3 			
	• Heart – 3			
	 Nicotine withdrawal – 2 			
	• Ear infections – 1			
	• Death – 1			
2.	Mom health problems	100	36%	2
	• General – 40			
	 Respiratory – 24 			
	• Cancer – 11			
	• Oral – 7			
	• Out of shape – 6			
	 Ages body/skin – 5 			
	• Heart – 2			
	• Tired – 2			
	• Death – 2			
	• Dizzy – 1			
3.	Tie	17	6%	3 tie
	A. Smell			
	B. Mood/mental health			
	 Feel guilt or shame – 9 			
	 Increases anxiety/depression – 8 			
4.	Money	14	5%	4

5.	Kids see mom smoking	8	3%	5
6.	Decreased time/bonding with infant	4	1%	6
Ot	her Reasons:	N/A	N/A	N/A
•	Kids grow up to be smokers – 3			
٠	Judgment – 2			
•	Ashes/messy – 2			

D. Postpartum Relapse Reasons and Root Causes – 334 Responses

		Number	Percent	Rank
1.	Manages stress/relaxes/calming/eases mind	64	19%	1
2.	Quit for baby/no longer pregnant/care more about baby	58	17%	2
3.	Don't feel guilty anymore/socially acceptable	42	13%	3
4.	Mental health/mood	37	11%	4
	 Feeling overwhelmed – 13 			
	 Postpartum depression – 12 			
	 Irritation/anger – 7 			
	• Anxiety – 3			
	• Distraction – 2			
	• Boredom – 2			
5.	Postpartum issues	31	9%	5
	• Caring for newborn – 26			
	• Lack of sleep – 5			
6.	Triggers	29	9%	6
	 Seeing/Smelling it – 12 			
	 Being around other smokers – 11 			
	• Alcohol – 6			
Ot	her Reasons:	N/A	N/A	N/A
•	Old habit/routine – 14			
•	Cravings/urges return – 14			
•	Need alone time/break – 13			
•	Lack of support – 10			
•	Issues with father of the baby –7			
•	Easy access – 7			
•	Reward – 5			
•	Not/Stop breastfeeding – 2			
•	Pain management – 1			

E. Influence of Social Networks

Influence of Social Support System on Quit Attempt – 87 Responses

	Number	Percent	Rank
Made it harder to quit	53	61%	1
Made it easier to quit	34	39%	2

		Number	Percent	Rank
1.	Reason not specified	13	25%	1
2.	Smoked in front of me, in my home, or in my car	10	19%	2
3.	Didn't care about my quit attempt	6	11%	3
4.	Judged/shamed/nagged about my smoking	5	9%	4
5.	Tie	4	8%	5 tie
	A. Negative/doubted my ability to quit			
	B. Don't know how to support			
6.	Tie	3	6%	6 tie
	A. Gave me cigarettes			
	B. Disrespectful			
	C. Added to my stress level			
Ot	her:	N/A	N/A	N/A
•	Didn't follow through on promises – 1			
•	Asked me for cigarettes – 1			

Social Support System Made It Harder – 53 Responses

Social Support System Made it Easier – 34 Responses

		Number	Percent	Rank
1.	They were supportive	27	79%	1
2.	I avoided them	4	12%	2
3.	Other	1	3%	3
	Wasn't around them			
	We quit together			
	 Encouraged and motivated me verbally 			

What could they have done differently? -111 Responses

		Number	Percent	Rank
1.	Nothing	41	37%	1
2.	Not smoking around me	13	12%	2
3.	Try to quit with me	10	9%	3
4.	Be more motivating	8	7%	4
5.	Be more encouraging	7	6%	5
6.	Don't add to my stress level	5	5%	6
Ot	her	N/A	N/A	N/A
٠	Express interest/ask questions – 3			
٠	Be more positive/less negative – 3			
٠	Don't smoke in the house – 2			
٠	Support my choice to quit – 2			
٠	Don't ask me to smoke –1			
٠	Remind me not to smoke –2			
٠	Have supportive actions – 2			
٠	Give me advice or education – 2			
•	Don't nag me – 2			
•	Give me a break – 2			
•	Help reduce stress/help – 2			

		Number	Percent	Rank
٠	Don't announce when you smoke – 1			
•	Keep me active – 1			
•	Respect me – 1			
•	Threaten me – 1			
•	Distract me – 1			
•	Use a different approach – 1			

Part 2 – Brief Intervention (First Breath Services)

A. First Breath Enrollment Method – 91 Responses

		Number	Percent	Rank
1.	Provider asked	57	63%	1
2.	Participant initiated	14	15%	2
3.	Don't remember	13	14%	3
4.	Mutual discussion	7	8%	4

B. First Breath Program Experience – 284 Total Responses

Positive First Breath Program Experience – 107 Responses

		Number	Percent	Rank
1.	Helpful: Reason not specified	56	52%	1
2.	Like the support	30	28%	2
3.	Lead to other programs (texting/Striving to Quit)	8	7%	3
4.	Accountability	6	6%	4
5.	Easy/convenient	4	4%	5
6.	Helpful: Brief intervention	3	3%	6

Neutral First Breath Experience – 107 Responses

		Number	Percent	Rank
1.	Received information	57	53%	1
2.	Received resources	24	22%	2
3.	OK/fine experience	18	17%	3
4.	Received incentives	8	7%	4

Negative First Breath Experience – 70 Responses

		Number	Percent	Rank
1.	Lack of contact/follow-up/staff turnover	21	30%	1
2.	Fewer details/more general than Striving to Quit	11	16%	2
3.	Lack of depth compared to Striving to Quit home visits	9	13%	3
4.	Lack of support	6	9%	4
5.	Tie	5	7%	5 tie
	A. Inconsistency			
	B. Disorganized			

		Number	Percent	Rank
6.	Tie	3	4%	6 tie
	A. Gap in services/between sessions			
	B. Lack of information			
	C. Unsure of program goal			
Ot	her reasons:	N/A	N/A	N/A
•	Lack of availability (program) – 2			
•	Already knew information – 1			
٠	Lack of holding woman accountable for quitting – 1			

C. First Breath Provider Experiences – 129 Responses

	Number	Percent	Rank
Positive provider experience	111	86%	1
Negative provider experience	18	14%	2

Positive First Breath Provider Experience – 111 Responses

		Number	Percent	Rank
1.	Someone to talk to	29	26%	1
2.	Nonjudgmental/didn't shame	18	16%	2
3.	Knowledgeable/experienced	17	15%	3
4.	Positive/uplifting	12	11%	4
5.	Tie	10	9%	5 tie
	A. Personal connection			
	B. Compassionate			
6.	Accessible/available	8	7%	6
Ot	her: Listened to me – 7	N/A	N/A	N/A

Negative First Breath Provider Experience – 18 Responses

		Number	Percent	Rank
1.	Lack of connection	7	39%	1
2.	Lack of engagement	5	28%	2
3.	Tie	2	11%	3 tie
	A. Lack of provider availability			
	B. Lack of knowledge			
	C. Lack of smoking experience/relatability			

D. First Breath-Related Knowledge, Attitude, Behavior Change – 63 Responses

		Number	Percent	Rank
1.	New skill: Coping techniques	17	27%	1
2.	Increased knowledge/new information	14	22%	2
3.	Increased awareness of risks	12	19%	3
4.	Increased desire to quit	9	14%	4
5.	New skill: Goal setting	5	8%	5
6.	Increased focus on baby	4	6%	6
Ot	ner: New skill: Trigger identification	2	N/A	N/A

E. Overall Rating of First Breath – 142 responses

Response	Number	Percent	Rank
Very positive	77	54%	1
In the middle/just OK	47	33%	2
Very negative	11	8%	3
Don't remember	7	5%	4

Part 3 – Reaction to Intensive Postpartum Striving to Quit Intervention

A. Striving to Quit Health Educator Experience – 324 Responses

	Number	Percent	Rank
Positive health educator experience	308	95%	1
Negative health educator experience	16	5%	2

Positive Health Educator Experience – 308 Responses

		Number	Percent	Rank
1.	Positive/uplifting/encouraging	48	16%	1
2.	Helpful	39	13%	2
3.	Supportive	38	12%	3
4.	Accessibility/availability	34	11%	4
5.	Listened	29	9%	5
6.	Connection/bond/comfort	27	9%	6
Ot	her:	N/A	N/A	N/A
٠	Motivator – 22			
٠	Positive reaction (general/reason not specified) – 16			
٠	Understanding/compassionate –13			
٠	Good counselor/coach – 11			
٠	Accountability – 9			
•	Nonjudgmental – 9			
•	Respectful – 7			
•	Interacted with baby/kids –6			

Negative Health Educator Experience – 16 Responses

		Number	Percent	Rank
1.	Lack of availability	6	38%	1
2.	Tie	3	19%	2 tie
	A. No connection			
	B. Knew her personally			
	C. Lack of flexibility			
3.	Felt judged	1	5%	3

B. Striving to Quit Program Experience – 333 Responses

	Number	Percent	Rank
Positive health educator experience	302	91%	1
Negative health educator experience	31	9%	2

		Number	Percent	Rank
1.	Informative/educational	59	20%	1
2.	One-on-one/meetings/home visits	49	16%	2
3.	Flexibility (time/location)/convenience/availability	41	14%	3
4.	Tie	30	10%	4 tie
	A. Materials/resources			
	B. Goal setting			
5.	Motivating/challenging	29	10%	5
6.	Coping skills/strategies	25	8%	6
Ot	her:	N/A	N/A	N/A
•	Explored triggers – 10			
•	Reinforcement – 6			
•	Something to look forward to – 5			
•	General/loved/liked – 5			
•	Explored support system – 2			
•	Referrals for nonsmoking issues – 4			
•	Consistency – 4			
•	Successful – 1			
•	Organized – 1			

Positive Striving to Quit Program Experience – 302 Responses

Negative Striving to Quit Experience – 31 Responses

		Number	Percent	Rank
1.	Deadlines/windows	6	19%	1
2.	Gap between visits	5	16%	2
3.	Tie	3	10%	3 tie
	A. Unresolved emotional issues			
	B. Back to smoking when it ended			
	C. Didn't want to quit			
4.	Tie	2	6%	4 tie
	A. Too many surveys/surveys too long			
	B. Didn't take it seriously			
	C. Too busy with baby			
Ot	her:	N/A	N/A	N/A
•	Lack of depth – 1			
•	Prefer home visits over phone calls – 1			
•	In control group/not enough gift cards – 1			
•	Too hard to guit – 1			
•	Not a good time to quit – 1			

C. Reaction Toward Striving to Quit Incentives – 100 Responses

	Number	Percent	Rank
Positive response to incentives	87	87%	1
Neutral response to incentives	7	7%	2
Negative response to incentives	6	6%	3

Positive Reaction to Incentives – 87 Responses

		Number	Percent	Rank
1.	Motivating	59	68%	1
2.	Reward/incentive/perk/bonus	16	18%	2
3.	General/no reason	9	10%	3
4.	Needed money	3	3%	4

Neutral Reaction to Incentives – 7 Responses

	Number	Percent	Rank
General neutral response/no reason – 6	6	86%	1
Gift cards fine, but home visits more motivating – 1	1	14%	2

Negative Reaction to Incentives – 6 Responses

		Number	Percent	Rank
1.	Didn't need incentive/quit for baby	3	50%	1
2.	Tie	1	17% each	2
	A. General negative response/no reason			
	B. Not motivating			
	C. Able to spend on cigarettes			
	D. Control group didn't get enough			

What did you use your Striving to Quit gift cards on? – 204 Responses

		Number	Percent	Rank
1.	Diapers or wipes	54	27%	1
2.	Tie	35	17%	2 tie
	A. Baby clothes			
	B. Baby items/baby gear			
3.	Gas	16	8%	3
4.	Food	13	6%	4
5.	Kid stuff/toys/presents	11	5%	5
6.	Baby food/formula	9	4%	6
Ot	her:	N/A	N/A	N/A
•	Household items – 8			
•	Self-care (mom) – 7			
•	Hygiene products – 4			
•	Cigarettes – 4			
•	Bills – 2			
•	Family needs – 2			
•	Saved them up – 2			
•	Nicotine replacement therapy gum – 1			
•	Date night – 1			

Incentive Suggestions – 57 Responses

		Number	Percent	Rank
1.	Smaller amounts/more gift cards	17	30%	1
2.	Higher amounts	11	19%	2
3.	Gift cards can't buy cigarettes	8	14%	3
4.	Baby or kid stuff	5	9%	4
5.	Tie	3 each	5%	5
	A. Gas cards			
	B. Products instead of cards			
6.	Tie	2 each	4%	6
	A. No gift cards, just home visits			
	B. Self-care incentives (spa day, manicures)			
	C. Only give if pass expired-air CO test and report as			
	nonsmoker			
Ot	her:	N/A	N/A	N/A
•	No gift cards at all if fail expired-air CO test – 1			
•	Point system – 1			
•	Grocery card – 1			

D. Striving to Quit Expired-Air CO Tests – 176 Responses

	Number	Percent	Rank
Positive Response to CO Test	155	88%	1
Negative Response to CO Test	21	12%	2

Positive Reaction to Expired-Air CO Test – 155 Responses

		Number	Percent	Rank
1.	Motivation	72	46%	1
2.	Evidence/educational	24	15%	2
3.	See progress	17	11%	3
4.	Reality check/eye opening	14	9%	4
5.	Accountability	8	5%	5
6.	General positive response/reason not specified	7	5%	6
Otł	ner	N/A	N/A	N/A
•	Increased awareness – 6			
•	Preparing for test increased confidence – 3			
•	Health educator offered to non-patients (partner) – 2			
•	Health educator influence/encouragement/didn't want to			
	disappoint health educator – 2			

Negative Reaction to Expired-Air CO Test – 21 Responses

		Number	Percent	Rank
1.	Tie	4	20%	1
	A. Machine not accurate			
	B. Not motivating			
	C. Added to stress level			
2.	Tie	2	10%	2
	A. Able to "cheat" system			
	B. Hard to perform			
	C. No effect (still smoking)			
3.	Tie	1	5%	3
	A. Didn't see a change			
	B. Too easy to pass			
	C. Already quit			

Expired-Air CO Test Suggestions – 33 Responses

		Number	Percent	Rank
1.	Perform during pregnancy	30	91%	1
2.	Perform more often during study	3	9%	2

E. Striving to Quit-Related Knowledge, Attitude, Behavior Change – 111 Responses

		Number	Percent	Rank
1.	Learned new coping skills	22	20%	1
2.	Learned to set goals, make an "action plan"	12	11%	2
3.	Tie	5	5%	3
	A. Increased knowledge: benefits of quitting			
	B. Used nicotine replacement therapy			
	C. Increased knowledge: environmental tobacco smoke			
	D. Sense of accomplishment			
	E. Think differently			
4.	Tie	3	3%	4
	A. Increased knowledge: risks of smoking			
	B. Decreased baby/child's exposure to environmental			
	tobacco smoke			
	C. Identified smoking triggers			
5.	Tie	2	2%	5
	A. Exercise			
	B. New skill: distraction			
	C. New skills: stress management techniques			
	D. Increased knowledge: mental health and smoking			
Ot	ner:	N/A	N/A	N/A
•	Identified support system – 1			
•	Learned new strategies to quit – 1			
•	Increased knowledge: breastfeeding and smoking – 1			

	Number	Percent	Rank
Very positive	136	95%	1
In the middle/just OK	6	4%	2
Very negative	1	1%	3

F. Overall Rating of Striving to Quit Program – 143 Responses

Part 4 – Future Programming and Suggestions

A. What Would Make It Easier for Pregnant and Postpartum Women to Quit – 128 Responses

		Number	Percent	Rank
1.	Support from family and friends	21	16%	1
2.	Reducing stress level/positive stress reliefs	14	11%	2
3.	Tie	12	9%	3 tie
	A. Focusing on baby and children			
	B. Everyone is different, no one right way to quit			
4.	Shocking visuals of consequences on baby	11	9%	4
5.	Learning strategies to quit	10	8%	5
6.	Groups/interaction with other pregnant smokers	9	7%	6
Otł	ner:	N/A	N/A	N/A
٠	Access to quit-smoking counselors – 8			
•	Avoiding smokers/smoking environments – 8			
٠	Staying busy – 7			
٠	Positive education – 7			
٠	Ban tobacco sales to pregnant women – 6			
•	Incentives – 4			
•	Knowing triggers – 2			
•	Celebrating success – 2			
•	Personal stories of consequences – 2			
•	Help with bills – 1			
•	Stop generational smoking – 1			
•	Visit moms in hospital – 1			
•	Focus on money you are spending – 1			
•	Not advertising cigarettes – 1			

B. New Programming for Pregnant/Postpartum Women

New Program Suggestions (Pregnant/Postpartum Women) – 142 responses

		Number	Percent	Rank
1.	Striving to Quit/home visiting/one-on-one	62	44%	1
2.	Support groups/participant interaction/outings	24	17%	2
3.	Lots communication/lots of visits/longer duration	23	16%	3
4.	Tie	6	4%	4
	A. Variety of incentives			
	B. Integrate topics (like exercise and stress) with			
	smoking			
	C. Conduct expired-air CO test during pregnancy			

		Number	Percent	Rank
5.	Partner involvement	5	4%	5
6.	Post-program follow-up or check-ins	4	3%	6
Ot	ner:	N/A	N/A	N/A
•	More challenges – 4			
•	Facebook Group – 2			
•	Make available to everyone – 2			
•	More visuals – 1			
•	Target high schoolers – 1			
•	24-hour helpline – 1			
•	Commercials – 1			
•	X-ray of own lung – 1			
•	Educate/involve family – 1			
•	Smartphone app – 1			
•	Tobacco companies should pay for services – 1			
•	Text every day – 1			
•	Focus on life skills – 1			

Suggestions for Messaging (Pregnant/Postpartum Women) – 168 Responses

		Number	Percent	Rank
1.	Focus on baby	52	31%	1
2.	Focus on mom	33	20%	2
3.	Visuals of risks/scare tactics/shocking images	16	10%	3
4.	Tie	12	7%	4 tie
	A. You can do it/it's possible/stay positive			
	B. Risks/negative consequences for baby			
5.	Encouragement/don't give up/do your best	11	7%	5
6.	Tie	7	4%	6 tie
	Stress management			
	Baby steps/one day at a time			
Ot	her:	N/A	N/A	N/A
٠	Support system – 5			
٠	Focus on family – 5			
٠	You are not alone – 4			
٠	Earlier the better (quitting) – 4			
٠	What is in cigarette – 3			
٠	Never too late – 3			
٠	Stay active – 2			
•	Spend time with baby, not smoking – 1			
•	Caring/understanding – 1			
•	No scare tactics/fear-based messaging – 1			
•	No one is perfect/OK to make mistakes/slips – 1			
•	You are not your cigarettes – 1			
•	Don't be pushy – 1			
•	How to fight triggers – 1			
	• Secondhand and thirdhand smoke information – 1			

	Number	Percent	Rank
 It's worth it – 1 			
• Get serious – 1			
 Quitting is easier than you think – 1 			

Suggestions for Program Promotion (Pregnant/Postpartum Women) – 163 Responses

		Number	Percent	Rank
1.	Social media	37	23%	1
2.	Pamphlets	34	21%	2
3.	Wherever pregnant women go	26	16%	3
4.	Clinics	25	15%	4
5.	Word of mouth	20	12%	5
6.	TV commercial	9	6%	6
Ot	ner:	N/A	N/A	N/A
٠	Local businesses – 5			
•	Bathrooms – 1			
•	Radio – 3			
•	Door to door – 3			

C. New Programming for Support People – 142 Responses

New Programming Suggestions (Support People)

		Number	Percent	Rank
1.	Have a Striving to Quit-like program/home visiting	32	23%	1
2.	Offer support	27	19%	2
3.	Offer information/education	17	12%	3
4.	Joint Striving to Quit meeting with the moms	16	11%	4
5.	Smoke-free home/reduce environmental tobacco smoke	14	10%	5
6.	Tie	6	4%	6
	A. Quit-buddy/do it together			
	B. Offer comfort			
	C. Share resources			
Ot	her:	N/A	N/A	N/A
٠	Expired-air CO tests – 5			
•	Give incentives/gift cards – 5			
•	Support group – 4			
•	Allow kids to stay/participate – 2			
•	All-you-can-eat buffet – 1			
•	Tough love – 1			

		Number	Percent	Rank
1.	Personal choice	30	22%	1
2.	Tie	27	20%	2 tie
	A. "Let's do it together"			
	B. Education about risks			
	C. Focus on baby/family			
3.	Be supportive	10	7%	3
4.	Focus on cravings	5	4%	4
5.	Tie	3	2%	5 tie
	A. Distraction/attention off cigarette			
	B. Shocking images			
6.	Tie	1	1%	6 tie
	A. Be persistent			
	B. Serious			
	C. Shocking visuals			

Suggestions for Messaging (Support Person Program) – 135 Responses

Suggestions for Program Promotion/Recruitment (Support Person) – 93 Responses

		Number	Percent	Rank
1.	Health care provider/doctor	27	29%	1
2.	Social media/internet/website	24	26%	2
3.	Word of mouth	21	23%	3
4.	Through the mother	11	12%	4
5.	Places where families go	4	4%	5
6.	1-800-QUITNOW	2	2%	6
Ot	ner: Grocery store – 1	N/A	N/A	N/A
•	Schools – 1			
•	Testimonials – 1			
•	Commercials – 1			