Listening to Mothers℠ III
Pregnancy and Birth

Report of the Third National U.S. Survey of Women's Childbearing Experiences

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Preface

Childbirth Connection's ongoing *Listening to Mothers*[SM] Initiative is devoted to understanding experiences and perspectives of childbearing women and using this knowledge to improve maternity care policy, practice, education, and research. *Listening to Mothers* surveys are central to this initiative. They enable us to compare actual experiences of childbearing women, newborns, and families with mothers' values and preferences, as well as with evidence-based care, optimal outcomes, and protections granted by law. Identified gaps present opportunities to improve conditions during this crucial developmental period for about four million mothers and babies annually in the United States.

The landmark *Listening to Mothers I* survey (2002) was the first time that women in the United States were polled at the national level about their maternity experiences. It offered an opportunity to understand many dimensions of the maternity experience that had not previously been measured nationally, and provided what are likely to be more accurate figures for numerous items that are measured but have been shown to be undercounted in other national data sources. *Listening to Mothers I* results were well received and widely cited. Most importantly, health plans, hospitals, professional organizations, advocacy groups, and others used the survey results to inform their efforts to improve maternity care and women's maternity experiences.

Listening to Mothers II, a national survey of U.S. women who gave birth in U.S. hospitals in 2005, continued to break new ground. In addition to continuing to document many core items measured in the first survey, the second survey and main report (2006) also explored some topics in greater depth and some new and timely topics. Further, we recontacted mothers six months after they participated in *Listening to Mothers II*, and most also participated in a follow-up survey that focused on their postpartum experiences. We issued a separate report *New Mothers Speak Out* (2008), combining results from both the *Listening to Mothers II* survey and the postpartum survey. Childbirth Connection's *Listening to Mothers II* survey results again have been widely used to inform policy, practice, education, and research. Both surveys were carried out in partnership with Lamaze International.

We are grateful for the opportunity to again carry out both the *Listening to Mothers III* survey and a follow-up survey directed to the same women. The *Listening to Mothers III* survey questionnaires retained many core items that we measured in one or two previous surveys and have evolved in tandem with the U.S. health care environment, which has changed substantially since *Listening to Mothers II*. Many new and timely topics in the *Listening to Mothers III* surveys will be of interest to those with responsibility for childbearing women and newborns, including participants within the many maternity care quality improvement initiatives that have arisen. Later this year, we will publish a companion report, *Listening to Mothers III: New Mothers Speak Out*.

The *Listening to Mothers* surveys were developed through collaborative efforts of core teams from Childbirth Connection, Boston University School of Public Health, and Harris Interactive®. Each time around, a multi-stakeholder, multi-disciplinary National Advisory Council provided guidance on survey development, dissemination, and application. Harris Interactive® conducted all of the surveys.

The present report and the main reports from previous *Listening to Mothers* surveys present just a small portion of results and possible analyses from these rich datasets. Our team and other researchers have published articles that go into greater depth about many specific topics. A list of all publications, along with the main survey reports, survey questionnaires, and other related material, are available at www.childbirthconnection.org/listeningtomothers/. The datasets from the first three surveys are deposited in the Odum Institute Data Archive at the University of North Carolina (www.odum.unc.edu/odum/) and are publicly available for use by researchers and students.

The *Listening to Mothers* survey questionnaires are valuable tools that can be applied to other populations – to understand, for example, maternity experiences at the state level, within a health plan, among women using a particular hospital, or at the national level in another country. We would welcome the opportunity to collaborate with others who wish to better understand mothers' experiences in a diverse range of contexts in order to improve conditions for mothers, babies and families.

The survey results reported here reveal a broad array of gaps between the actual experiences of mothers and babies and more optimal conditions. We hope that those involved with maternal and infant health will review the results and identify priority areas for quality improvement within their own work and networks. We also hope survey results will increase awareness among childbearing women of these widespread concerns and motivate them to learn more about safe and effective care, understand their maternity rights, and seek the best possible care and life circumstances for themselves and their babies.

Acknowledgments

We want to express our gratitude to the mothers across the United States who freely shared their maternity experiences with us at an exceptionally demanding time in their lives.

We express our deep appreciation to the W.K. Kellogg Foundation for its generous support enabling us to develop, carry out, and report the *Listening to Mothers III* surveys, and to our Project Officer, Diana Derige. Roz Pierson, PhD, and Sandra Applebaum, MS, at Harris Interactive led the project team. Ellen Papciak-Rose designed this report. Amy Romano provided feedback on drafts and developed fact sheets. Jessica Turon assisted with background research to help us develop the new questionnaire. Kat Song provided communications and media support.

We are grateful to members of the *Listening to Mothers III* National Advisory Council, who provided guidance on the development, dissemination, and application of this survey. Their multi-disciplinary perspectives and diverse professional experiences have strengthened this project in many ways.

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Major Survey Findings

Childbirth Connection's ongoing *Listening to Mothers*[SM] Initiative is devoted to understanding experiences and perspectives of childbearing women and using this knowledge to improve maternity policy, practice, education, and research. *Listening to Mothers* surveys enable us to compare actual experiences of childbearing women and newborns with mothers' preferences, as well as with evidence-based care, optimal outcomes, and protections granted by law. Identified gaps present opportunities to improve conditions for this large and important population during this crucial period.

For *Listening to Mothers III*, 2400 mothers completed the survey online. All survey participants were 18 through 45 years, could participate in English, and had given birth to single babies in a U.S. hospital from July 1, 2011 through June 30, 2012. Participants completed the online survey, averaging approximately 30 minutes in length, from October through December 2012. To develop a national profile of childbearing women, the data were adjusted with demographic and propensity score weightings using methodology developed and validated by Harris Interactive. The resulting survey population is generally representative of U.S. mothers 18 through 45 who gave birth to single babies in a hospital from July 2011 through June 2012. The respondents are generally comparable to published national data for U.S. birthing mothers on critical factors such as age, race/ethnicity, parity, birth attendant, and mode of birth.

Planning for Pregnancy and the Pregnancy Experience

Pregnancy Intendedness
More than one in three (35%) mothers indicated that they did not intend to become pregnant at this time, with 5% saying they never intended to become pregnant and 30% preferring to become pregnant later.

Pregnancy and Weight
Forty-four percent of mothers reported a pre-pregnancy weight that, given their height, would be classified as overweight (24%) or obese (20%). Mothers reported a typical weight gain of 24 lbs in pregnancy and a loss of 20 lbs since giving birth.

Choosing a Prenatal Care Provider and Birth Hospital
The leading reasons mothers cited for choosing a provider were "accepted health insurance" (96%), "good match for my values" (89%), and "attends birth at my preferred hospital (88%). A similar pattern emerged in choosing a hospital, with insurance coverage (97%), link to provider (93%), and a match to values (89%) the most commonly cited reasons.

Comparing Quality of Providers and Hospitals
Two in five (40%) of mothers used information that allowed them to compare the quality of maternity care providers, while 41% indicated they used information on quality to choose their maternity hospital.

Chronic Conditions Experienced Before Pregnancy
One in eleven (9%) mothers indicated a health professional had told them before their recent pregnancy that they have Type 1 or Type 2 diabetes, and another 11% were told during their pregnancy they had gestational diabetes. In the month before they became pregnant, a small but notable proportion of mothers reported taking prescription medicine for either high blood pressure (8%) or depression (13%).

Prenatal Care Provider
An obstetrician was the prenatal care provider for 78% of mothers, followed by family physicians (9%) and midwives (8%). A substantial majority of women (78%) "always" or "almost always" saw the same maternity caregiver for their prenatal care.

Barriers to Communication with Prenatal Care Providers
We asked mothers if they had ever held back from asking their provider questions for any of three different reasons. Many indicated that they had because their provider seemed rushed (30%), because they wanted maternity care that differed from what their provider wanted (22%), or because their prenatal care provider might think that they were being difficult (23%).

Group Prenatal Care
One in five mothers (22%) indicated that at least one of their prenatal visits involved meeting with their provider in a group with other pregnant women. Of those mothers, 13% indicated that their visits "usually" or "always" involved group care. Among those saying they "usually" or "always" received prenatal care in a group, 61% rated the care as "excellent."

Ultrasounds
Almost all the mothers (98%) indicated they had had an ultrasound during their pregnancy, with 70% having three or more and 23% having six or more.

Change of Due Date
Almost one in six mothers (17%) indicated that their prenatal care provider changed their due date to an earlier date than the original estimate, while 9% reported a change to a later date.

Childbirth Education
One in three (34%) mothers reported taking a childbirth class with this pregnancy, with new mothers (59%) more likely than experienced mothers (17%) to have taken a current class. Overall, 53% of mothers had taken a class either with this pregnancy or a prior one. Half of the mothers (49%) reported taking weekly classes across multiple weeks, with the rest reporting their classes were done in one (24%) or two (26%) days.

Sources of Information about Pregnancy and Birth
Mothers were asked to rate how valuable a number as sources of information about pregnancy and childbirth were to them during their pregnancy. Their maternity care providers were cited most often as "very valuable" sources of information for both first time (76%) and experienced (82%) mothers, followed by childbirth education classes and pregnancy/childbirth websites.

Preferred Devices for Getting Online Information About Pregnancy and Childbirth
A laptop or desktop computer with Internet access was most commonly used device for accessing online information – 82% typically used it at least once a week – followed by smartphone with Internet access (64%), tablet (35%), and a regular mobile phone with text messaging and Internet access (33%). Two in three mothers (67%) signed up to receive emails "weekly or so" providing information about pregnancy and childbirth during pregnancy. Just over one in four (27%) mothers signed up with short message services to receive regular text messages about pregnancy and childbirth topics. Of those, 63% (17% of all mothers) reported that the text messages were from the Text4baby program.

Use of WIC
Half of the mothers (51%) indicated that they had participated in WIC, the Special Supplemental Nutrition Program for Women, Infants and Children, during their pregnancy.

Women's Experiences Giving Birth

Primary Birth Attendant
Obstetricians were the primary birth attendants (70%) of our mothers, followed by midwives (10%), family physicians (6%), and a doctor of unknown specialty (7%). Overall, 61% of the birth attendants were female, including 54% of the obstetricians.

Labor Induction
Three in ten (29%) mothers tried to start their labor on their own. More than four out of ten respondents (41%) indicated that their care provider tried to induce their labor, with three out of four of those women (74%) indicating that it did start labor, resulting in an overall rate of medically induced labor of 30%.

Reasons for Medically Induced Labor
Among mothers who experienced attempted medical induction, quite a few cited reasons of convenience or others without a medical rationale, including the baby was full term (44%), wanting to get the pregnancy over with (19%), and wanting to control timing (11%) (mothers could choose more than one reason). Quite a few also selected an indication that is not supported by best evidence: a provider's concern about the size of the baby (16%). The most commonly cited medical reasons were a provider's concern that the woman was overdue (18%) and a maternal health problem that required quick delivery (18%).

Individuals Who Provided Supportive Care During Labor.
Almost all women (99%) reported having received some type of supportive care. Typically, a husband or partner (77%), the nursing staff (46%), another family member or friend (37%), or a doctor (31%) provided this type of support.

Knowledge of Doulas (Trained Labor Assistants)
Although only a small minority of women (6%) actually received supportive care from a doula (a trained labor assistant) during labor, three out of four women (75%) who did not receive care from a doula had heard about this type of caregiver and care and more than one in four (27%) of those who hadn't used one and understood this type of care indicated she would have liked to have had doula care.

Use of Pain Medications
While 17% of mothers reported using no pain medication, the vast majority (83%) used one or more types of medication for pain relief for at least some of the time during labor. Epidural or spinal analgesia (67% of all women) was the most common form of medication used in both vaginal (62%) and cesarean (80%) births. One out of six women (16%) reported they were given narcotics such as Demerol or Stadol, while a small proportion underwent general anesthesia (7%) or used nitrous oxide gas (6%).

Use of Drug-Free Methods for Labor Pain Relief
Women who experienced labor used a variety of drug-free methods to increase comfort and relieve pain, with 73% using at least one non-pharmacologic method of pain relief, led by breathing techniques (48%), position changes (40%), hands-on (e.g., massage) techniques (22%), and mental strategies (e.g., relaxation) (21%).

Other Labor and Birth Interventions
Mothers reported high levels of intervention, with experiences varying by method of birth. Common interventions for women with vaginal births included being given one or more vaginal exams and having intravenous (IV) fluids administered into a blood vessel in their arm, a catheter to remove urine, synthetic oxytocin (Pitocin) to strengthen or speed up contractions after labor had begun, membranes broken to release amniotic fluid after labor had begun, and an episiotomy. Common interventions in women with cesarean births included attempted induction, broken membranes, intravenous lines, bladder catheters, synthetic oxytocin to speed labor, and shaved pubic hair.

Freedom and Constraint in Labor and Birth
Two out of five (43%) women who experienced labor did any walking around once they were admitted to the hospital and regular contractions had begun. More than two-thirds (68%) of women who gave birth vaginally reported that they lay on their backs while pushing their baby out and giving birth, while 23% indicated they gave birth in a propped up (semi-sitting) position.

Mode of Birth
Thirty-one percent of the mothers in our survey had a cesarean birth, split between those having a primary or first-time cesarean (15%) and a repeat cesarean (16%). These cesareans were mostly either unplanned first-time (primary) cesareans (9% of all births) or planned repeat cesareans (12% of all births). Almost three in five mothers (58%) had an unassisted vaginal birth, with the remainder having a vaginal birth assisted by forceps or vacuum extraction.

Vaginal Birth after Cesarean (VBAC)
Among those women who had had a cesarean in the past, 14% had a vaginal birth after cesarean for the most recent birth, while 86% had a repeat cesarean. Of women with a previous cesarean, 48% were interested in the option of a VBAC, but many of these women (46%) were denied that option. The most common reasons for the denial of the VBAC were a medical reason unrelated to the prior cesarean (45%) or unwillingness of their caregiver (24%) or the hospital (15%).

Reasons for Cesarean
Among mothers with a primary cesarean, the four major reasons cited were: baby was in the wrong position (16%), fetal monitor reading showed a problem (11%), the mother had a health condition that called for the procedure (10%), or the baby was having trouble fitting through (10%). Among those mothers with a repeat cesarean, 61% cited their prior cesarean as the main reason, followed by concern that the mother had a health condition that called for the procedure (13%).

Cesarean Decision Making
Twenty-two percent of mothers indicated they had asked their provider to plan for a cesarean delivery. This was most common among mothers who were planning a repeat cesarean (57%) or, for mothers without a prior cesarean, because of a medical condition that could lead to a cesarean. We asked mothers who made the decision concerning a cesarean and when they made it. Almost two-thirds of mothers (63%) with primary cesareans indicated the doctor was the decision maker. For mothers with a repeat cesarean, the decision typically had been made before labor by either the provider (47%) or the mother (30%).

Rarity of Maternal Choice Primary Cesareans
Just over 1% of mothers with a primary cesarean reported that they themselves had made the decision to have a cesarean in advance of labor and there had been no medical reason for the cesarean.

In the Hospital After the Birth
During the first hour after birth, newborns were mostly either in mothers' (47%) or partners' (16%) arms. Three in five (60%) women said that following the first hour after birth, their baby stayed with them all of the time (typically termed "rooming in") for the rest of the hospital stay. In 18% of the births, the baby spent time in a neonatal intensive care unit (NICU).

Newborn Feeding
As women neared the end of their pregnancies, 54% reported wanting to breastfeed exclusively, while 27% planned to use a combination of breastfeeding and formula, and 19% planned to use formula only. One week after giving birth, half (50%) of the mothers reported feeding their babies breast milk only. Among mothers who had given birth at least seven months earlier, 29% reported exclusive breastfeeding for at least six months. Most women (66%) reported that the hospital staff, on the whole, encouraged breastfeeding. Of those mothers who intended to exclusively breastfeed, 49% were given free formula samples or offers, 37% of their babies were given pacifiers by staff, and about three in ten (29%) were given formula or water to supplement their breast milk during the hospital stay.

Experience in Hospital
When asked if they ever felt they were treated poorly in the hospital because of their race, insurance situation, or because of a difference of opinion with their provider, less than 10% of mothers indicated they were "usually" or "always" treated poorly for any of the stated reasons.

Home with a New Baby

Burden of Physical Health Concerns after Birth
The most commonly cited postpartum health problem within the first two months after birth was among those women who had experienced a cesarean section: 58% reported pain at the site of the incision, with 19% citing it as a major problem. Among mothers with a vaginal birth, 41% (11% major) cited a painful perineum as a problem, a finding strongly related to whether or not a mother experienced an episiotomy. Among those mothers who had given birth at least six months earlier, 16% of those with a cesarean had ongoing pain at the site of the cesarean scar, 11% cited continuing urinary problems, and 7% a painful perineum.

Pain and Everyday Activities
Three-quarters (77%) of mothers said that pain did interfere at least "a little bit" in their routine activities in the first two months, with 14% indicating that pain interfered either "quite a bit" (9%) or "extremely" (5%). These findings varied widely depending on method of delivery, with 26% of mothers with a cesarean describing at least quite a bit of interference with routine activities compared with 9% of mothers with a vaginal birth.

Mental Health in the Postpartum Period
More than one out of three (37%) women who had given birth in the past year reported suffering some degree of depressive symptoms in the two weeks before the survey, with 17% reaching the threshold for depression in a validated screening tool. One out of five (22%) of all survey participants also said that they had consulted a health care or mental health professional with concerns about their emotional or mental well-being since giving birth.

Paying for Maternity Care
Forty-seven percent of mothers indicated that private insurance was the primary payer of their maternity care expenses, while 38% had Medicaid as the primary payer. Two in five mothers (40%) reported paying for at least some of the costs themselves.

Choice, Control, Knowledge, and Decision Making

Opinions on Medical Intervention in the Birth Process
Almost six in ten (59%) of the mothers agreed with the statement, "Giving birth is a process that should not be interfered with unless medically necessary," while 16% disagreed.

Rating the Maternity Care System
Mothers generally rated the quality of the United States maternity care system very positively (47% good; 36% excellent).

Pressure to Accept Interventions and Experience Refusing Them
Some mothers indicated they felt pressure from a health professional to accept labor induction (15%), epidural analgesia (15%), or cesarean section (13%). These

figures varied widely by whether or not the mother had actually received the intervention, with three times as many mothers who received an induction (25%) or cesarean (25%) saying they received pressure compared with mothers who did not receive pressure (8%).

Shared Decision Making

Induction or Primary Cesarean with a Potentially Large Baby. We explored the extent to which mothers experienced shared decision making processes in three scenarios: an induction or a cesarean in response to concerns about a large baby for mothers without a prior cesarean and the decision to have a VBAC or repeat cesarean for mothers with a prior cesarean. Overall, 32% of mothers without a prior cesarean reported that they were told as they neared the end of pregnancy that their baby might be getting large. After hearing that their baby might be large, 62% of mothers reported having a discussion with their provider about inducing labor because of concerns about the baby's size, and 44% reported having talked about a scheduled cesarean for the same reason. Mothers generally felt the final decision was their own or shared in the case of both induction (80%) or cesarean (62%), though in both cases a large proportion of mothers (induction – 80%; cesarean – 72%) stated that their doctors recommended intervention. The rates of intervention when the mothers had this discussion with their provider were much higher than average in the case of induction (67%) and primary cesareans (29%).

Repeat Cesarean after One or Two Prior Cesareans. A total of 97% of mothers with a prior cesarean indicated there had been at least some discussion with their provider over why they should have a repeat cesarean, but only 60% indicated there had been any discussion about why they should have a VBAC. When their provider expressed an opinion (72% of the time), it was typically in favor of a cesarean (88%). Mothers generally felt the final decision was either their own (40%) or shared (39%). In most cases (93%) the mother received a repeat cesarean.

Attitudes About Impact of Interventions

We provided mothers with statements concerning possible adverse effects of cesarean section and induction and asked if they agreed or disagreed with those statements. In no case did a majority of mothers cite the "correct" response. Pluralities of mothers were "not sure" for both cesarean questions and one of two induction questions.

Knowledge About Safe Timing for Birth

Asked about the earliest safe week of pregnancy for delivery of the baby, should complications not call for an earlier delivery, most mothers identified what are understood as "early term" or "preterm" weeks and are associated with increased risks for babies. While the current standard is to wait for at least 39 weeks, just one in five identified 39 weeks or beyond. Two in three mothers agreed with the statement that if a pregnancy is healthy it is best to wait for labor to begin on its own rather than inducing it or scheduling a cesarean.

Looking at Important Variations in Experience

First-Time Mothers by Mode of Birth
In comparison with first-time mothers with a vaginal birth, a first-time mother who had a cesarean was less likely to have had the baby in her arms immediately after birth. She was more likely to have had an epidural.

Experienced Mothers by Mode of Birth
In comparison with experienced mothers with a vaginal birth, experienced mothers who had cesareans were less likely to have had a midwife as their prenatal care provider, tried to self-induce, or had a medical induction; and had the baby in their arms after birth, roomed in, or been breastfeeding at one week.

Differences by Race/Ethnicity
When comparing three race/ethnicity groupings, black non-Hispanic mothers were *most likely* to report that they were unmarried with no partner, on WIC, had an unplanned pregnancy, had a group prenatal visit, and had been given a choice about an episiotomy. They were *least likely* to report intention to exclusively breastfeed, though at one week their rates of exclusive breastfeeding were comparable to others. Hispanic mothers were *most likely* to be told they had gestational diabetes and not met their provider until just before birth. Non-Hispanic white mothers were *least likely* to have an unplanned pregnancy, consider pregnancy websites very valuable, be given a choice about episiotomy or experience a group prenatal visit. White non-Hispanic mothers were *most likely* to intend to exclusively breastfeed and be exclusively breastfeeding at one week.

Differences by Payer Source for Delivery
Mothers with Medicaid as the primary source of payment for maternity services were less likely than those with private insurance as the primary payer to have a visit to plan for a healthy pregnancy. They were more likely to regularly have group prenatal visits, be medically induced, not have met their birth attendant until the birth, and have their baby spend time in the NICU. Mothers on Medicaid were less likely to intend to exclusively breastfeed and be exclusively breastfeeding at one week.

Trends: Comparing Results Across *Listening to Mothers* Surveys

Before and During Pregnancy
Across the period of the surveys we saw an increase in preconception visits, use of ultrasound in pregnancy and ultrasound to estimate fetal size, use of the Internet as a source of information about pregnancy and childbirth, and continuity of prenatal care provider. There was a decrease in intention to exclusively breastfeed and breastfeeding at one week and, in the past two surveys, a decrease in pregnancies that were not intended and in obesity at the time of conception.

Around the Time of Birth

We saw general stability in attempted medical labor induction and use of several highly rated drug-free measures for labor pain relief. What have been termed "maternal request" cesareans remain rare among women with a primary cesarean. There has been an increase in attempts at labor self-induction, drinking liquids and eating solid food during labor, having the newborn "room-in" during the hospital stay, and mothers' experience of pressure to have several major intrapartum interventions.

Postpartum Period

The proportion of newborns who were exclusively breastfeeding a week after birth declined between the first two surveys and remained the same in the third survey. While women with cesarean births continued to be more likely to identify pain and infection at the incision as a major problem in the first two months after birth relative to women with vaginal births who identified painful or infected perineum, differences by mode of birth narrowed in the most recent survey.

Attitudes, Choice, and Decision Making

Ratings of the U.S. maternity care system have been remarkably stable and quite favorable over the last two surveys with more than 80% of mothers rating it good or excellent. By contrast, the proportion agreeing somewhat or strongly that birth is a process that should not be interfered with unless medically necessary has steadily risen from fewer than half (45%) a decade ago to nearly six in ten (58%). Among women interested in a VBAC, there was a notable growth (from 43% to 54%) in the proportion of women indicating they had the option for a VBAC. For those without the option of a VBAC, the proportion reporting that their care provider or their hospital was unwilling declined appreciably between the last two surveys. However, the proportion of mothers denied access to a VBAC for a medical reason unrelated to their prior cesarean more than doubled.

Introduction

This report continues Childbirth Connection's ongoing initiative to focus the discussion of maternity care in the United States on the people who care about it the most: mothers themselves. *Listening to Mothers* (conducted in 2002) and its successors, *Listening to Mothers II* (2006), a follow-up survey directed to the same women six months later that focused on their postpartum experiences (2006), and now initial (2012) and follow-up (2013) *Listening to Mothers III* surveys, have been the first systematic national studies of U.S. women's perceptions of their childbearing experiences. They have documented for the first time at the national level the frequency of many practices and experiences from before pregnancy through the postpartum period that have been recorded only at the clinical, community or state level, if at all, in the past. The surveys also document many data items that are also collected in the federal vital and health statistics system. The results of the *Listening to Mothers* surveys thus offer the opportunity for an unprecedented level of understanding about many dimensions of the experience of childbearing in the United States. Containing both core continuing items and new items of special relevance to the evolving health and maternity care system, the surveys both chart trends and examine new and timely topics.

"I really appreciate the fact that there are such surveys being conducted because while I did not have any problems or incidents to report, … hopefully any such issues are brought to light …, and hopefully they will help improve how patient care is delivered in pregnancies and deliveries. Thank you so much."

The study reported here was developed through the collaborative efforts of a core team from Childbirth Connection, Boston University School of Public Health, and Harris Interactive, with the support of the *Listening to Mothers III* National Advisory Council (see Preface for a list of Council members). Harris Interactive administered the survey.

Who Was Included in Our Sample, and How We Reached Them

Core Survey

The online survey was conducted from October 11 through December 26, 2012. All 2400 survey participants were 18 to 45 years of age, could respond to a survey that was in English, and had given birth in a U.S. hospital to a single baby who was still living when the women participated in the survey. We excluded mothers with multiple births and those who gave birth in freestanding birth centers or at home as their experiences are quite different from other mothers and the numbers that would have been included in the sample would have been too small to analyze separately. Mothers whose babies had died were excluded to avoid causing them added grief. If a contacted mother had lost a child, she was offered contact information for several national organizations that provide support to bereaved parents. The survey focused on births that had taken place between July 1, 2011 and June 30, 2012 and included questions about the women's reproductive history. Looking at the results by time elapsed since giving birth (from 3 to 18 months) allows us to cross-sectionally analyze

the postpartum experiences of mothers at different periods since the birth. On average, the survey took approximately 30 minutes to complete.

Survey Questionnaire
The complete *Listening to Mothers III* survey questionnaire is available on Childbirth Connection's website at: transform.childbirthconnection.org/reports/listeningtomothers/. Individuals citing *Listening to Mothers III* results are encouraged to consult the questionnaire to understand the specific questions posed, choices offered, and groups of women ("base") who responded to the questions, whether all mothers or specific subgroups.

Mothers' Survey Participation Experience
There were many indications that *Listening to Mothers III* participants were exceptionally engaged in the survey and interested in having their voices heard, including their willingness to take more time answering questions than typical survey respondents and their willingness to respond to open-ended questions.

Data Weighting
To develop a national profile of childbearing women aged 18 to 45 and giving birth to single babies in hospitals, the data were adjusted with demographic and propensity score weightings using methodology developed and validated by Harris Interactive. The propensity score, a measure of the propensity to be online, adjusts for the qualities of online participants to result in a weighted sample that is more representative of mothers as a whole who are 18 to 45 with single babies.

Demographic Profile of Respondents
Careful weighting of data results in a population of respondents that closely mirrors the target population – mothers 18 to 45 who gave birth to a single baby in a hospital birth. The profile of our respondents generally parallels a comparable national birthing population in terms of race/ethnicity, age, education, method of birth and number of times the mother had given birth.

Supplementary Material in Appendices
Appendix A provides a detailed methodology of the survey, including discussion of the processes for weighting the results. An overview of the demographic profile of the unweighted and weighted samples appears in Appendix B. Appendix C compares *Listening to Mothers III* results to a comparable series of the most recently available figures in the federal vital and health statistics system and shows the sample to be demographically and experientially representative of the parallel U.S. birthing population.

A Note on Reading the Text, Tables, and Figures

In the tables, the use of "n.a." means that mothers were not asked that particular question usually because it involves a subgroup they do not belong to or, in the tables comparing results over time, the question was not asked (or asked in the same way) in a given year. Percentages may not always add up to 100% because of rounding, the acceptance of multiple answers from respondents, or exclusion of rarely chosen response categories from a table.

The term "base" is used to identify the total number of respondents answering that question. Since many questions are only asked of a subgroup of the sample (e.g., only women who had had labor induction were asked about the reason for their induction) some results may be based on small sample sizes. Caution should be used in drawing conclusions from results based on smaller samples. Readers should also be alert to exactly which population is being referred to in the tables and text since in some cases we probe the data through several layers. We try to make clear throughout exactly who is being referred to. Although this can lead to some inelegant, if accurate phrasing, our primary goal was clarity.

When subgroup comparisons are presented in tables, comparisons where the differences are statistically significant at the $p < .01$ level based on a chi-square test are indicated by an asterisk. When occasional comparisons noted in the text are not described in an accompanying table and are significant at the $p < .01$ level, this is noted in the text.

A Note on the Selection of Quotations from Survey Participants

All women who participated in the *Listening to Mothers III* survey were offered three opportunities to provide fully open-ended comments. We asked them to describe (1) the best thing about their experience of giving birth, (2) the worst thing about their experience, and (3) anything else they would like to tell us about any aspect of their maternity experience. A remarkable number of mothers took the time to respond to one or more of these invitations. We received many vivid and moving stories, observations, and opinions that bring the women's experiences to life. Faced with the challenge of selecting comments for this report from among this large and important set of remarks, we gave priority to either contrasts that suggest the range of women's experiences or those that illustrate notable survey results. Some quotes illustrate a situation of concern for a relatively small proportion that nonetheless impacts many mothers or babies, since about four million women give birth annually in the United States. The quotations in this report reproduce the women's words, though we have in some cases corrected spelling and punctuation. Qualitative researchers are separately analyzing these open-ended responses.

Project Responsibility

Childbirth Connection, Boston University, and Harris Interactive teams collaboratively developed the survey questionnaire, with guidance from the *Listening to Mothers III* National Advisory Council.

The National Advisory Council communicated by email as the survey was planned, refined, carried out, and reported. Sandra Applebaum, Senior Research Manager, led the Harris team responsible for management of the project and initial analysis of results.

Eugene Declercq, Boston University; Carol Sakala and Maureen Corry of Childbirth Connection; and Sandra Applebaum, Harris Interactive, reviewed and in many instances further analyzed the data presented in this report. Ariel Herrlich contributed throughout the project, including by identifying potential new questions, user testing new questions, and testing the programmed survey interface. The co-authors collectively developed the report. Harris Interactive has reviewed the entire report and finds it to be a fair and accurate depiction of the survey results.

As with all Harris Interactive surveys, *Listening to Mothers* surveys comply with the code and standards of the Council of American Survey Research Organizations and the code of the National Council of Public Polls. Dr. Declercq and the other non-Harris authors had access to only a deidentified file provided by Harris Interactive similar to the version that will later be archived at the Odum Institute (www.odum.unc.edu/odum/).

Companion Follow-Up Survey and Report

In early 2013, we invited *Listening to Mothers III* participants to complete a follow-up survey, and many did so. The follow-up survey focused on the women's postpartum experiences followed out over a longer period of time, and further explored their beliefs, attitudes, preferences, knowledge, and experiences relating to childbearing and maternity care. A companion report of combined initial and follow-up survey results, *Listening to Mothers℠ III: New Mothers Speak Out*, will be published in June 2013. The follow-up survey also included a smaller number of additional questions about pregnancy and childbirth experiences, which will be reported in an appendix to the companion report.

1. Planning for Pregnancy and the Pregnancy Experience

Survey topics in the area of planning for pregnancy and being pregnant are intended to increase our understanding of mothers' readiness for pregnancy, their experiences with seeking and using prenatal care and complementary services, and views and experiences with various sources of information about pregnancy, childbirth, and maternity services. The *Listening to Mothers III* follow-up survey questionnaire includes several additional items relating to the prenatal period that will be reported in the future. Pregnancy-related questions about learning about being pregnant, information sources, viewing childbirth TV shows, and switching maternity care providers and hospitals were included in our follow-up survey directed to the same women, and are reported in an appendix to the companion report, *Listening to Mothers℠ III: New Mothers Speak Out*.

Before Pregnancy, Including Planning for a Healthy Pregnancy

Pregnancy Planning Visits
Among those mothers who intended to get pregnant at that time or sooner, 52% had a visit to a health care provider to plan their pregnancy (preconception visit).

Chronic Conditions Experienced Before Pregnancy
We asked the mothers whether a health professional had ever told them that they have Type 1 or Type 2 diabetes, and 9% replied affirmatively. Mothers were also asked if in the month before they became pregnant they were taking any prescription medicine for either high blood pressure (8% said they did) or depression (13%).

Body Mass Index Just Before Becoming Pregnant
To be able to calculate Body Mass Index, we asked mothers their height and their weight just before they had become pregnant with their child born in 2011-12. Just before becoming pregnant, 9% were underweight, 48% were normal weight, 24% were overweight, and 20% were obese. We describe weight gain during pregnancy, and weight at the time the women participated in the survey later in this report.

Assistance With Becoming Pregnant
We asked mothers if they had received special medical help from a doctor or clinic to become pregnant, and a sizeable percentage (16%) indicated that they had.

"We had been talking about fertility treatment, but we could not afford it – so we had given up hope."

Pregnancy Intendedness
Reflecting on their births in 2011-12, most survey participants wanted to become pregnant either prior to (20%) or at the time (45%) they became pregnant. However, for more than three out of ten women, this pregnancy was unplanned: that is, they did not want to become pregnant at that time, including 30% who had hoped to become pregnant at some time in the future, and 5% who indicated that they never wanted to become pregnant.

"Though this was an accidental pregnancy and weighed very heavy on my thoughts and emotions, I'm very happy to have my daughter."

Prenatal Care

"You need to know that you can shop around for what you want."

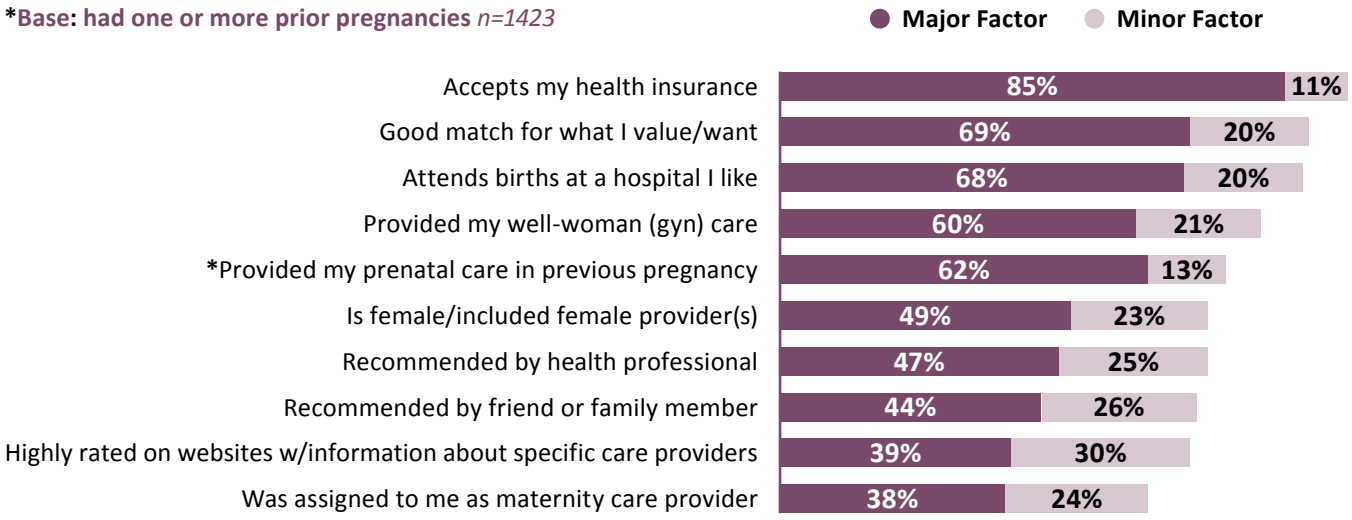
"I found a doctor I loved who was on board with all my beliefs and fully supported all my decisions."

"I would have chosen a midwife if that were an option. There are none available where I live under my insurance plan."

Choosing a Prenatal Care Provider. We asked mothers to rate the importance of 10 different factors in choosing a maternity care provider and seven possible influences on choosing a hospital. The results are presented in Figures 1 and 2. With respect to maternity care providers (Figure 1), the quality most often cited as a "major factor" in their choice was accepting their insurance (85%), while the second most commonly cited "major factor" was "good match for what I value and want" (69%). Other major factors cited by at least half of the mothers were "attended births at a hospital I like" (68%), "provided prenatal care in previous pregnancy" (62%, asked of experienced mothers only), and "provided well-woman care" (60%). A smaller proportion of mothers mentioned provider gender as a "major factor" (49%), but those who did cite it as a "major factor" were much more likely to have a female birth attendant (78%) than those who said it was not a factor (29%) ($p < .01$).

Figure 1. Mothers' reasons for choosing maternity care provider or group

Base: all mothers *n=2400*
***Base: had one or more prior pregnancies** *n=1423*

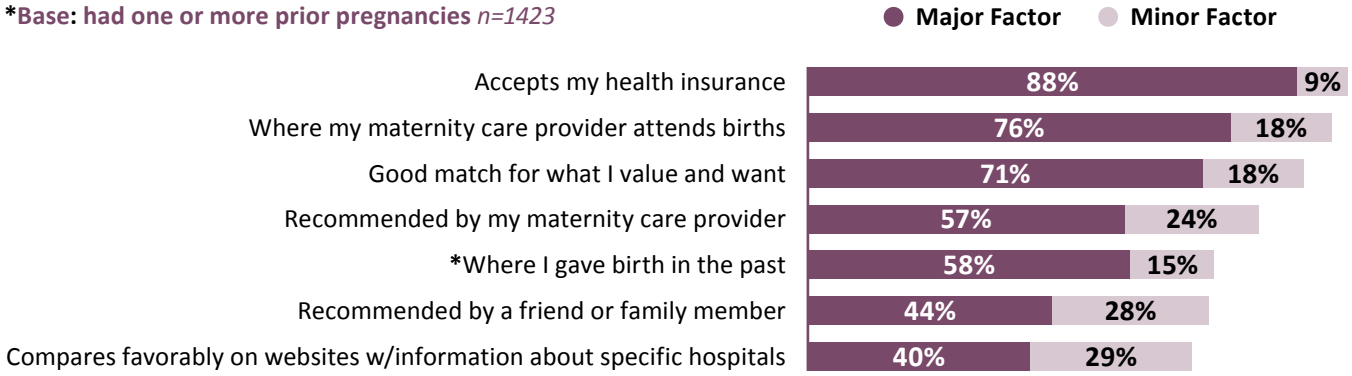


Choosing a Hospital. A similar pattern emerged in the participants' responses about the choice of a hospital in which to give birth (Figure 2), with insurance (88%), site where provider attends births (76%), a match in values (71%), past birthing experience at the hospital (58% of experienced mothers), and recommendation from provider (57%) being the most commonly cited major factors.

"I would've liked a hospital closer to home but had to go with the one that offered evening appointments."

Figure 2. Mothers' reasons for choosing hospital for giving birth

Base: all mothers *n=2400*
***Base: had one or more prior pregnancies** *n=1423*



Comparing Quality of Providers and Hospitals

We asked mothers if they sought and used information on comparative quality of potential providers and hospitals. Almost half of mothers (49%) saw information that allowed them to compare the quality of maternity care providers, and half (50%) saw information comparing the quality of hospitals with maternity care units. Among those who did see such information, about 4 in 5 used the information to make a decision about their provider (81%) or hospital (82%). Combining the responses to these questions results in 40% of all mothers reporting they used information on the comparative quality of providers in choosing their provider, and 41% used data on quality in choosing their hospital. When mothers did not use the information on quality in choosing a provider or hospital (Table 1), the most common reason cited was that they had already made up their mind (52% for providers; 52% for hospitals) or they had no choice (12% for providers; 21% for hospitals). Most common among the other responses were concerns about the accuracy, relevance, or clarity of the comparative information itself.

"I did a lot of research before picking a caregiver and hospital to ensure a positive experience."

"My hospital has one of the lowest c section rates in the area which is one of the reasons why I chose to give birth there."

Table 1. Mothers' reasons for not using comparative quality information when choosing maternity care provider or hospital

(choose all that apply)

Base: aware of comparative quality information and did not use it	Providers *n=205*	Hospitals *n=194*
Already had made choice	**52%**	**52%**
Information wasn't useful or relevant	**18%**	**13%**
Unsure of information's accuracy or trustworthiness	**15%**	**15%**
Didn't find information of interest	**13%**	**12%**
Didn't have a choice	**12%**	**21%**
Information was confusing/hard to understand	**12%**	**8%**
Didn't find information about (providers/hospitals) covered by my insurance	**9%**	**6%**

First Prenatal Visit

On average, mothers learned they were pregnant at 5.7 weeks into their pregnancy and had their first prenatal visit at 8.4 weeks. We asked mothers if they were able to have their first prenatal visit at the point in their pregnancy when they wanted to. Most mothers (82%) indicated that they were able to do so. Of those who did not get a visit as early as they hoped, 37% simply could not get an appointment as soon as they wished, while 15% stated it took a while to decide where to get their prenatal care. More than one in three (38%) cited a financial reason, either not having insurance or enough money to pay for visits or not yet having a Medicaid card, while others cited inability to take time off from work (10%), transportation problems (5%), or some other reason (13%).

"I did not receive Medicaid until 2 weeks before the baby was born."

Type of Prenatal Caregiver

For a substantial majority of our respondents (78%), an obstetrician-gynecologist was the type of caregiver most directly involved with providing prenatal care. Survey respondents indicated that in about 9% of cases, family physicians provided their prenatal care. For 8% of mothers a midwife was the primary provider of prenatal care, with the remainder scattered across nurses who are not midwives, physician assistants, unknown type of doctor, and "not sure."

"Make sure you pick a doctor who is down to earth, who really tells it how it is, instead of being uptight and always wanting to go by the book. Ask any question, even if you've asked it before. Care for your body as if you are caring for your baby."

Prenatal Online Services

We asked mothers what, if any, services had been available online to them from their providers. Almost half (47%) indicated appointment scheduling was available online, about one-third (31%) had email access to their provider, and about half (49%) had access to other services (e.g., test results or prescription refills) online.

Length of Prenatal Visits

We asked mothers how long their average prenatal visit was (including time with their maternity care provider and nurses, but excluding time in waiting rooms). On average, it was 32 minutes, a figure that was somewhat higher for visits with family doctors and midwives (35 minutes each) compared with obstetricians (31 minutes) ($p < .01$).

Number of Prenatal Care Providers

The majority of women always or almost always (78%) saw the same maternity caregiver for their prenatal care. One in five (22%) women, however, reported that two or more people took the lead in providing their prenatal care.

Barriers to Communication with Prenatal Care Providers

We asked mothers about their interactions with their providers during prenatal care. First we asked if mothers ever held back from asking a question because their provider seemed rushed, and three in ten (30%) said they did at least once. We also asked if they held back because they wanted maternity care that differed from what their provider wanted, and one in five (22%) held back at least once for that reason. Finally, we asked if mothers ever held back on questions and concerns because their prenatal care provider might think that they were being difficult, and 23% held back at least once for that reason. Similarly, about one in six (15%) respondents reported that their prenatal care provider "always" or "usually" had used medical words that they did not understand, a rate that was much higher for family doctors (25%) than obstetricians (13%) or midwives (6%) ($p<.01$). They also reported their provider had "sometimes" or "never" encouraged them to talk about all of their health questions or concerns (21%), spent enough time with them (20%), and answered all of their questions to their satisfaction (16%).

"I always felt like my OB had to rush to the next appointment, and she was booked pretty solid."

Group Prenatal Care
One in five mothers (22%) indicated that at least one of their prenatal visits involved meeting with their provider in a group with other pregnant women. Thirteen percent of those mothers – and 3% of mothers overall – indicated that their visits "usually" or "always" involved group care. Among those mothers who had at least one prenatal visit using group care, 32% rated it "excellent," but among those saying they "usually" or "always" received prenatal care in a group, 61% rated the care as "excellent."

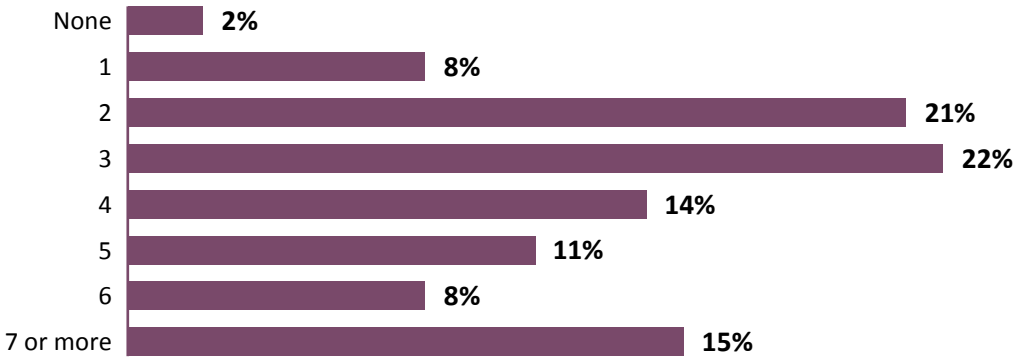
Gestational Diabetes
We asked if a provider had told the mothers that they had chronic or gestational diabetes. Nine percent indicated they had been diagnosed with chronic diabetes prior to pregnancy, and 11% were told during their pregnancy they had gestational diabetes.

Ultrasounds
Virtually all mothers (98%) indicated they had had at least one ultrasound during their pregnancy, with a majority (70%) having three or more, and 23% having six or more (Figure 3).

"Some ultrasound techs … explained what you were seeing on the screen and others were all business…. I wanted the tech to talk to me and help me get the full experience of my baby."

Figure 3. Number of pregnancy ultrasounds

Base: all mothers *n=2400*



Two-thirds (68%) of study participants reported that an ultrasound was used near the end of pregnancy to estimate the weight of their fetus at that time, with an average estimate of 6 lbs 10 oz. In 9% of these cases, estimated fetal weights was greater than 8 lbs 14 oz (4000 grams), a standard used to define large ("macrosomic") babies. As it turned out, 63% of the babies estimated to be large were in the macrosomic range at birth, and nearly four in ten were in the normal weight range. Likewise, in 23% of cases, babies were estimated to be in the low birthweight range (less than 5 lbs 9 oz, or 2500 grams) at the time of their last ultrasound for weight. Of these, 29% were actually low birth weight at birth, and seven in ten were in the normal weight range.

Change of Due Date
Slightly more than one in four mothers (26%) indicated that their prenatal care provider changed their due date as they neared the end of their pregnancy. Family doctors (52%) were the most likely to change the due date compared with obstetricians (24%) and midwives (15%) ($p < .01$). In those cases when they did change the date, 66% of the time it was to an earlier due date, and 34% to a later date.

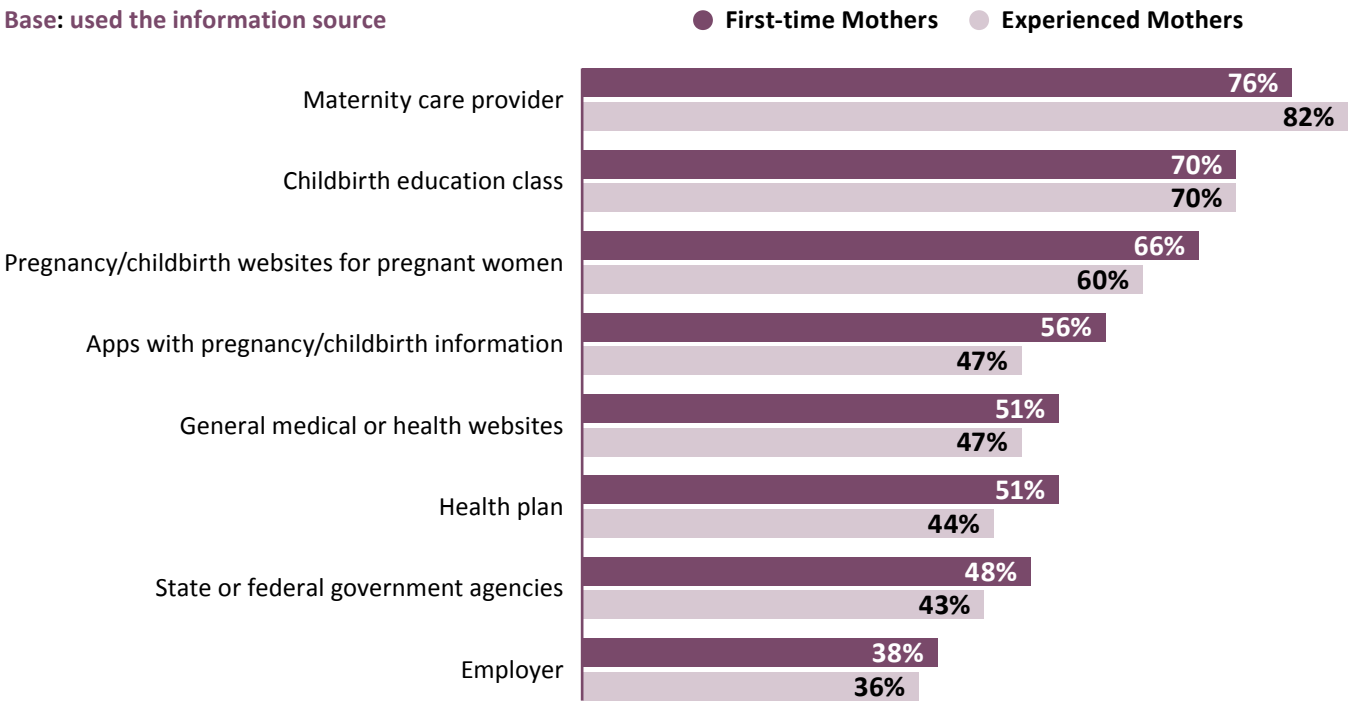
Sources of Information about Pregnancy and Birth

Ratings of Sources of Information

Mothers were asked to rate how valuable a number of sources of information about pregnancy and childbirth were to them during their pregnancy (Figure 4). Among those who used the respective sources, greatest proportions cited their maternity care provider as "very valuable" sources of information in both first time (76%) and experienced (82%) mothers, followed by childbirth education classes and pregnancy/childbirth websites. There was generally little distinction between first time and experienced mothers in their ratings, except in the case of "apps" with pregnancy and childbirth information, which were rated more highly by first-time mothers (56% "very valuable") than experienced mothers (47%) ($p < .01$).

"I can't emphasize enough how important it is that I EDUCATED myself. … what I saw in movies/TV shows … is not accurate…. Women … should LEARN everything they can … and find a practice/hospital that will respect their choices…. Such practices exist!"

Figure 4. Mothers' ratings of sources of pregnancy and childbirth information used during recent pregnancy as "very valuable," by childbearing experience



We asked all participants how they would rate the trustworthiness of 11 possible sources of information about pregnancy and childbirth (Figure 5). One's maternity care provider received the strongest ratings by far, with 47% identifying that person as "completely trustworthy" and an additional 33% as "very trustworthy." Childbirth education classes, one's health plan, and general medical or health websites received the next highest ratings of trustworthiness.

We asked all participants about their use at least once a week of various electronic devices with Internet connections (Table 2). The women reported high rates of access,

"Read lots of books, gather information, find positive birth stories, figure out what works for you…. Educate yourself, get support."

often through multiple devices, with just 1% saying that they used none of these in a typical week. We asked those with access to each device how they would rate it as a source of information about pregnancy and childbirth. Laptops or desktops and tablets had highest ratings, followed by smartphones and the iPod Touch.

Figure 5. Mothers' ratings of trustworthiness of possible sources of pregnancy and childbirth information

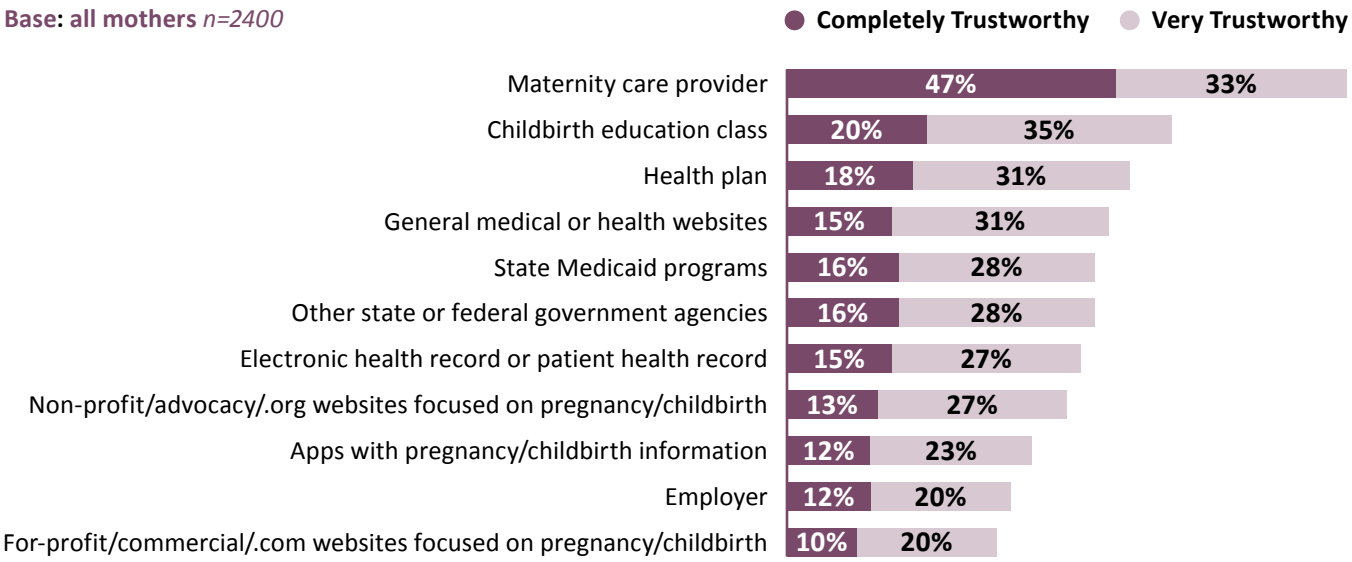


Table 2. Electronic devices used by mothers at least once during a typical week, and ratings of devices as source for information about pregnancy and childbirth

(choose all that apply)

Device	% Using during typical week Base: all mothers *n=2400*	Of those using, % rating as an "excellent" source Base: varies
Laptop or desktop computer with Internet access	**82%**	**64%**
Smartphone with Internet access	**64%**	**43%**
Tablet computer with Internet access	**35%**	**46%**
Regular mobile phone with text messaging capability and Internet access	**33%**	**22%**
iPod Touch with Internet access	**21%**	**42%**
Used none of the above in a typical week	**1%**	**n.a.**

Two in three mothers (67%) signed up to receive emails "weekly or so" providing information about pregnancy and childbirth. Just over one in four (27%) mothers signed up with short message services to receive regular text messages about pregnancy and childbirth topics. Of those, 63% (17% of all mothers) reported that the text messages were from the Text4baby program.

Childbirth Education

Overall, one-third (34%) of women reported taking childbirth education classes during their recent pregnancy, though this varied widely, with a majority of new mothers (59%) taking classes while only one in seven (17%) experienced mothers took classes (Table 3). In the case of experienced mothers, almost one-third (32%) who did not take them this time had taken classes in an earlier pregnancy. Combining these figures, we can say that half (53%) of all mothers reported taking a childbirth education class at some point.

"Educational classes have been a big part of all three of my pregnancies. It gives a sense of community and support that is well worth the fee. I not only learned more about how to prepare myself for the next pregnancy, but made lifelong friends."

We asked mothers about the timing and focus of their classes. Only half of the mothers (49%) reported taking classes in the format that had been most common in the past – weekly classes spread over multiple weeks, with the remainder reporting their classes were done in one (24%) or two (26%) days. The most commonly cited "major focus of classes" was the labor and birth process (51%) followed by "what to expect when giving birth in the hospital" (29%), while 20% reported the major focus of their classes was "care options and benefits and harms of each." The emphasis on "what to expect in the hospital" was most likely in the one-day classes (39%) ($p < .01$).

Table 3. Childbirth education class participation in current and any past pregnancies, by childbearing experience

Base: all mothers	First-time mothers* *n=977*	Experienced mothers *n=1423*	All mothers *n=2400*
Yes, in current pregnancy	**59%**	**17%**	**34%**
No, not in current pregnancy	**41%**	**83%**	**66%**
No, not in current pregnancy, but took classes before	**n.a.**	**32%**	**19%**
No, never took classes	**41%**	**51%**	**47%**

*$p < .01$ for difference between first-time and experienced mothers

Use of WIC and Other Services

We asked mothers if they had participated in WIC, the Special Supplemental Nutrition Program for Women, Infants and Children, during their pregnancy. Half (51%) indicated that they had. Of those mothers reporting they received WIC services during pregnancy, 23% indicated they were already receiving those services when they became pregnant, while an additional 44% began during the first four months of their pregnancy.

"The help from my health care providers as well as from WIC is greatly appreciated."

We also asked all mothers if they felt they needed any of four specific ancillary services during their recent pregnancy: support to buy food; treatment for depression, help to quit smoking, or nutrition counseling. While a minority of mothers felt that they had needed such services, most who needed them did receive them (Table 4), with mothers who sought help to quit smoking least likely (60%) among these four problems to have received help.

Table 4. Mothers' needs in pregnancy for selected services, and whether the service was received

Service	% felt they needed service *n=2400*	Of those who felt they needed it, % receiving service *n varies*	% of all mothers receiving service *n=2400*
Food stamps, WIC food vouchers, or money to buy food	**48%**	**90%**	**43%**
Counseling for nutrition	**24%**	**81%**	**20%**
Treatment for depression	**15%**	**70%**	**11%**
Help to quit smoking	**11%**	**60%**	**7%**

2. Women's Experiences Giving Birth

Quite a bit happens to women and their newborns during the relatively brief phase of care from the end of pregnancy to the end of the childbirth hospital stay. A number of survey questions were designed to help us characterize these experiences. Several labor and birth questions were included in our follow-up survey directed to the same women, and are reported in an appendix to the companion report, *Listening to Mothers[SM] III: New Mothers Speak Out*.

"The best thing for me was being treated like I was an integral part of my own care. The nurses and doctors talked to me as if I knew what was going on and that my opinion mattered. They really listened to me and were very helpful to me in achieving what I wanted to during and after the birth of my baby."

"I ... dealt with difference of opinion in my exhaustion during labor and ... felt that much of my labor had been forced into a direction opposite of what I wanted."

Type of Caregiver Who Was the Primary Birth Attendant

Obstetricians were the primary caregivers attending the births of most (70%) of our respondents, while family physicians were birth attendants for another 6%. An additional 7% of mothers reported a doctor as the birth attendant, but did not know the specialty. One out of 10 women (10%) reported that a midwife attended her birth, while in about 5% of cases, mothers reported the primary birth attendant was a nurse who wasn't a midwife. A physician assistant attended 1% of births.

We asked about the gender of the birth attendant, and 61% were female, while 39% were male. There was wide variation by type of birth attendant, with 94% of midwives, 75% of family doctors, and 54% of the obstetricians being female. Among those who said that having a female provider was a "major factor" in their choice of prenatal provider, 78% had a female birth attendant (85% for those on private insurance).

We also asked mothers if the person who was their primary birth attendant had been their primary prenatal provider, and in the clear majority of cases (64%), it was. For nearly one in three women, however, it was someone she had either met briefly (12%) or had never met (21%). About two-thirds (67%) of the cases of births attended by nurses who weren't midwives or by physician assistants involved someone who was unfamiliar to the mother.

Labor Induction

We asked mothers if they themselves had tried to cause their labor to begin, and 29% indicated that they had. More than four out of ten respondents (41%) indicated that their care provider tried to induce their labor. When asked if the induction caused labor to begin, three out of four women experiencing a medical induction (74%) indicated that it did, resulting in an overall rate of medically induced labor of 30%. Overall, half (53%) of mothers experienced medical and/or self-attempts to induce labor.

"To induce my labor I would walk daily and do squats the closer I got to my due date. I wish I wasn't so rushed and didn't induce labor."

By far the most common means of attempted medical induction was the use of synthetic oxytocin (Pitocin), which was used by 63% of those who attempted a medical induction, followed by breaking of membranes with a small tool similar to a crochet hook (39%). About one out of three women with attempted induction had a finger inserted into her cervix to "sweep" or "strip" the membranes loose (35%), and about one out of four reported a prostaglandin gel, pouch, or tablet placed near her cervix (26%). Most mothers who reported an attempted medical induction experienced two or more of the methods, the most common combination being the use of synthetic oxytocin and breaking of membranes (28% of attempted medical inductions).

The mothers reported that their caregivers had tried to induce labor for both medical and non-medical reasons. Mothers could select more than one response (Table 5), and the leading reason mothers cited was baby was full term (44%), followed by the mother wanting the pregnancy to be over (19%), a care provider's concern that she was "overdue" (18%), and a maternal health problem that required the induction (18%).

Notable were large proportions choosing non-medical reasons, including matters of convenience, and concerns about a potentially large baby, which is not supported by best evidence as a reason to induce labor. Those mothers who cited a provider concern with the size of their baby (16%) gave birth to a baby that weighed on average 7 lbs 15 oz, compared with those mothers who did not cite this factor and gave birth to babies weighing on average 7 lbs 6 oz. Those mothers who cited being "overdue" as a reason for an attempted medical induction gave birth on average at 39.9 weeks, while those mothers who did not cite this gave birth at 39 weeks on average, a difference that was not statistically significant. Those mothers who cited "wanted to get pregnancy over with" had on average the same length of pregnancy (39.5 weeks) as those who did not cite it.

"I had a relatively healthy pregnancy but was diagnosed with gestational diabetes. It was well controlled up until the end when my sugars started getting higher and even with controlled diet were still rising, which is why my doctor decided to induce."

"I think caregivers are too quick to induce labor once a mother hits 39 weeks because it is more convenient for them. I think they are more concerned with their schedule than the health and well being of the mother and baby."

"I kept pushing to have an induced labor cause during my pregnancy I was miserable and in pain with horrible migraines. I had a healthy pregnancy and did not see why it would be a problem to induce labor."

Table 5. Reasons why mothers experienced medical induction

(choose all that apply)
Base: care provider tried to induce labor *n=991*

Baby was full term/close to due date	**44%**
Mother wanted to get pregnancy over with	**19%**
Care provider was concerned that mother was "overdue"	**18%**
Maternal health problem that required quick delivery	**18%**
Care provider was concerned about the size of the baby	**16%**
Water had broken and there was a concern about infection	**12%**
Mother wanted to control timing of birth for work or other personal reasons	**11%**
Care provider was concerned that amniotic fluid around the baby was low	**11%**
Care provider was concerned that baby was not doing well	**10%**
Mother wanted to give birth with a specific provider	**10%**
Some other reason	**10%**

Supportive Care During Labor and Help with Labor Pain

Individuals Who Provided Supportive Care During Labor
While in labor or giving birth, almost all women (99%) reported having received some type of supportive care. This care may have included helping to make them more comfortable physically, providing emotional support, and providing information. Typically, a husband or partner (77%) or the nursing staff (46%) provided this type of support. In about one-third of the cases it was provided by another family member or friend (37%), a doctor (31%) or, much less frequently, by a midwife (10%), a doula (trained labor assistant) (6%), or some other person (3%).

"The best part was all the female nurses … helping me get through it and telling me I could do it."

We asked mothers their marital status at the time of the birth, and 60% reported that they were married, 32% unmarried with a partner, and 7% unmarried with no partner. Of those mothers who were unmarried with no partner, 62% reported having a friend or family member with them in labor. We also asked mothers about the race/ethnicity of their infant's father, and the breakdown was similar to that of the mother's, with 56% non-Hispanic white, 18% non-Hispanic black, 22% Hispanic and 5% other non-Hispanic. In the large majority of cases (81%), the race ethnicity of the mother and father were concordant, a figure that did not vary greatly whether the parents were married (83%) or unmarried partners (80%). Non-Hispanic white fathers were most likely to have been supporting mothers in labor (83%), followed by Hispanic fathers (73%), and non-Hispanic black fathers (68%) ($p < .01$).

"After 20-some hours, I was worried I'd have to have a C-section…. I asked one of the nurses, and she took my shoulder gently and looked me in the eye and said, 'We'll deliver this baby vaginally. I promise'. Then she and my midwife put hot packs on my back and cold packs on my abdomen to encourage the baby to turn around. My baby made her appearance – vaginally – within an hour. I think the nurse's reassurance and confidence was a big factor in my ability to stick with the contractions and push after nearly 30 hours."

Access to Supportive Care
While 31% of women who identified an obstetrician as their primary birth attendant felt that they had received supportive care in labor from a physician, 45% of women whose birth attendant was a family physician felt that they had received such care from a physician, and 54% of women whose birth attendant was a midwife felt that they had received supportive care from a midwife. Eighty-six percent of women with a husband or partner felt that they received supportive care during labor from their husband or partner. For those married mothers whose partners did not provide support, 13% reported using a doula.

Knowledge of Doulas (Trained Labor Assistants)
Although only a small minority of women (6%) actually received supportive care from a doula (a trained labor assistant) during labor, three out of four women (75%) who did not receive care from a doula had heard about this type of caregiver and care, including a majority (59%) who said that they had had a clear understanding of this type of caregiver and care. We also asked mothers who did not use a doula in their recent birth and who had a clear understanding of this type of caregiver and care if they would have liked to have had the care of a doula, and one in four (27%) indicated she would have liked to have had doula care, a figure that was comparable for mothers who had a vaginal or cesarean birth.

"I was allowed to labor with my doula and husband relatively undisturbed for 36 hours in the hospital."

"I wish doulas were covered by insurance."

Use of Pain Medications
While 17% of mothers reported using no pain medication, the vast majority (83%) used one or more types of medication for pain relief for at least some of the time while giving birth (Figure 6). Epidural or spinal analgesia (67% of all women) was, by far,

"I did not like all of the effects of the epidural – I didn't know what they would be."

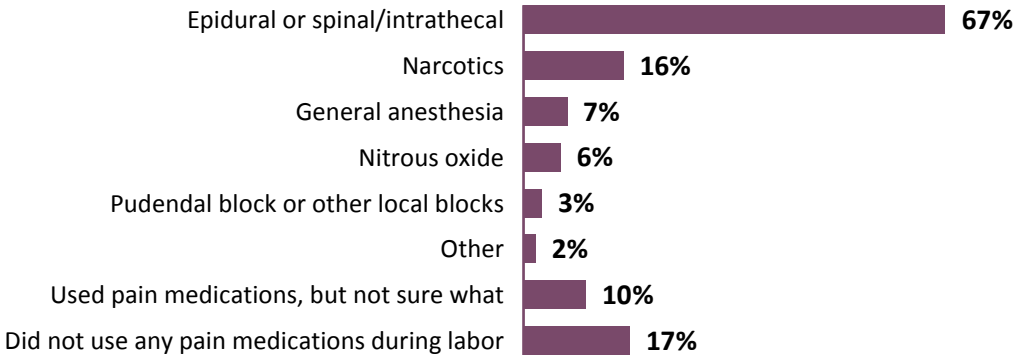
the most common form of medication used in both vaginal (62%) and cesarean (80%) births. One out of six women (16%) reported they were given narcotics such as Demerol or Stadol, while a small proportion underwent general anesthesia (7% overall, and 13% of women with cesareans), used nitrous oxide gas (6%), or had pudendal or other local block injections (3%). A small proportion of mothers (10%) indicated that they had used pain medications but weren't sure what they were. One in ten mothers (10%) reported receiving both a narcotic and epidural or spinal analgesia.

"The epidural worked wonders and helped with the pain and made my delivery easy."

"The worst part of my experience was feeling the pressure to get an epidural. I definitely will not get one next time. It causes more problems than it's worth."

Figure 6. Mothers' use of pain medications

(choose all that apply)
Base: all mothers *n=2400*



Effectiveness of Epidural or Narcotics for Labor Pain Relief
Epidurals or spinals were rated very positively as a means of pain relief, with nine out of ten (92%) women who had an epidural or spinal considering it to be "very helpful" (77%) or "somewhat helpful" (15%) in making them more comfortable and relieving their pain, and only 3% rating it as "not helpful at all." Seventy-six percent of those using narcotics (e.g., Demerol or Stadol) rated them as at least "somewhat helpful."

Use of Drug-Free Methods for Labor Pain Relief
Women who experienced labor used a variety of drug-free methods to increase comfort and relieve pain (Figure 7). Fully 73% used at least one non-pharmacologic method of pain relief, though none of the techniques were used by a majority of mothers.

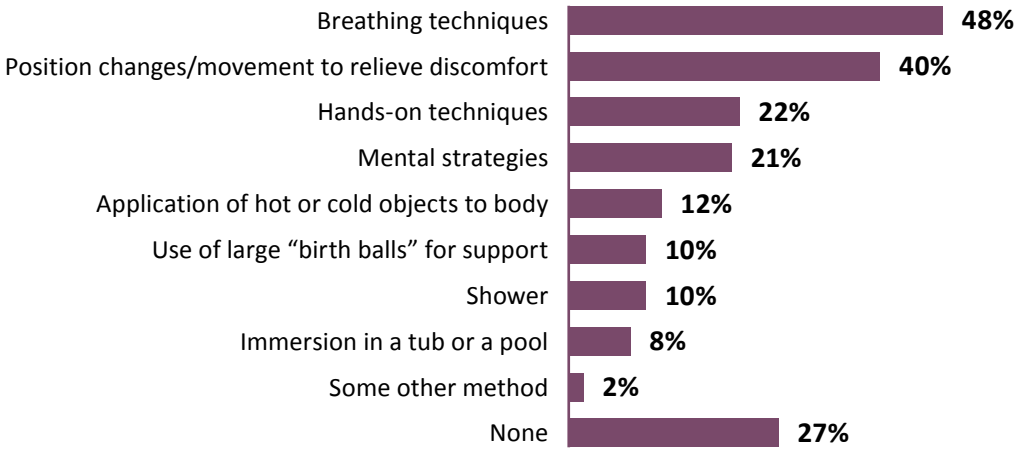
"Doing it without drugs makes you feel like you can do anything."

Almost half (48%) used breathing techniques, and 40% used position changes and/or movement to relieve discomfort. One out of five used hands-on techniques such as massage, stroking, or acupressure (22%) or mental strategies such as relaxation, visualization, or hypnosis, (21%). Less frequently used methods included application of hot or cold objects (12%), use of large inflatable "birth balls" (10%), showering (10%), or immersion in a tub or pool (8%). In every case except the use of position change, mothers who had taken a childbirth education class in this pregnancy were more likely to use the drug-free techniques specified.

"I was unhappy with the fact that the hospital staff would not allow me to take a shower while in labor to help ease my pain. It would have made me able to handle the pain more efficiently."

Figure 7. Mothers' use of drug-free pain relief methods

(choose all that apply)
Base: experienced labor *n=2048*



"I would have rather tried to walk around or bounce on a ball to try to get my body to contract naturally to have the baby more naturally."

"I loved the birthing tub."

Augmentation, Episiotomy, and Other Interventions

Women typically experienced a variety of other interventions during labor and birth, regardless of whether or not they experienced a vaginal or cesarean birth (Figure 8). Almost one-third of mothers had a cesarean birth, which is described in greater detail below. As shown in Figure 8, in vaginal births in addition to the high levels of attempted induction and pain medications described above, many mothers reported being given one or more vaginal exams and having intravenous (IV) fluids administered into a blood vessel in their arm. Many mothers with vaginal births also reported receiving the following interventions: synthetic oxytocin (Pitocin) to strengthen or speed up contractions after labor had begun, a catheter to remove urine, membranes broken to release amniotic fluid after labor had begun, an episiotomy, and shaving of pubic hair.

"I had too many vaginal exams and people watching. …. I thought I was getting my cervix checked too frequently and there were some doctors that checked me that had interns with them as well, which made me a little uncomfortable."

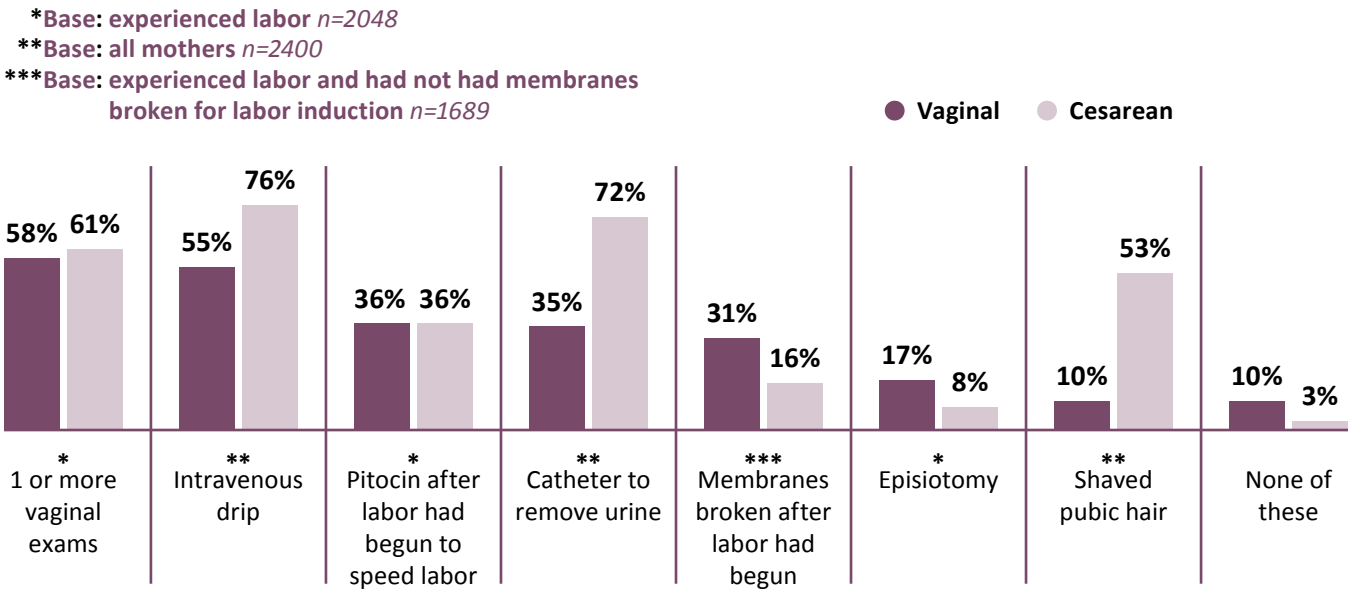
The one-third of mothers with cesarean births experienced a different combination of interventions, including many with an IV, an epidural, a bladder catheter, and shaved pubic hair. Many mothers with cesareans also experienced attempted labor induction and, to speed labor, synthetic oxytocin and/or broken membranes.

"I wish I had more information about Pitocin; in hindsight I feel like they used it too quickly after my water broke."

Overall, 67% had an epidural, 62% of mothers reported being on an IV, 51% had one or more vaginal exams, 47% had bladder catheters, 31% were given synthetic oxytocin to speed up labor, and 20% reported that their membranes had been broken after labor began. In all, to induce and/or speed up labor, 50% of the mothers experienced synthetic oxytocin, and 36% had their membranes broken.

"There is too much inconsistency with maternity care. It depends on where you go and who you are treated by. The care varies too much."

Figure 8. Mothers' experience of selected interventions, by mode of birth



Freedom and Constraint in Labor

Eating and Drinking During Labor
About two in five (40%) mothers (41% among vaginal births, and 35% among cesareans) who experienced labor said that they drank something during labor, and 21% indicated they ate during labor (20% among vaginal births, and 22% among cesarean and births).

"I wish I had been allowed to eat something small. By the time I had the baby, I had been fasting for over 24 hours. I was so hungry that I was extremely nauseous."

Movement During Labor
Two out of five (43%) women in our survey who experienced labor did any walking around once they were admitted to the hospital and regular contractions were well established, with mothers having a vaginal birth (45%) somewhat more likely to have done any walking than those who had a cesarean and had experienced a period of labor (36%).

"They did not suggest that I try to walk around or do anything to try to help the contractions. I just laid in a bed all night, and I did not know enough to suggest walking."

Position Used in a Vaginal Birth
More than two-thirds (68%) of women who gave birth vaginally reported that they lay on their backs while pushing their baby out and giving birth. One-quarter (23%) indicated they gave birth in a propped up (semi-sitting) position, while much smaller proportions gave birth either on their side (3%), upright (e.g., squatting or sitting) (4%), or in a hands-and-knees position (1%).

"I was not allowed to get up and walk around, even go to the restroom, after I had been strapped with the fetal monitor."

"I don't want to be forced to lay on my back during labor."

Dilatation and Average Length of Labor
We asked mothers who did not have a planned cesarean how many centimeters they were dilated when they arrived at the hospital, and the median response was three centimeters dilation. First-time mothers who ended up with an unplanned cesarean were on average less dilated when they arrived at the hospital (2.3 centimeters) compared with those first-time mothers who had a vaginal birth (3.5 centimeters) ($p < .01$).

Women who did not have a scheduled cesarean were asked to estimate the total length of time they were in labor. The average length of labor cited by respondents was 10.3 hours. For mothers with a vaginal birth the median length of labor was 8 hours with an average length of 9.6 hours, while for those mothers with an unplanned cesarean the median was 12 hours with an average of 15 hours. Four out of ten (43%) women reported a labor of six hours or less, and about one in sixteen (6%) was in labor for more than twenty-four hours. Experienced mothers had substantially shorter labors (median of 7 hours) compared to first-time mothers (median 10 hours).

"I was extremely pleased with the receptiveness of medical professionals ... towards my request to give birth ... in an upright squatting position."

"I ... was in a lot of pain. Being on my side helped significantly with the pain, but the nurse would not let me push on my side. My leg also hurt in the stirrup, but she insisted it be in there."

Mode of Birth

Types of Vaginal and Cesarean Births
Data on mode of birth are generally classified into either two categories, vaginal birth (69% in our survey) or cesarean (31%), or are further subdivided based on whether or not a woman's previous birth was vaginal or cesarean, resulting in four possible categories: vaginal birth with no previous cesarean (66% of all births in our survey); vaginal birth after cesarean (VBAC, 2% of all births); primary (first) cesarean (15%), and repeat cesarean (16%). In addition to figures for these categories, the *Listening to Mothers III* survey allows further breakdowns according to whether or not the vaginal birth involved vacuum extraction or forceps (an "assisted" or "instrumental" birth) and whether or not the cesarean birth was planned (took place before labor) or unplanned (took place after some period of laboring with the intention of giving birth vaginally) (Table 6).

Eighty-five percent of mothers with a vaginal birth reported having an unassisted vaginal birth. Nearly all of the cases of assisted vaginal births (90%) were to mothers without a prior cesarean. Overall, 58% of all mothers had a "spontaneous" vaginal birth without vacuum extraction or forceps.

Table 6. Mode of birth

Base: all mothers *n=2400*

	Vaginal 69% *n=1656*	
	Vaginal/no previous cesarean 66%	**Vaginal birth after cesarean (VBAC) 2%**
Unassisted	**57%**	**1%**
Vacuum or forceps assisted	**9%**	**1%**
	Cesarean 31% *n=744*	
	Primary (first) cesarean 15%	**Repeat cesarean 16%**
Unplanned	**9%**	**3%**
Planned	**6%**	**12%**

Percent is proportion of all respondents

"I felt bad because the doctor delivering my baby didn't give me details. He just told me my baby was in danger and that I needed a c section. I believed him because I care about my baby."

The almost one-third (31%) of all births that were cesareans were mostly either unplanned first-time (primary) cesareans (9% of all births) or planned repeat cesareans (12% of all births). The planned primary cesareans do not typically represent the mother's choice in the absence of a medical rationale, but rather a pre-existing condition (e.g., breech presentation) that led to the decision to plan a cesarean, a point we explore further below. Among those mothers with a primary cesarean, two-thirds (66%) spent some time in labor before having the cesarean, while among repeat cesareans, two out of five women (40%) did.

"Although I had scheduled a cesarean, I went into labor 3 weeks early and had the option to deliver vaginally. I was grateful there was no pressure to deliver with a repeat cesarean."

Vaginal Birth After Cesarean (VBAC)

Among only those women who had had a cesarean in the past, 14% had a vaginal birth after cesarean for the most recent birth, while 86% had a repeat cesarean. We asked women with a previous cesarean about their decision-making relating to a VBAC and found that 48% were interested in the option of a VBAC. When we asked those mothers interested in a VBAC if they were given that option, a majority (54%) of mothers who had a previous cesarean *and* were interested in a VBAC indicated they were given that option and 46% were denied that option. We then asked what reason was given for the denial of a VBAC, and the leading responses were a medical reason unrelated to the prior cesarean (45%), unwillingness of their caregiver (24%), or unwillingness of the hospital (15%). Among those mothers who were interested in a VBAC and had the option to have one, 56% reported experiencing at least some labor and attempted a VBAC before having a repeat cesarean.

"One of the nurses was judgmental about me trying for a VBAC."

"Looking back, I wish I would have tried more for a VBAC. We live an hour and a half away from the hospital where I gave birth so that was a factor in deciding to schedule another C-Section."

Reasons for Cesarean

We asked mothers what the main reason was for their cesarean, and their answers differed substantially depending on whether it was their first or a repeat cesarean (Table 7). Among those with a primary cesarean, responses clustered around four major categories: baby was in the wrong position (16%), fetal monitor reading showed a problem (11%), mother's health condition that called for the procedure (10%), and the baby was having trouble fitting through (10%). Other notable reasons cited were provider concerns that the baby was too big (9%) and an attempted medical induction that did not work (8%). Among mothers who had a repeat cesarean, the overwhelming response (61%) was that the mother had experienced a prior cesarean, followed by concern that the mother had a health condition that called for the procedure (13%). Four percent of mothers with a primary cesarean indicated there was no medical reason for the operation.

"In both of my births I feel like since I wasn't adamant about what I wanted and just followed the typical hospital procedures they "rushed" things and I ended up with c-section."

Table 7. Reasons for primary and repeat cesarean birth

(choose reason that best applies)
Base: had cesarean *n=744*

Primary cesarean *n=368*	
Baby was in the wrong position	**16%**
Fetal monitor showed the baby was having problems during labor	**11%**
I had a health condition that called for procedure	**10%**
Baby was having trouble fitting through	**10%**
Maternity care provider worried that the baby was too big	**9%**
Problem with the placenta	**8%**
Provider tried to induce labor but it didn't work	**8%**
Labor was taking too long	**7%**
Past my due date	**3%**
Afraid to labor and have baby vaginally	**3%**
No medical reason	**4%**
Repeat cesarean *n=376*	
I had had a prior cesarean	**61%**
I had a health condition that called for this procedure	**13%**
Fetal monitor showed the baby was having problems during labor	**3%**
Baby was in the wrong position	**3%**
Provider tried to induce labor but it didn't work	**3%**
Labor was taking too long	**2%**
Provider was worried that the baby was too big	**2%**
Problem with the placenta	**2%**
Baby was having trouble fitting through	**2%**
No medical reason	**3%**

"I was disappointed to need the cesarean since the external version to turn my son did not work."

"I had to have a C-Section because during labor my baby's heart rate was decreasing. And it turns out that my baby was tangled in her umbilical cord."

"I went into labor three days before a scheduled (repeat) c-section. They would not even consider letting me do a vaginal birth. Once there, the ob-gyn literally reached in and pushed the baby back up out of my pelvis so that they could go ahead with the c-section. I really wish that someone would have just encouraged me to deal with the labor and helped me to deliver vaginally knowing my baby was about to be born."

Cesarean Decision Making

We asked mothers to tell us who had made the decision to have a cesarean and when they had made it. Almost two-thirds of mothers (63%) with primary cesareans indicated the doctor was the decision maker, with only 17% saying they were the decision maker, either before (13%) or during (4%) labor. For mothers with a repeat cesarean, the decision typically had been made before labor, by either the provider (47%) or the mother (30%).

"The anger, frustration, and disappointment over never having delivered vaginally is often difficult to deal with."

We asked mothers if, during their pregnancy, they asked their provider to plan for a cesarean delivery, and 22% of mothers indicated they had done so. Of these, the most likely to do so were mothers with a prior cesarean who ultimately had a repeat cesarean (57%). Thirty-six percent of those mothers with a prior cesarean who later had a VBAC reported that they raised the issue with their providers. Of mothers without a prior cesarean who went on to have a cesarean, 33% had raised the issue. Of those without a prior cesarean who discussed it with their providers, about half had some type of medical condition that could lead to a cesarean (e.g., breech presentation, maternal health problem) or they were told by their doctors that the baby might be too big. Of those with a repeat cesarean who raised the issue, most cited their prior cesarean (65%) or a prenatal medical reason (12%) as the reason for the repeat cesarean.

"The attending doctor claimed the baby was stuck. Everything was very rushed. To this day I don't know if this baby was really stuck. I don't know if everything was so rushed because they really were concerned about the baby or they just really refused to do a vaginal birth (after cesarean) no matter what."

Of those mothers who indicated that they asked for a planned cesarean during their pregnancy, a substantial majority (60%) indicated the idea was initially suggested by their provider, a figure that was similar whether mothers had had a prior cesarean or not. When mothers did raise the issue of a planned cesarean, they overwhelmingly did so out of a belief that having a cesarean would offer a health benefit to her or her baby (87%).

"I refused a c-section... because I knew it was not necessary. The doctor on call was not happy about it! I felt relieved when he finally said it was my ultimate decision, but nervous because I felt he used scare tactics."

Rarity of Maternal Choice Primary Cesareans

We combined the reason for cesarean with the question on who made the decision. Just four mothers, or slightly more than 1% of the women with a primary cesarean (unweighted), reported that they had decided before labor and carried through with a planned primary cesarean with the understanding that there had been no medical reason for that procedure. In three of these cases, the mother indicated she had discussed the option during pregnancy, and in one of the three cases the mother indicated that her provider had raised the idea.

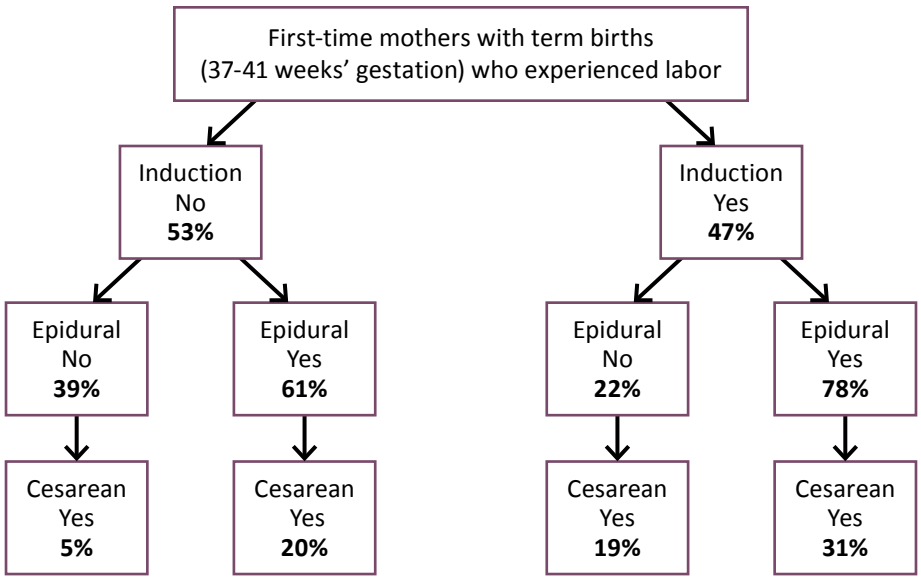
Cumulative Interventions Around the Time of Birth

One way to examine the impact of interventions is to explore the consequences of what has been termed the "cascade of intervention," with one intervention increasing the likelihood of others that may be used to monitor, prevent, or treat its side effects. Figure 9 presents an example of term births to first-time mothers who were not planning a cesarean and thus experienced labor. Of these mothers, 47% experienced an induction. Of those having an induction, 78% had an epidural, and of those mothers who had both an attempted induction and an epidural, the unplanned cesarean rate was 31%. Those who experienced either labor induction or an epidural, but not both, had cesarean rates of 19% to 20%. For those first-time mothers who neither experienced attempted induction nor epidural, the unplanned cesarean rate was 5%.

"The worst thing about the care I received was having to be continuously monitored because I was induced. I would have liked to walk around to relieve my discomfort, but since I was on the monitors I could not. I believe that this contributed to my need for an epidural."

Figure 9. Cascade of intervention in first-time mothers with term births who experienced labor

Base: first-time mothers with term births who experienced labor *n=750*



In this group, which included 85% of first-time mothers, the overall epidural rate was 69% and overall cesarean rate was 21%.

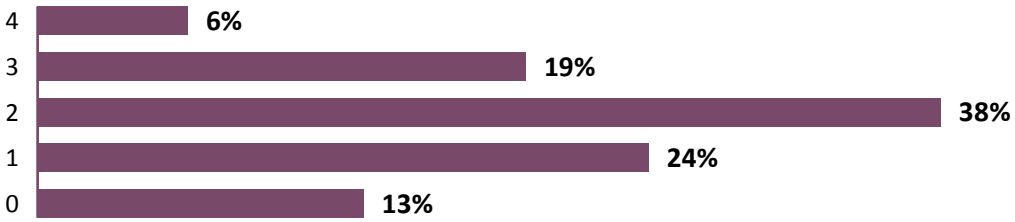
"I had an enjoyable and relatively easy pregnancy.... Labor had to be induced because I was at 40 weeks and labor had not begun on its own. Labor went well until I had an epidural and then the baby began to not respond to the contractions. When the baby didn't respond to the second stress test, the doctor determined a c-section was necessary for the safety of the baby and myself, as I had developed a low-grade fever. It all happened very quickly."

Five interventions used around the time of labor and birth have been found to have many possible impacts on women and newborns: attempted medical induction, epidural analgesia, labor augmentation, assisted delivery, and cesarean section. In the primarily healthy population of women and newborns, we found that just 13% had none of these, and 6% had four. More than six in ten mothers (63%) had two or more of these interventions (Figure 10). As the questionnaire asked mothers with vaginal births, but not mothers with cesarean births, whether they had experienced use of vacuum extraction or forceps, our analysis could not identify women who might have experienced all five interventions, with attempted assisted delivery followed by a cesarean birth.

"The induction took much longer than expected. I was not happy about being induced since the medicine did not have the desired effect. I ended up with an epidural due to the length of labor and the fact that I was exhausted."

Figure 10. Mothers' frequency of experiencing major interventions around the time of labor and birth

Base: all mothers *n=2400*



Enumerated interventions are attempted medical induction, epidural analgesia, labor augmentation, assisted delivery, and cesarean section

"My nurse midwife ... protected the process of birth that we both have/ had immense respect for. I stand in awe of how beautiful my birth was."

"Several hours into the induction and things just not progressing and the baby's heart rate started dropping every time they upped the pitocin. My doctor said he thought we should go to the cesarean, but left the choice to my husband and I. We decided to go ahead with it."

In the Hospital After the Birth

Baby's Location Just after Birth and for Remainder of Hospital Stay

Nearly half of mothers said that during the first hour after birth, her newborn was mainly in her arms (47%), and about one in seven indicated the new baby was mainly in her husband or partner's arms (16%). One-third of all babies were primarily with hospital staff during this period, some because of the need for special care (8% overall), but most for routine care (26%). The method of birth had a major impact, since among vaginal births, 57% of the time the baby was in the mother's arms immediately after birth, compared with 25% when the mother had a cesarean ($p < .01$).

Almost three in five (58%) mothers reported that the first time they held their baby, they were skin-to-skin with no clothing, blanket or diaper between the two of them. Among mothers who told us that the baby had been mainly in their arms in the first hour after birth, 70% reported initial skin-to-skin contact.

Over half (60%) of women said that after the first hour of birth, their baby stayed with them all of the time (typically termed "rooming in") for the rest of the hospital stay. This figure rises to 64% when we exclude cases where the baby was in the neonatal intensive care unit (NICU). One out of four women (26%) said that her baby stayed with her during the day, but was in the nursery at night, and one out of fourteen (7%) that her baby stayed primarily in the NICU. The remaining cases were split between the baby being with the mother mainly for feedings (5%) or generally in the nursery (2%). Even when we limit our analysis to cases where the baby was not in the NICU, the method of birth was not strongly related to rooming in, with 62% of mothers with a vaginal birth reporting rooming in compared with 54% among cesareans.

"I was extremely pleased with ... allowing me to bond with my child immediately after birth.... I wanted to experience him post-birth as he was born into this world, and they allowed me that. No blankets, no rub downs, no hats; it was amazing."

"Did not get to hold baby for 30 minutes because of routine tests even though NOTHING was wrong with baby."

"The hospital only offered rooming in unless your baby was in NICU."

"Nurses were interfering with my bonding with my baby trying to hold her and take her to the nursery."

A total of 18% of mothers reported that at some time after their baby was born, it spent time in a neonatal intensive care unit (NICU). This was somewhat related to mode of birth, with 28% of babies born by primary cesarean spending at least some time in a NICU, while the comparable figures were distinctly lower for VBAC (16%), repeat cesarean (15%), and vaginal births that were not VBACs (16%) ($p < .01$).

"Once our son was taken to the NICU. We were not allowed to take him back to the regular hospital room, even though what they originally thought was wrong with him turned out to not be the case. It seriously hindered our bonding time with our new baby and dampened our birthing experience."

Newborn Feeding

As women neared the end of their pregnancies, more than half (54%) hoped to breastfeed exclusively, while one out of four (27%) planned to use a combination of breastfeeding and formula, and 19% planned to use formula only.

Two-thirds of mothers (66%) reported that the hospital staff, on the whole, encouraged breastfeeding. *Of those mothers who intended to exclusively breastfeed*, 49% were given free formula samples or offers, 37% of their babies were given pacifiers by staff, and more than a quarter (29%) were given formula or water to supplement their mother's breast milk during the hospital stay (Table 8). About two-thirds (65%) of mothers who intended to exclusively breastfeed primarily kept their babies in their rooms ("rooming in") during the hospital stay.

"The staff ... helped me quite a bit getting my son to breastfeed. They never offered a bottle when I told them I wanted to only breastfeed. They also never offered a pacifier when we decided not to use one."

One week after giving birth, half (50%) of the mothers reported feeding their babies breast milk only, including 76% of mothers who had intended as they came to the end of their pregnancy to breastfeed their baby exclusively. A small proportion of mothers, mostly non-Hispanic black women who intended to combine breast and formula feeding, had switched to exclusive breastfeeding at one week.

Table 8. Hospital support for breastfeeding, by mothers' feeding intention at end of pregnancy

(choose all that apply)

	Intended to exclusively breastfeed *n=1364*	**Intended to mix breast and formula feeding** *n=609*	**Intended any breast-feeding** *n=1973*
Helped you get started breastfeeding when you and your baby were ready	**81%**	**76%**	**79%**
Encouraged you to feed on demand*	**69%**	**59%**	**66%**
Baby roomed in*	**65%**	**57%**	**62%**
Showed you how to position your baby to limit nipple soreness	**64%**	**64%**	**64%**
Told you about breastfeeding support resources in the community	**53%**	**47%**	**51%**
Gave you free formula samples, coupons, or offers*	**49%**	**62%**	**53%**
Gave baby a pacifier*	**37%**	**47%**	**40%**
Provided formula or water to supplement breast milk*	**29%**	**53%**	**37%**

*$p < .01$ for difference between mothers who intended to exclusively breastfeed and those who intended to mix formula and breastfeeding

Experience in Hospital

We asked mothers whether they had ever felt poorly treated in the hospital for any of three reasons, and the results are summarized in Table 9 below. Fewer than 10% of mothers reporting poor treatment "usually" or "always" for any of the reasons.

"I think the nurses in the hospital are what really make the experience."

Table 9. Mothers' experience of discrimination during childbirth hospital stay

During your recent hospital stay when you had your baby, how often were you treated poorly because of...?:

Base: all mothers *n=2400*	**Never**	**Sometimes**	**Usually**	**Always**
Your race, ethnicity, cultural background, or language	**86%**	**8%**	**3%**	**3%**
Your health insurance situation	**84%**	**8%**	**5%**	**4%**
A difference of opinion with your caregivers about the right care for yourself or your baby	**80%**	**11%**	**6%**	**3%**

Perhaps not surprisingly, non-white mothers were much more likely to indicate concerns with treatment because of their race, ethnicity, cultural background, or language. Non-Hispanic black mothers responded "sometimes," "usually," or "always" to that question 21% of the time compared with 19% for Hispanic mothers and 8% for non-Hispanic white mothers ($p < .01$). Likewise, 47% of mothers who were paying for their delivery out-of-pocket reported poor treatment at least sometimes compared with 17% of mothers on public insurance and 11% on private insurance ($p < .01$).

"I heard one of the nurses insult me because of my race out in the hallway. It deeply angered me and bothered me throughout the entire experience."

Baby's Birthweight and Gestational Age

On average, mothers reported that their newborn's birthweight was 7 lbs 5 oz. Eight percent of the newborns were in the low birthweight range (less than 5 lbs 9 oz, or 2500 grams), and 11% weighed 8 lbs 14 oz or more at birth (4000 grams), a standard frequently used to define large babies. In terms of gestational age, 3% of the babies were born at a gestational age of less than 34 completed weeks, 6% at gestational age 34-36 completed weeks, 19% at 37-38 completed weeks, 63% at 39-40 weeks, 6% at 41 weeks, and 2% at 42 completed weeks or more.

"We had a preemie and it was tough tough tough. Wish we had support when we came home."

3. Home with a New Baby

Being pregnant, giving birth, and becoming a new parent present challenges to many women. As described in the previous section, most women experience a range of consequential surgical and other interventions while in labor and giving birth. We developed a series of questions to understand how the mothers were doing physically and emotionally in the postpartum period as they recovered from birth experiences, continued to undergo physical changes, and took on new responsibilities. We asked mothers about new physical problems that they had not previously experienced and about the degree to which pain had interfered with daily activities. We also included a postpartum depression screening tool, and asked about mothers' consultation for mental health concerns. We also explored their maternity care in the postpartum period and infant feeding experiences.

As noted in the Introduction, Childbirth Connection sponsored an additional survey following up with the same mothers who participated in the survey reported here. The main postpartum results from that survey (covering additional topics, including additional new-onset maternal morbidity, childcare and employment, and health status over a longer period of time after the birth), along with the women's views on various topics, will be presented in a separate report in 2013.

"It would be nice for the mom to have a visit within 2 weeks of giving birth with a care provider. I had so many questions about my own body. We had 3 appointments for the baby before I had my 1 appointment with my doctor. 6-8 weeks was too long in my opinion."

Maternity Care in the Postpartum Period

"A home visit to women who have recently given birth and have opted to breastfeed should be mandated."

Postpartum Office Visits

Almost all (90%) women had at least one office visit with their maternity caregiver between the time they left the hospital and 8 weeks after the birth of their child. One-third (34%) had one office visit, approximately one out of four (28%) had two visits, and three in ten (29%) had three or more visits.

During those office visits, one in three (36%) providers inquired about verbal or physical abuse, and nearly two-thirds (63%) asked about depression.

"I promised myself … that I would breastfeed for a full year and I have only 14 days left. I think I did pretty well and I will do it the next time around too."

Breastfeeding

"The lactation consultant provided great information about breastfeeding and how to use a breast pump when I returned to work. I was able to breastfeed for 10 months because of the support I received from her."

A week after giving birth, 50% of mothers were breastfeeding exclusively, 24% fed their babies formula alone, and 26% combined the two (Table 10). Among mothers who had given birth at least seven months earlier, 29% met the international standard of exclusive breastfeeding for at least six months. (This figure was obtained by combining data from two questions: mothers who were still exclusively breastfeeding and had given birth at least six months earlier were added to those who were no longer

exclusively breastfeeding but reported having done so for at least six months.) Table 10 presents a different breakdown, looking at mothers by three-month periods, and illustrates the changing pattern of infant feeding across these postpartum periods.

"I feel that hospitals should not be so quick to give formula and formula samples to new moms."

Table 10. Infant feeding intention at end of pregnancy and actual feeding practice from 1 week to 12+ months after birth

	Feeding method		Current feeding method (months since birth)				
	Intention at end of pregnancy *n=2400*	**One week** *n=2400*	**0-3 months** *n=12*	**4-6 months** *n=340*	**7-9 months** *n=522*	**10-12 months** *n=458*	**12+ months** *n=1015*
Breast only	**54%**	**50%**	**50%**	**20%**	**13%**	**7%**	**7%**
Formula only	**19%**	**24%**	**50%**	**32%**	**23%**	**23%**	**11%**
Both	**27%**	**26%**	**0%**	**16%**	**7%**	**4%**	**10%**
Solid food, with any of above or alone	**n.a.**	**n.a.**	**0%**	**32%**	**57%**	**66%**	**72%**

Physical Well-Being in the Postpartum Period

Mothers' Pregnancy Weight Gain and Postpartum Weight

We asked mothers to report their weight at three different time periods: at the time they became pregnant, at the time of birth, and at the time of the survey. Since we also asked the mother's height, we were able to calculate Body Mass Index (BMI) and compare the results for our mothers against standardized tables that allow the BMI to be categorized into one of four groups: underweight, normal weight, overweight, and obese. The results are presented in Table 11, with one-fifth (20%) of the mothers classified as "obese" when they became pregnant and another fourth (24%) were "overweight" as they began their pregnancy. These figures are both different than 2005 BMI categories we reported in *Listening to Mothers II*, when the comparable pre-pregnancy total for obesity and overweight was 51%. In the postpartum period when respondents completed the current survey, half of the mothers (52%) were overweight or obese, a finding that was largely consistent, regardless of how much time had passed since the birth. Mothers reported gaining, on average, 24 lbs during their pregnancy.

"I appreciate when my midwife and nurses don't assume the worst because I am overweight. All of my pregnancies have been healthy and natural births. No high blood pressure or gestational diabetes. Don't judge a book by its cover."

"Postpartum weight has left me a bit self-conscious about my body."

The findings on weight varied substantially by race/ethnicity, with black non-Hispanic mothers more likely to report a body mass index of obese (27%) just before becoming pregnant, compared with Hispanic (20%) or white non-Hispanic mothers (19%) ($p < .01$). Weight gain in pregnancy was highest among non-Hispanic white mothers (26 lbs), and lower among Hispanic (21 lbs) and non-Hispanic black (19 lbs) mothers ($p < .01$). Non-Hispanic black mothers generally reported losing less weight (10 lbs) postpartum compared with Hispanic (12 lbs) and non-Hispanic white (21 lbs) mothers ($p < .01$). The result was that black non-Hispanic mothers were more likely to report a current BMI in the overweight and obese range (63%) compared with white non-Hispanic (46%) or Hispanic mothers (60%) ($p < .01$).

Table 11. Mothers' body mass index (BMI) and pregnancy weight gain, 2011-12 and 2005

	***Listening to Mothers III* (2011-12)** *n=2400*			***Listening to Mothers II* (2005)** *n=1573*	
Base: all mothers	**BMI at beginning of pregnancy**	**Median pregnancy weight gain**	**BMI at time of survey**	**BMI at beginning of pregnancy**	**Median pregnancy weight gain**
Underweight (BMI <18.5)	**9%**	**24 lbs**	**5%**	**4%**	**34 lbs**
Normal weight (BMI 18.5 – 24.9)	**48%**	**26 lbs**	**42%**	**46%**	**33 lbs**
Overweight (BMI 25.0 – 29.9)	**24%**	**25 lbs**	**26%**	**26%**	**31 lbs**
Obese (BMI 30.0+)	**20%**	**17 lbs**	**26%**	**25%**	**22 lbs**
Median weight gain in pregnancy		**24 lbs**			**30 lbs**
Median weight loss postpartum		**20 lbs**			**22 lbs**

We asked mothers what their weight was at the time of the survey and used that to calculate the average weight loss after birth (20 lbs), a figure that remained largely constant for mothers from 4-18 months after giving birth. Since mothers on average gained 24 lbs during their pregnancy, the net result was a weight gain of 4 lbs, which resulted in an increase to 52%, of mothers with a Body Mass Index in the overweight (26%) and obese (26%) categories in the postpartum period, compared with 44% at the beginning of pregnancy.

Burden of Physical Health Concerns After Birth

The *Listening to Mothers III* survey asked women about their physical health following the birth of their child (Table 12). We first asked whether or not they had experienced any of a list of postpartum health concerns as new problems (as opposed to continuing chronic difficulties) within the first two months after birth. The problem cited by the greatest proportion of women was among those women who had experienced a cesarean section: nearly six out of ten women with cesareans (58%) considered pain at the site of the incision to have been a problem in this period, with 19% citing it as a major problem.

"I felt like in all the information that I researched during my pregnancy, that there was a HUGE lack of information about what happens to your body afterwards."

Four out of ten (41%; 11% major) of mothers with a vaginal birth cited a painful perineum as a new problem in the first two months postpartum. Perineal pain as a major problem was strongly related to whether or not a mother experienced an episiotomy (18%) or did not (9%) ($p < .01$). Three in ten women identified bowel problems (30% overall, 30% in vaginal, and 31% in cesarean births) and urinary problems (31% overall; 34% in vaginal and 23% in cesarean births; $p < .01$) as difficulties in the first two months, and one in four (24%) reported an infection associated with her cesarean.

"I did have significant pain from the cesarean."

"The after pain of the stitches and episiotomy were the worst part of my healing. … no one told me about or prepared me for that during my pregnancy or hospital stay."

Table 12. Mothers' experience of selected new-onset physical problems in first two months and at six or more months after birth

	In first two months			Problem persisted to six months or more*
	Major new problem	Minor new problem	Major/ minor new problem	
Cesarean only *n=744*				
Cesarean incision site pain	**19%**	**39%**	**58%**	**16%**
Cesarean incision site infection	**8%**	**16%**	**24%**	**5%**
Vaginal only *n=1656*				
Painful perineum	**11%**	**30%**	**41%**	**7%**
Infection from cut/torn perineum	**5%**	**13%**	**18%**	**4%**
All mothers *n=2400*				
Urinary problems	**9%**	**22%**	**31%**	**11%**
Bowel problems	**9%**	**21%**	**30%**	**9%**

***Base: those mothers responding at six or more months after the birth with a cesarean (*n=630*) or vaginal (*n=1365*) birth or either (*n=1995*)**

"I got a staph infection from my c-section. It was the worst thing I have experienced. It lasted 3 1/2 months and my husband had to change my dressing daily, causing me much pain."

Persistent Health Problems

We also asked mothers if they were still experiencing the difficulty at the time of the survey. Among those mothers who had given birth at least six months earlier, 16% of those with a cesarean had ongoing pain at the site of the cesarean scar, 11% cited continuing urinary problems (12% in vaginal births; 9% in cesarean), and 7% of mothers with a vaginal birth cited a painful perineum (9% for those with an episiotomy).

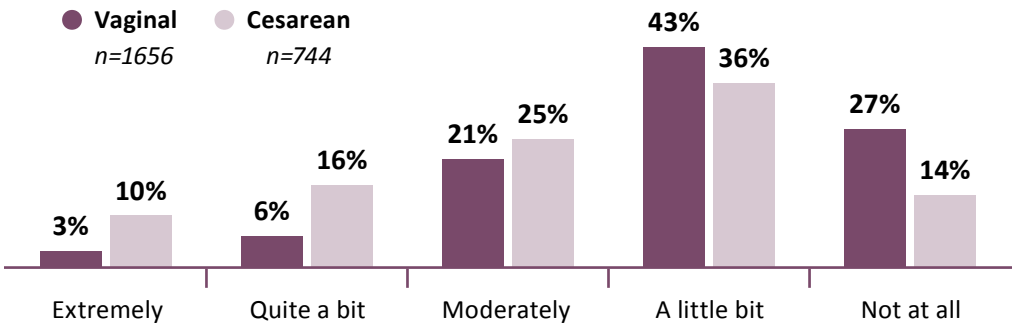
"No one told me before birth that the c-section area would always be kind of numb and kind of painful if pressure was put on it."

Pain and Everyday Activities

We asked mothers about the degree to which pain interfered with their everyday activities in the first two months after birth. Three-quarters (77%) of mothers said that pain did interfere at least "a little bit" in their routine activities in the first two months, with 14% indicating that pain interfered either "quite a bit" (9%) or "extremely" (5%). These findings varied widely depending on type of birth (Figure 11), with 25% of mothers with a cesarean describing at least "quite a bit" of interference with routine activities compared to 9% of mothers with a vaginal birth ($p < .01$).

"I was quite surprised about the physical pain I was in after delivery."

Figure 11. Extent to which pain interfered with routine activities in first two months after birth, by mode of birth



$p < .01$ for pain interference by mode of birth

Mental Health in the Postpartum Period

We asked mothers the widely used questions constituting the Patient Health Questionnaire-2 (PHQ-2) two-question depression screener to ask about their emotional state in the two weeks prior to the survey. About three in ten mothers reported "feeling down, depressed or hopeless" (31%) or having "little interest or pleasure in doing things" (32%) for at least several days in the past two weeks. In each case, 6% reported being bothered by these feelings nearly every day. Applying the recommended cut point for the PHQ-2 screener, 17% of all respondents screened as likely to have a depressive disorder in the two weeks preceding the survey.

We also asked mothers if they had consulted a health care or mental health professional regarding their concerns about their emotional or mental well-being, and 22% indicated that they had. This was strongly related to their self assessment of their recent mental health, with 56% of mothers who met the threshold for depression on the PHQ-2 reporting having seen a professional compared with 15% who did not reach the cutoff ($p < .01$). Alternatively, that also means that 44% of women who reported regular feelings of depression in the two weeks prior to the survey had not consulted a professional since giving birth.

"After I gave birth, I was not myself. I was depressed and didn't really realize that is what was wrong. I felt lonely, sad, not interested in socializing, and I was fighting with my husband a lot."

"I wish women were more informed and doctors and medical staff more concerned about postpartum depression."

"Postpartum depression really does consume who you are as a person and mother."

Paying for Maternity Care

Mothers had different sources of coverage for maternity care services (Table 13), with 47% indicating that private insurance was the primary payer of their maternity care expenses and another 15% noting it was a secondary payer. Nearly four in ten mothers (38%) had Medicaid or CHIP (the Child Health Insurance Program) as a primary payer with an additional 13% citing Medicaid was a secondary source. Nearly half of all mothers reported that they themselves (out-of-pocket) had been the primary payer (5%) or a secondary payer (40%) of their maternity care services.

Table 13. Sources of payment for maternity care

Base: all mothers *n=2400*	**Primary source**	**Additional source**
Private insurance	**47%**	**15%**
Medicaid or CHIP	**38%**	**13%**
Other government program: (e.g., TriCare, Federal Employees Health Benefits, VA)	**10%**	**14%**
Self/family pay (out-of-pocket)	**5%**	**40%**

"I wish there was a way of knowing the cost before you go to the hospital. It seems like the hospitals try to keep it a secret. There's no way to "shop" around and compare hospitals."

"My doctor's office says I owe thousands of dollars even though insurance covers it. All the billing difficulties have been left up to me to fix."

"The insurance – what is covered etc etc – is a nightmare to understand."

"I paid a small copay and that was it for the whole pregnancy. I never even saw the hospital bill."

"My insurance was the worst part. They don't cover much and I had to pay a lot. The staff wanted me to stay 2 days which made it even more expensive."

"We found out several days later that the doctors in the NICU were not actually employed through the hospital and their group was not in network through my insurance."

"I experienced a LOT of stress during my pregnancy ... because my insurance company was cutting off my coverage."

4. Choice, Control, Knowledge, and Decision Making

In addition to exploring women's experiences over the course of the childbearing period, we wanted to understand their overall views about the birth process and the care to which they had access. We also asked about any pressure the mothers may have experienced to accept interventions, any offered care that they might have refused, and their knowledge of potential harms of common interventions. And we explored processes involved in making several care decisions to consider whether they met standards for shared decision making. We are investigating additional related topics in the follow-up survey directed to *Listening to Mothers III* participants. Those results will be described in a separate report later in 2013.

"My son's doctor said he didn't weigh enough at four months. He was not underweight, just not close enough to the average for her to be comfortable. So she told me to start him on formula and that she would have to call social services if I didn't start supplementing.... She did not want to discuss other options with me.... I ... felt blackmailed into the change."

Views of the Maternity Care System and of Medical Intervention in the Birth Process

Medical Intervention in the Birth Process

Women generally had negative views on intervention in the birth process when not medically necessary (Table 14). Almost six in ten respondents strongly agreed (34%) or agreed (25%) with the statement, "Giving birth is a process that should not be interfered with unless medically necessary," more than three times as many as those who disagreed with it (16%). One out of four respondents (26%) neither agreed nor disagreed. There were few differences in the response by the number of times mothers had given birth.

"I strongly support natural birth, and believing in a woman's body to do what it was designed to do!"

Table 14. Mothers' attitude about interfering with birth process

How much do you agree or disagree with the following statement? Giving birth is a process that should not be interfered with unless medically necessary. Do you…?

	First-time mothers *n=977*	Experienced mothers *n=1423*	All mothers *n=2400*
Disagree strongly	**5%**	**7%**	**6%**
Disagree somewhat	**11%**	**8%**	**10%**
Neither agree nor disagree	**27%**	**25%**	**26%**
Agree somewhat	**25%**	**25%**	**25%**
Agree strongly	**32%**	**35%**	**34%**

"I had a very positive birth experience this time because I went into it believing that my body can do what it was made to do and had a very different experience from my first 2 deliveries. More women should believe in themselves and know they can have a good experience."

Rating the Maternity Care System

We asked all mothers to rate the quality of maternity care in the U.S. Mothers were generally positive, with one-third (36%) rating it as "excellent" and half (47%) rating it as "good," figures that varied little across a wide array of demographic (e.g., by race/ethnicity) or experience-based (e.g., mode of birth) subgroups.

"I felt no pressure to accept any interventions I didn't want unless my midwife felt it was for the baby's safety, in which case … the reasons were clearly explained to me and my husband before the intervention was executed. I couldn't have hoped to be treated with more respect and dignity."

Pressure to Accept Interventions and Experience Refusing Them

We asked mothers if they felt pressure from a health professional to have any of three interventions, and notable proportions indicated that they had experienced such pressure. The proportions reporting pressure varied very slightly by intervention: labor induction (15%), epidural analgesia (15%), or cesarean section (13%). Table 15 presents the results.

"The reason I had been pressured into an induced labor was that hospitals operate on a schedule, unlike the human body. Everyone was working according to their training, and so inducing my labor, despite the fact that I had resisted, was just part of their job. … I disagree with what happened."

We looked at these findings by whether or not mothers had the specific intervention, and there was a significant difference in each case. In terms of induction, 25% of mothers who experienced an induction cited pressure compared with 8% who did not have an induction. Most notably, there was a difference in the case of cesarean sections. Of those mothers with a vaginal (not VBAC) birth, 7% indicated they felt pressure while among those who had a primary cesarean 28% said they felt pressure. For those with a prior cesarean, 28% of the mothers with a VBAC and 22% of those with a repeat cesarean indicated they felt pressure. Overall, 8% of mothers who did not have a cesarean experienced pressure for surgery versus 25% of mothers who had a cesarean. In the case of epidurals, more mothers who *did not* have epidural analgesia indicated they felt pressure (19%) compared to those who did (13%) ($p < .01$ for all comparisons between having and not having the intervention).

"I felt incredibly forced to have an epidural to the point that I was in tears from the pressure."

Table 15. Mothers' experience of pressure to have three interventions, by whether mothers had intervention

Intervention	Experience of pressure among mothers who did not have intervention*	Experience of pressure among mothers who had intervention	Experience of pressure among all mothers
Labor induction	**8%**	**25%**	**15%**
Epidural analgesia	**19%**	**13%**	**15%**
Cesarean section	**8%**	**25%**	**13%**
Primary cesarean	**7%**	**28%**	**11%**
Repeat cesarean	**28%****	**22%**	**23%**

*p < .01 for all comparisons between those receiving an intervention and those who did not
**Mothers having a VBAC

We asked mothers if they ever refused to accept any care that was offered to them or their baby during the hospital stay, and 21% indicated they had done so. In a further question about the details, many of those women told us that they had refused interventions offered to their babies after the birth such as being taken to the nursery and given formula or bottle feeding, an immunization, or eye treatment. Care that mothers refused for themselves included cesarean delivery, early discharge, and various medications, including pain relief during labor or after birth. We also asked mothers who had experienced an episiotomy if they had any part in that decision, and only 41% said they had a choice about having that procedure.

Exploring Whether Mothers Experienced Shared Decision Making

We added three new question sequences to the *Listening to Mothers III* survey to explore whether decision making reflected standards for shared decision making. Two involved the situation where a mother without a prior cesarean was told that her baby might be getting quite large, which might have involved a discussion about inducing labor or scheduling a cesarean, while the third examined decision making about how to give birth after one or two prior cesareans. These conditions were included with the understanding that best current evidence does not support use of these interventions when a fetus might be "large" and supports offering vaginal birth after cesarean to nearly all women with one or two prior cesareans. Table 16 presents a summary of the results.

Predicting a Large Baby and Discussing Possible Interventions
Overall, 32% of mothers without a prior cesarean reported that they were told as they neared the end of pregnancy that their baby might be getting large. Interestingly,

"I felt like I was forced to have a c-section against my will."

"I felt like I was scolded like a child to take the epidural. I cried but eventually gave in."

"I refused pain medication and my nurse was very supportive but the doctor thought I was crazy. I do not believe in pain medication for something natural. I also refused to have my son circumcised and I was asked by 6 different people if I was sure. Again, he was born perfect and no reason to mess with perfection."

"I refused to take Percocets. I … didn't want to be doped up on pain pills. The nurses were quite rude, and … just stormed out of the room. I was disheartened by this. It was my choice if I wanted the medication or not, not hers, so I didn't see what the big deal was."

"I was not told that I was going to need an episiotomy, and it was done without my permission. I just would have liked to know what an episiotomy was, why it happens, and what it's like to deal with and take care of after giving birth."

"I was already well established into labor, yet they insisted on hooking me up to Pit."

the actual average birthweight of the babies in the cases in which mothers were told their babies might be getting large was 7 lbs 13 oz, well below the standard for a large baby ("macrosomia" or 8 lbs 13 oz). Those mothers who were not told their babies might be getting large had babies with an average birthweight of 7 lbs 1 oz, or a 12-oz difference in birthweight. Different providers told the mothers that their baby might be getting quite large at different rates, including family doctors (40%), doctors whose specialty was unclear to the mother (39%), obstetricians (31%), and midwives (26%).

After hearing that their baby might be large, 62% of mothers reported having a discussion with their provider about inducing labor because of concerns about the baby's size, and 44% reported having talked about a scheduled cesarean for the same reason. When mothers reported that the options of induction *or* cesarean came up it was usually with a family doctor or doctor of unknown specialty. In 44% of cases, mothers reported having discussed *both* an induction and cesarean with their provider. In those cases, the prenatal provider was most likely to be an obstetrician (71%).

"The doctor who delivered my baby was amazing. She asked questions and gave me time to ask questions. She listened to me and treated me as though she believed I was intelligent enough to make informed decisions about care for myself and my baby. I do not like to be treated like an idiot who is too stupid to understand and needs decisions made for me."

Potentially Large Baby and Labor Induction

We first examine mothers who spoke with their providers about a possible induction because of the potential for a large baby, excluding those mothers who also had discussions concerning a planned cesarean (Table 16). Mothers were asked how much their providers spoke with them about why they may want an induction, and more than half said either "some" (37%) or "a lot" (23%). When the question was reversed and mothers were asked about how much discussion focused on why not to have an induction, the figures were much smaller, with 27% saying "some" and 11% "a lot," with three in ten (29%) offering no discussion about reasons not to have an induction (Figure 12). Nearly one out of five (18%) mothers reported that their care provider did not offer a framework of choice concerning induction. Nearly all (92%) of the mothers indicated they discussed the option of waiting for labor to begin on its own. Most (81%) of these mothers indicated that their provider expressed an opinion about whether she should have an induction. Four out of five (80%) providers who expressed an opinion recommended the option of an induction. Three-quarters (77%) of the providers asked the mothers whether or not they wanted to have labor induction.

"When my labor did not begin on its own my doctor discussed options for induction and mentioned (after an ultrasound estimating the baby's weight at 8lbs 9 oz ...) that an induction would be necessary if labor did not begin on its own."

When asked who made the final decision on whether or not to have an induction, a plurality of mothers (46%) responded that the decision was mainly their own; 34% viewed it as a shared decision, and only 20% thought it was mainly their provider's decision. A large majority of mothers reported that if they knew then what they knew now would they make the same decision about whether to induce labor: 64% said "definitely yes" and another 21% "probably yes." Among those mothers who became involved in these discussions over whether an induction might be necessary, 67% ultimately had a medical induction and 37% tried a self-induction.

"No one did anything with my baby without explaining it and making sure I knew what the procedure did and why. When the doctors came around they let me be a part of the conversation and give input on my baby, since I know him best."

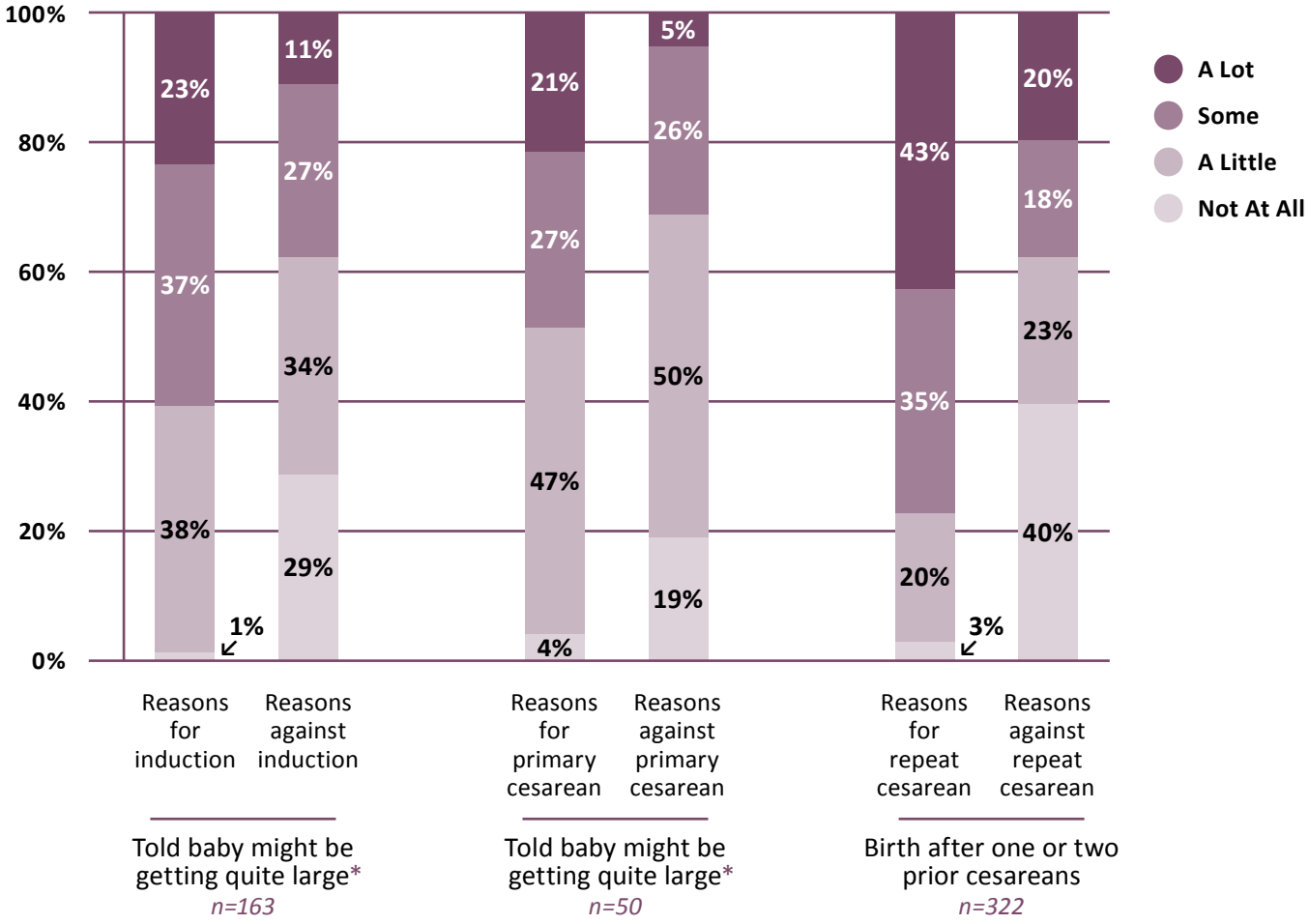
Table 16. Mothers' experiences of making three labor and birth decisions

	Induction mentioned because baby might be getting quite large* *n=163*	**Scheduled cesarean mentioned because baby might be getting quite large*** *n=50*	**Repeat cesarean mentioned following one or two prior cesareans** *n=277*
How much did you and your maternity care provider talk about the reasons you *might want* to have ... (% "some" or "a lot")?	**61%**	**49%**	**77%**
How much did you and your maternity care provider talk about the reasons you *might not want* to have ... (% "some" or "a lot")?	**38%**	**31%**	**38%**
Did your maternity care provider explain that there were choices (% yes)?	**82%**	**63%**	**73%**
How much did your maternity care provider talk about waiting for labor/waiting for labor/having a VBAC (% "some" or "a lot")?	**51%**	**49%**	**37%**
Did your maternity care provider express an opinion about whether or not you should have ... (% yes)?	**81%**	**71%**	**73%**
Did your maternity care provider think you should or should not have ... (% should have intervention among those who expressed opinion)?	**80%**	**72%**	**88%**
Did your maternity care provider ask you whether or not you wanted to have ... (% yes)?	**77%**	**80%**	**76%**
Who made the final decision about whether or not to have ... (% mother's decision/% providers/% shared decision)?	**46% / 20% / 34%**	**40% / 38% / 22%**	**40% / 21% / 39%**
If you knew then what you know now, do you think you would make the same decision about having ... (% definitely yes)?	**64%**	**47%**	**63%**
Percent of mothers in each group who experienced the intervention in question	**67%**	**29%**	**93%**

*As questions were designed for two-way comparison (no intervention versus intervention), results exclude 227 mothers whose care providers discussed both labor induction and scheduled cesarean, a three-way comparison with no intervention.

"Since the baby was getting large and I didn't want to have to go through a C section, I managed to go through the process of a labor induction."

Figure 12. Extent of provider discussion about reasons for having and not having interventions for selected conditions



*Questions were designed for two-way comparison, with and without intervention. Not included are 227 mothers whose care providers mentioned both labor induction and cesarean section, a three-way comparison with no intervention.

Potentially Large Baby and Scheduled Cesarean

A similar series of questions concerned the possibility of a large baby and a scheduled cesarean (Table 16). Once again, to keep the focus on cesarean decision making, cases where induction was also discussed were excluded. In almost all cases there was at least a little conversation about why she might want to schedule a cesarean (47% "a little," 27% "some," and another 21% "a lot"). There was generally less discussion about why she might not want to schedule a cesarean (50% "a little," 26% "some," and another 5% "a lot," with one in five or 19% offering no discussion about reasons not to have a primary cesarean) (Figure 12). More so than with labor induction, in nearly four in ten cases (37%), mothers reported that their care provider had not presented a framework of choice about scheduling a cesarean. Half (49%) reported at least "some" discussion about planning for a vaginal birth. In 71% of the cases, a provider expressed an opinion about whether or not to have a scheduled cesarean, and 72% of the time it was in favor of a planned cesarean. Ultimately, 29%

"My doctor did mention we may need a cesarean due to the baby being so big and even offered to go ahead and schedule it rather than induce, but I really did not want to go that route."

of the mothers who discussed with their provider the choice between having and not having a primary cesarean because the baby might be getting quite large did have a primary cesarean, compared with an overall primary cesarean rate of 19% in our survey. Generally, mothers were asked by their providers whether or not they wanted a scheduled cesarean (80%), and once again mothers felt the final choice was mainly their decision (40%) or a shared decision (22%). However, almost twice as often when compared to induction, the decision to have a cesarean was seen as the provider's decision (38% versus 20%). Mothers once again felt strongly they would make the same decision again, with 47% saying definitely and 50% saying that they would probably do so.

"I was very sad when the doctor told me I would have to have a c-section... When she was born she only weighed 7lbs 13oz.... I could have given birth naturally like I wanted."

Mode of Birth After One or Two Cesareans

In the third sequence, we examined a different decision making process, this time focusing on the decision concerning a repeat cesarean or vaginal birth after cesarean. We asked all of the mothers who had had one or two cesareans in the past whether they had talked with their maternity care provider about scheduling a cesarean because of their past cesarean(s) (Table 16). There was considerably more discussion than in the cases above, about why they should have the intervention, a scheduled repeat cesarean, with only 3% saying there was no discussion and 43% of mothers responding "a lot," 35% "some," and 20% "a little." By contrast, mothers indicated in 40% of cases there was no discussion about why they should not schedule a cesarean, with only 20% saying there was "a lot" of such discussion (Figure 12). Almost three in four (73%) of the mothers said that their providers had presented a framework of choice about how to give birth after a prior cesarean. In 70% of cases there was discussion of the option of a vaginal birth after cesarean (VBAC) (32% "a little", 16% "some", and 22% "a lot"). In almost three-fourths of the cases (72%), the provider expressed an opinion, and 88% of the time that opinion was in favor of a scheduled cesarean. Among those mothers involved in this decision making process, 93% did have a repeat cesarean. Most of the time (76%) the provider asked the mother whether or not she wanted a cesarean. In 40% of the cases, mothers reported that they felt it was mainly their decision, and in another 39% it was a decision made together by the mother and the provider, with only 21% stating it was mainly the provider's decision. This distribution did not vary substantially by whether or not a mother had a VBAC or a repeat cesarean. Mothers once again expressed confidence they would make the same choice again, with 63% stating "definitely yes," and 20% "probably yes."

"I wish more doctors would be on board with VBACs, especially if the prior c-sections weren't truly emergencies. So much better for the mom and baby in the long run!"

"My doctor was very supportive of a VBAC but many doctors and hospitals are not. It was a good experience for me."

"It meant a lot that I was always treated as the owner and decision maker for my body."

Knowledge About Impact of Interventions

We provided mothers with statements concerning possible adverse effects of cesarean section and labor induction and a possible reason for having labor induction, and we asked if they agreed or disagreed with those statements. In no case did a majority of mothers cite the "correct" response. Notably, with regard to cesarean section, pluralities of mothers were "not sure" in both examples. In the case of respiratory problems (which are more likely with cesarean section), mothers were as likely to be incorrect as correct. Mothers who had received a cesarean were no more likely to correctly indicate the increased likelihood of future placental problems after cesarean section than mothers who had not, and mothers who had had a cesarean were much more likely than mothers with a vaginal birth to incorrectly agree that a cesarean lowers the likelihood of newborn breathing problems.

"I would have liked more information about cesareans as this ruins my plans or makes it harder to have a big family."

In the case of labor induction, more mothers thought inductions might increase the chance for a cesarean (42%) than lower it (32%). A substantial majority agreed, contrary to best evidence and current clinical guidelines, that if a baby appeared large at the end of pregnancy, it made sense to induce labor (57%). Mothers who experienced an attempted medical induction were more likely to agree with the statement concerning large babies, while having experienced an induction had little relationship to attitudes about the likelihood of a cesarean following an induction (Table 18).

"The complications of having a C section need to be discussed more thoroughly with the patient having one in my opinion."

Table 17. Mothers' knowledge of cesarean section complications

A cesarean section…

n=1200	Disagree strongly	Disagree somewhat	Agree somewhat	Agree strongly	Not sure
Increases the chance of serious problems with the placenta in any future pregnancies	**8%**	**15%**	**24%**	**15%**	**38%**
Lowers the chance that a baby will have breathing problems at the time of birth	**14%**	**18%**	**18%**	**12%**	**37%**

Note: each participant was randomly presented either cesarean knowledge (this table) or labor induction knowledge (Table 18) questions.

Table 18. Mothers' knowledge of labor induction complications

How much do you agree or disagree with each of the following statements concerning medical induction of labor, that is, using drugs or other methods to try to cause labor to begin?

n=1200	Disagree strongly	Disagree somewhat	Agree somewhat	Agree strongly	Not sure
If a baby appears to be large at the end of pregnancy, it make sense to induce labor	**12%**	**17%**	**32%**	**24%**	**15%**
Labor induction lowers the chance that a woman will give birth by cesarean	**18%**	**24%**	**21%**	**11%**	**26%**

Note: each participant was randomly presented either cesarean knowledge (Table 17) or labor induction knowledge (this table) questions.

Knowledge About Optimal Conditions and Timing for Birth

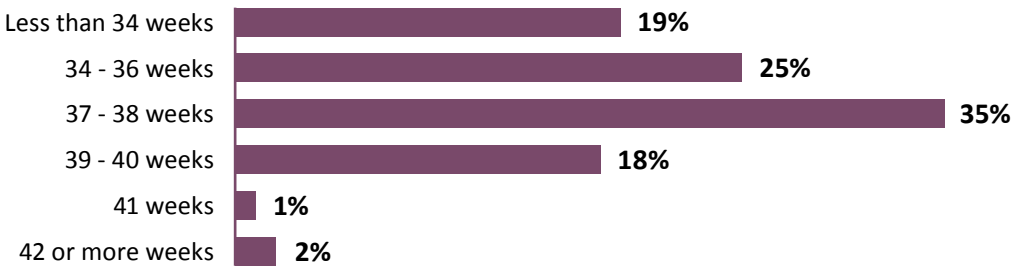
We asked mothers whether or not they agreed with the statement that if a pregnancy is healthy it is best to wait for labor to begin on its own rather than inducing it or scheduling a cesarean. Two-thirds (67%) agreed, while only 12% disagreed. The overall levels of disagreement with the statement differed little from disagreement among mothers whose labor had been induced (15%) or who had had a planned cesarean (14%).

We also asked mothers to identify the earliest week in pregnancy when it is safe to deliver a baby should complications not require an earlier delivery, with the understanding that a growing number of maternity care leaders and organizations discourage labor induction or cesarean section prior to 39 weeks' gestation unless there is a well-established medical reason. Figure 13 shows the distribution of weeks of pregnancy that the mothers inserted in the space provided. Just 21% chose 39 weeks or beyond, and 35% identified 37 or 38 weeks, which is considered an "early term" birth with recognized increased risks for babies in comparison with "full term" birth (39 to 40 weeks). One in four (25%) chose 34 to 36 weeks, considered to be a "late preterm" birth, and one in five (19%) identified even earlier and riskier weeks of premature birth as a safe time for babies to be born.

"My daughter was born completely healthy as she was allowed to complete more than 40 weeks gestation. Other doctors could take a lesson from this."

Figure 13. Mothers' identification of earliest week in pregnancy when it is safe to deliver a baby should complications not require an earlier delivery

Base: all mothers *n=2400*



5. Looking at Some Important Variations in Experience

Women's childbearing experiences can vary considerably depending on their circumstances. It is important to go beyond overall responses to understand the experiences of key subgroups. We examined four dimensions that are in many respects associated with quite different experiences: whether the birth was vaginal or cesarean, whether the woman was a first-time or experienced mother, the race/ethnicity of the mother, and the primary payer of the woman's maternity care services.

Comparing Childbearing Experiences by Parity and Mode of Birth

Mothers generally reported substantially different birth experiences depending on whether they had a vaginal or cesarean birth and whether it was their first birth or they had given birth before. In some cases, we have already identified in this report specific differences in mothers' responses related to these factors. Table 19 summarizes differences throughout the survey by mode of birth for first-time mothers, while Table 20 does the same for experienced mothers. There are many ways cesarean and vaginal birth data could be compared (e.g., primary cesareans versus repeat cesareans versus vaginal births after cesareans versus vaginal births with no previous cesarean; planned versus unplanned cesareans), but in this section we are simply comparing those mothers whose most recent birth was vaginal with those whose most recent birth was a cesarean. Likewise, we only compare first births with all those mothers who had experienced one or more prior births.

"I was a first-time mom, so everything scared me."

"The second pregnancy is much easier for women as they know what to expect."

First-Time Mothers by Mode of Birth

For first-time mothers, there were no major differences by type of birth in most areas, including: assessment of the quality of U.S. maternity care, general attitudes toward the birth process, and the likelihood of taking childbirth education classes, having a midwife in prenatal care, or intention to breastfeed. In two cases, however, the differences were pronounced. In comparison with first-time mothers with a vaginal birth, a first-time mother who had a cesarean was more likely to have received an epidural and less likely to have had the baby in her arms immediately after birth (Table 19).

Table 19. Variation in experiences of first-time mothers, by mode of birth

Base: had not previously given birth	First-time mothers		
	Vaginal *n=730*	**Cesarean** *n=247*	**All** *n=977*
Prenatal			
Prenatal provider was a midwife	**6%**	**5%**	**6%**
Took childbirth classes this pregnancy	**61%**	**53%**	**59%**
Pregnancy and childbirth websites very valuable information source	**58%**	**66%**	**60%**
Used Internet as a source	**99%**	**99%**	**99%**
Tried to self-induce	**33%**	**32%**	**33%**
Health professional attempted induction	**43%**	**53%**	**46%**
Labor, birth, postpartum			
Had epidural*	**63%**	**84%**	**68%**
Baby primarily in mother's/partner's arms first hour after birth*	**65%**	**49%**	**61%**
Had rooming in	**54%**	**53%**	**54%**
Intended to exclusively breastfeed	**56%**	**56%**	**56%**
Exclusive breastfeeding at 1 week	**56%**	**50%**	**55%**
Attitudes			
Birth should not be interfered with unless medically necessary	**55%**	**59%**	**56%**
Quality of U.S. maternity care good or excellent	**82%**	**79%**	**81%**

*p < .01 for difference between mothers with and without a cesarean

Experienced Mothers by Mode of Birth

Some of the same patterns emerge when considering experienced mothers, with those who had cesareans less likely than those with a vaginal birth to have had the baby in their arms after birth and more likely to have received an epidural. Like first-time mothers, experienced mothers' attitudes about interventions or rating of the maternity care system didn't vary by mode of birth. There were several areas where there were differences for experienced mothers that weren't seen for first-time mothers. Experienced mothers having vaginal births were more likely to have: had a midwife as their prenatal care provider, tried to self-induce, had a medical induction, had rooming in, and been breastfeeding at one week. Most notable perhaps was the large distinction between intention to breastfeed and actual breastfeeding at one week among mothers who had a cesarean (51% to 38%), a distinction not seen among experienced mothers with a vaginal birth (Table 20).

Table 20. Variation in experiences of experienced mothers, by mode of birth

Base: had previously given birth	Experienced Mothers		
	Vaginal *n=926*	**Cesarean** *n=497*	**All** *n=1423*
Prenatal			
Prenatal provider was a midwife*	**11%**	**6%**	**9%**
Took childbirth classes this pregnancy	**18%**	**14%**	**17%**
Pregnancy and childbirth websites very valuable information source	**53%**	**52%**	**53%**
Used Internet as a source	**96%**	**95%**	**96%**
Tried to self-induce*	**32%**	**17%**	**26%**
Health professional attempted induction*	**46%**	**23%**	**38%**
Labor, birth, postpartum			
Had epidural*	**61%**	**78%**	**67%**
Baby primarily in mother's/partner's arms first hour after birth*	**72%**	**53%**	**65%**
Had rooming in*	**68%**	**55%**	**64%**
Intended to exclusively breastfeed	**54%**	**51%**	**53%**
Exclusive breastfeeding at 1 week*	**51%**	**38%**	**47%**
Attitudes			
Birth should not be interfered with unless medically necessary	**62%**	**56%**	**60%**
Quality of U.S. maternity care good or excellent*	**85%**	**82%**	**84%**

*p < .01 for difference between mothers with and without a cesarean

"I was told by many that the 2nd birth is quick. It sure is!!"

"Being that this was my 2nd child I do not feel like I was checked on as much as a new mom would have been. I had to call a nurse every time I needed something from them."

First-Time and Experienced Mothers

Comparing mothers across experience levels (comparing results in Tables 19 and 20) reveals few differences beyond the greater likelihood that first-time mothers would take a childbirth education class and experienced mothers' greater use of midwives. In earlier *Listening to Mothers* surveys, experienced mothers were much more likely to fulfill their intention to breastfeed, but in this survey the figures were more comparable for experienced (4% difference) and first-time (6%) mothers. First time mothers who had a cesarean were much more likely to rate pregnancy-related websites as very valuable (66%) compared with experienced mothers with a cesarean (52%).

"As a second time mom, I felt confident in my ability."

Comparing Childbearing Experiences by Race and Ethnicity

The generally representative *Listening to Mothers III* data allow us to examine results by race/ethnicity with a focus on three major groupings: black non-Hispanic mothers, white non-Hispanic mothers, and Hispanic mothers. We chose not to present results for other commonly used U.S. race/ethnicity categories because they constituted too small a proportion of our sample to result in meaningful analysis. Some of the three-way comparisons are presented in Table 21. It is perhaps best to begin noting some areas where there were not substantial differences across the groupings: attempt to self-induce, experiencing a medical induction, use of rooming in, and overall rating of the U.S. maternity care system.

The differences are of great interest as well, and they arise in several areas. White non-Hispanic mothers were least likely to have an unplanned pregnancy, rely on Medicaid or WIC, need help with food during pregnancy, consider pregnancy websites very valuable sources of information, receive regular text messages with pregnancy and childbirth information, rate their prenatal care provider as "completely trustworthy," be given a choice about episiotomy, experience a group prenatal visit, and report that postpartum pain following a vaginal birth had interfered with routine activities. White non-Hispanic mothers were most likely to have prenatal visits of 15 or fewer minutes and to intend to exclusively breastfeed.

Black non-Hispanic mothers were most likely to report that they were unmarried with no partner, had used WIC, had an unplanned pregnancy, had a group prenatal visit, had questions always answered to their satisfaction by their prenatal provider, and had six or more pregnancy ultrasounds. They were most likely to be interested in doula care (among those who understood and had not used this type of care); to report that they had always or usually been treated poorly in the hospital because of their race, ethnicity, cultural background, or language; had been given a choice about episiotomy (among those with this procedure); received formula samples or offers and had babies who were given water or formula supplements (among women who intended to breastfeed); and report that postpartum pain significantly interfered with activities following both vaginal and cesarean births. Black non-Hispanic mothers had the highest level of agreement with the statement that birth should not be interfered with unless medically necessary. They were also least likely to report intention to exclusively breastfeed, though at one week their rates of exclusive breastfeeding were comparable to others.

Hispanic mothers were most likely to need help with food during pregnancy, be told they had gestational diabetes, and to not have met their provider until just before birth. They were least likely to rate their maternity care provider as "completely trustworthy," to take childbirth education classes (first-time mothers), and to agree that birth processes should not be interfered with unless medically necessary. In other respects, their responses were similar to black non-Hispanic women (e.g., had Medicaid as a primary payer, used group prenatal care, and used WIC) or white non-Hispanic women (e.g., attempted self induction and experienced attempted medical induction). Responses of Hispanic mothers were between the two other groupings in many areas, including having an unplanned pregnancy, average duration of prenatal

visits, receiving text messages about pregnancy and childbirth, intending to exclusively breastfeed, being unmarried with a partner at the time of birth, having an interest in doula care, experience of major labor and birth interventions, and experience of discrimination in the hospital.

Table 21. Variation in mothers' experiences, by race/ethnicity

	White non-Hispanic *n=1279*	**Black non-Hispanic** *n=356*	**Hispanic** *n=532*
Demographics			
Medicaid/other government program primary source of payment*	**38%**	**63%**	**64%**
On WIC during pregnancy*	**38%**	**70%**	**67%**
At birth, unmarried with partner*	**24%**	**55%**	**36%**
At birth, unmarried with no partner*	**5%**	**13%**	**7%**
Prenatal			
Pregnancy unplanned*	**30%**	**47%**	**41%**
Prenatal provider was a midwife*	**9%**	**6%**	**6%**
Had at least one group prenatal visit*	**16%**	**30%**	**27%**
Maternity care provider rated as "completely trustworthy"*	**51%**	**52%**	**36%**
Prenatal provider told her she had gestational diabetes*	**14%**	**19%**	**21%**
Average prenatal visit time ≤ 15 minutes*	**26%**	**12%**	**20%**
Prenatal provider always answered questions to mother's satisfaction*	**56%**	**68%**	**55%**
Had ≥ six pregnancy ultrasounds*	**20%**	**30%**	**25%**
Took childbirth classes, first-time mothers*	**61%**	**58%**	**53%**
Pregnancy and childbirth websites very valuable information source*	**53%**	**62%**	**57%**
Received regular text messages with pregnancy and childbirth information*	**20%**	**42%**	**30%**
Needed help with food during pregnancy*	**38%**	**53%**	**68%**
Used Internet as a source of information about pregnancy and childbirth	**97%**	**96%**	**98%**
Tried to self-induce	**28%**	**33%**	**28%**
Health professional attempted induction	**42%**	**36%**	**41%**
Labor, birth, postpartum			
Did not use doula, had clear understanding of doula care, and would have liked to have had doula care*	**22%**	**39%**	**30%**
Had none among five major labor and birth interventions*	**10%**	**18%**	**15%**
If episiotomy, given a choice	**36%**	**59%**	**46%**

→

Table 21 ***cont'd.*** Variation in mothers' experiences, by race/ethnicity

	White non-Hispanic *n=1279*	Black non-Hispanic *n=356*	Hispanic *n=532*
Labor, birth, postpartum ***cont'd***			
Family physician or midwife attended birth*	**16%**	**18%**	**17%**
Did not meet birth attendant until birth	**18%**	**26%**	**27%**
First-time mother had a cesarean	**27%**	**24%**	**25%**
Baby was in mother's/partner's arms after birth*	**65%**	**59%**	**60%**
Had rooming in	**61%**	**59%**	**59%**
Always or usually treated poorly in hospital due to race, ethnicity, cultural background, or language*	**3%**	**10%**	**7%**
Intended to breastfeed and hospital provided formula or water supplements*	**32%**	**45%**	**38%**
Intended to breastfeed and hospital provided formula samples or offers*	**52%**	**64%**	**49%**
Intended to exclusively breastfeed*	**59%**	**43%**	**50%**
Exclusive breastfeeding at 1 week*	**51%**	**49%**	**48%**
Pain interfered quite a bit or extremely with routine activities in 1st 2 months, vaginal birth*	**7%**	**12%**	**10%**
Pain interfered quite a bit or extremely with routine activities in 1st 2 months, cesarean birth	**22%**	**35%**	**24%**
Attitudes			
Birth should not be interfered with unless medically necessary*	**57%**	**69%**	**54%**
Quality of U.S. maternity care good or excellent*	**82%**	**86%**	**84%**

*p < .01 for difference between mothers across race/ethnicity groups

Note: excluded from this table were mothers who identified as belonging to Asian, American Indian, and other race/ethnicity groupings with proportions in our sample that were too small for meaningful analysis.

Comparing Childbearing Experiences by Primary Source of Payment

In Table 22, we compare women whose primary source of payment was Medicaid and CHIP, the Child Health Insurance Program (37% of the mothers), with women whose primary source of payment was private insurance (45%). Not included in this table are respondents who identified as the primary source of payment other government programs (for example Tricare and Federal Employees Health Benefits) (9%) and self-pay (5%). Three percent of mothers were not sure of payment source. There are a number of notable differences in the background and birth experiences of mothers on Medicaid compared with those on private insurance. Mothers who relied on Medicaid as their primary payer for birth were more likely to be higher parity, on WIC, and unmarried with a partner. They were more likely to have had an unplanned pregnancy and, even when the pregnancy was planned, less likely to have made a pre-pregnancy visit to plan for a healthy pregnancy. Mothers on Medicaid were less likely to take a childbirth class or rate pregnancy websites as very valuable. They were twice as likely to regularly have group prenatal visits and never have heard of a doula, and more likely to be medically induced, not have met their birth attendant until the birth, and have their baby spend time in the NICU. Mothers on Medicaid were less likely to experience an epidural with a vaginal birth, intend to exclusively breastfeed, and be exclusively breastfeeding at one week. There was, however, no difference in the cesarean rate for first-time mothers and no difference in how they rated the U.S. maternity system. Overall, there appears to be ample opportunity to provide mothers on Medicaid with more information about their options and better support relating to birth and breastfeeding.

"After 7 days I still needed hospital care, but because I was on Medicaid, I had to be dismissed. My doctor got me back in the hospital a few days after my dismissal so my high blood pressure medication could be regulated."

Table 22. Variation in mothers' experiences, by primary payer

	Medicaid or CHIP *n=893*	**Private insurance** *n=1091*
Background Health		
Current birth was third or higher*	**34%**	**24%**
Took medicine for high blood pressure in month before pregnancy	**10%**	**7%**
Took medicine for depression in month before pregnancy*	**15%**	**10%**
Overweight or obese just prior to pregnancy*	**49%**	**40%**
Prenatal provider told her she had gestational diabetes	**18%**	**15%**
On WIC during pregnancy*	**81%**	**23%**
At birth, unmarried with partner*	**56%**	**21%**
Prenatal		
Pregnancy unplanned*	**43%**	**27%**
Visit to plan for healthy pregnancy*	**39%**	**51%**
Did not get prenatal visit as soon as wanted to*	**22%**	**13%**

→

Table 22 *cont'd.* Variation in mothers' experiences, by primary payer

	Medicaid or CHIP *n=893*	Private insurance *n=1091*
Prenatal *cont'd*		
Reason for not getting timely prenatal visit was lack of money or insurance*	**35%**	**9%**
Usually saw same person for prenatal care	**76%**	**78%**
Prenatal provider was a doctor of unknown specialty, nurse who wasn't a midwife or physician's assistant	**8%**	**3%**
Had group prenatal visits usually or always*	**21%**	**9%**
Prenatal provider changed due date*	**32%**	**19%**
Took childbirth classes, first-time mothers*	**52%**	**67%**
Pregnancy and childbirth websites very valuable information source*	**52%**	**59%**
Tried to self-induce*	**31%**	**25%**
Health professional attempted induction*	**46%**	**37%**
Labor, birth, postpartum		
Had never heard of doulas*	**36%**	**19%**
First-time mother with vaginal birth got epidural*	**31%**	**37%**
If episiotomy, given a choice	**47%**	**35%**
Told at end of pregnancy baby might be large*	**35%**	**28%**
After being told baby was large, provider discussed induction*	**53%**	**71%**
Family physician or midwife attended birth	**16%**	**16%**
Did not meet birth attendant until birth*	**37%**	**28%**
First-time mother had a cesarean	**26%**	**25%**
Baby was in mother's/partner's arms after birth*	**60%**	**67%**
Had rooming in*	**63%**	**56%**
Baby spent time in NICU*	**20%**	**14%**
Intended to exclusively breastfeed*	**47%**	**61%**
Exclusive breastfeeding at 1 week*	**42%**	**57%**
Pain interfered quite a bit or extremely with routine activities in 1st 2 months, vaginal birth	**10%**	**7%**
Pain interfered quite a bit or extremely with routine activities in 1st 2 months, cesarean birth	**27%**	**22%**
Attitudes		
Birth should not be interfered with unless medically necessary*	**59%**	**62%**
Quality of U.S. maternity care good or excellent*	**82%**	**85%**

*$p < .01$ for difference between mothers across payer source

Note: excluded from this table were mothers whose primary source of payment was other government program (e.g., Tricare, VA; 9% of all mothers) or self pay (out-of-pocket; 5% of all mothers).

6. Trends: Comparing Results Across *Listening to Mothers* Surveys

The *Listening to Mothers* surveys have documented women's childbearing experiences in the United States over about a decade. In making comparisons across the surveys, it is important to understand the time frame of the three surveys. Participants in the first survey were responding about births that had taken place over a 24-month period from mid-2000 to mid-2002. *Listening to Mothers II* participants gave birth in hospitals in 2005, and participants in the most recent survey had hospital births from mid-2011 through mid-2012. While *Listening to Mothers II* and *Listening to Mothers III* both included timely new items, numerous continuing items have been included in two or all three surveys. This section looks across the three surveys to consider trends in women's childbearing experiences during what has been in many respects a time of flux for the U.S. maternity and health care systems. In interpreting these figures, it is important to be aware that the target population is not all childbearing women in the U.S. during the period of eligibility, but rather women 18 through 45 who could participate in English and gave birth to a single baby that was still living at the time of the survey. The second and third surveys were limited to hospital births; the first included 1% who gave birth in birth centers and 1% who gave birth at home.

Before and During Pregnancy

Table 23 presents results across two or three *Listening to Mothers* surveys relating to the period before and during pregnancy. Figures in the table suggest general stability in the use of different types of prenatal care providers across the three surveys. The following appear to have increased over the period of the surveys: having a preconception visit, use of ultrasound in pregnancy and ultrasound to estimate fetal size, use of the Internet as a source of information about pregnancy and childbirth, and having continuity of prenatal care provider. Responses across the surveys suggest a decrease in intention at the end of pregnancy to exclusively breastfeed. In the past two surveys, there has been a decrease in pregnancies that were not intended for that time or earlier and in obesity at the time of conception. A steep decline in attendance of first-time mothers at childbirth education classes across the first two surveys did not continue in the third survey.

Table 23. Before and during pregnancy: trends across *Listening to Mothers* surveys

Survey Item	*LTM I* 2000-02	*LTM II* 2005	*LTM III* 2011-12
Base: all survey participants in respective year			
Pregnancy was unintended: wanted to be pregnant later or never wanted to be pregnant	**38%**	**42%**	**35%**
Had obese body mass index just before becoming pregnant	**n.a.**	**25%**	**20%**
Obstetrician-gynecologist was care provider most directly involved with prenatal care	**77%**	**79%**	**78%**
Family physician was care provider most directly involved with prenatal care	**7%**	**8%**	**9%**
Midwife was care provider most directly involved with prenatal care	**13%***	**9%**	**8%**
Always or almost always saw same person for prenatal care	**70%**	**73%**	**78%**
Had zero to two ultrasound scans	**n.a.**	**41%**	**30%**
Had five or more ultrasound scans	**n.a.**	**23%**	**34%**
Health professional used ultrasound to estimate fetal weight near end of pregnancy	**n.a.**	**51%**	**68%**
Used Internet as source of information about pregnancy and childbirth during pregnancy	**n.a.**	**76%**	**97%**
As came to end of pregnancy, hoped to exclusively breastfeed baby	**67%**	**61%**	**54%**
Base: intended pregnancy – wanted to be pregnant at that time or earlier			
Before becoming pregnant, saw health care provider to plan for a healthy pregnancy	**30%**	**28%**	**52%**
Base: first-time mothers			
Took childbirth education classes during pregnancy	**70%**	**56%**	**59%**
Base: experienced mothers			
Took childbirth education classes during recent pregnancy	**19%**	**9%**	**17%**
Took childbirth education classes during previous pregnancy	**n.a.**	**47%**	**44%**

n.a. indicates item was not available in a previous survey, at all or through comparable data

*The first survey included participants who gave birth in birth centers (1%) and at home (1%), who generally have midwives as care providers.

Around the Time of Birth

Table 24 presents results across two or three *Listening to Mothers* surveys relating to the period from late pregnancy through the childbirth hospital stay. Figures in the table suggest general stability in attempted medical labor induction, several commonly cited reasons for labor induction, use of several highly rated (in previous *Listening to Mothers* surveys) drug-free measures for labor pain relief, having the newborn "room-in" during the hospital stay, and in the rare cases of what have been termed "maternal request" cesareans among women with a primary cesarean. After a sharp increase across the first two surveys, results from *Listening to Mothers III* show a stabilizing cesarean rate. The following appear to have increased over the period of the surveys: attempts at labor self-induction and drinking liquids and eating solid food during labor. Across the two most recent surveys there was an increase in newborns being primarily in their mothers' arms in the first hour after birth and mothers' experience of pressure to have several major intrapartum interventions. Data from multiple surveys suggest a decrease in labor brought on by medical induction, proportion of vaginal births with episiotomy, and the proportion of "macrosomic" babies with birthweights above 4,000 grams.

Table 24. Late pregnancy through hospital stay: trends across *Listening to Mothers* surveys

Survey Item	*LTM I* 2000-02	*LTM II* 2005	*LTM III* 2011-12
Base: all survey participants			
Tried on own to cause labor to begin (attempted self-induction)	**n.a.**	**22%**	**29%**
Care provider used drugs or some other technique to try to cause labor to begin	**44%**	**41%**	**41%**
Drugs or other techniques used by maternity care provider did cause labor to begin	**36%**	**34%**	**30%**
Obstetrician-gynecologist was person who primarily attended baby's birth	**80%**	**79%**	**70%***
Family physician was person who primarily attended baby's birth	**4%**	**7%**	**6%***
Midwife was person who primarily attended baby's birth	**10%**	**8%**	**10%**
Person who primarily attended baby's birth was female	**n.a.**	**52%**	**61%**
Had epidural or spinal analgesia for pain relief	**63%**	**76%**	**67%**
Had narcotics by intravenous drip for pain relief	**30%**	**22%**	**16%**
Used nitrous oxide for pain relief	**2%**	**3%**	**6%**
Used no pain medications	**20%**	**14%**	**17%**
Had labor augmentation	**53%**	**47%**	**26%**
Partner/husband provided supportive care while giving birth	**92%**	**82%**	**77%**
Doula provided supportive care while giving birth	**5%**	**3%**	**6%**
Had a spontaneous vaginal birth	**64%**	**61%**	**59%**
Had forceps or vacuum extraction	**11%**	**7%**	**11%**

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Table 24 *cont'd.* Late pregnancy through hospital stay: trends across *Listening to Mothers* surveys

Survey Item	*LTM I* 2000-02	*LTM II* 2005	*LTM III* 2011-12
Base: all survey participants *cont'd*			
Had cesarean section	**24%**	**32%**	**31%**
Baby born in low birthweight range (below 5 lbs 8 oz)	**5%**	**5%**	**8%**
Baby born in macrosomia range (above 8 lbs 13 oz)	**14%**	**12%**	**11%**
Baby primarily in mother's arms during the first hour after birth	**40%**	**34%**	**47%**
Baby primarily with mother during hospital stay ("rooming in")	**56%**	**59%**	**60%**
During hospital stay, refused care offered to her or her baby	**n.a.**	**10%**	**21%**
Felt pressure from a care provider to have labor induction	**n.a.**	**11%**	**15%**
Felt pressure from a care provider to have epidural analgesia	**n.a.**	**7%**	**15%**
Felt pressure from a care provider to have a cesarean section	**n.a.**	**9%**	**13%**
Base: those who had the intervention			
Felt pressure from a care provider to have labor induction	**n.a.**	**18%**	**25%**
Felt pressure from a care provider to have epidural analgesia	**n.a.**	**7%**	**13%**
Felt pressure from a care provider to have a cesarean section	**n.a.**	**25%**	**25%**
Base: care provider tried to induce labor (selected reasons – "choose all that apply")			
Care provider was concerned about the size of the baby	**n.a.**	**17%**	**16%**
Mother wanted to be done with pregnancy and have her baby	**19%**	**19%**	**19%**
Mother wanted to control timing for work or other personal reasons	**6%**	**8%**	**11%**
Mother wanted to go into labor with preferred doctor or midwife	**11%**	**8%**	**10%**
Base: experienced labor (before having either a vaginal or a cesarean birth)			
Used immersion in a tub or pool for comfort	**n.a.**	**6%**	**8%**
Used shower for comfort	**n.a.**	**4%**	**10%**
Used birth ball for comfort	**n.a.**	**7%**	**10%**
Base: vaginal births			
Drank anything during labor	**35%**	**43%**	**41%**
Ate anything during labor	**14%**	**15%**	**20%**
Gave birth lying on back	**n.a.**	**57%**	**68%**
Episiotomy	**35%**	**25%**	**17%**
Base: primary cesarean births			
Had a planned cesarean that she initiated with understanding that there was no medical reason ("maternal request" cesarean)	**n.a.**	**<1%**	**1%**
Base: as came to end of pregnancy, wanted to exclusively breastfeed			
Hospital staff provided formula or water to supplement breast milk	**47%**	**38%**	**29%**
Hospital staff provided free formula samples or offers	**80%**	**66%**	**49%**

n.a. indicates item was not available in a previous survey, at all or through comparable data
*Seven percent of respondents in the third survey chose "a doctor, but I'm not sure of his/her specialty."

Postpartum Period

Table 25 presents results across two or three *Listening to Mothers* surveys relating to the postpartum period. Survey results suggest that the proportion of newborns who were exclusively breastfeeding a week after birth declined between the first two surveys and now appears to be somewhat stable. Survey data also suggest a possible increase in the number of women who had no postpartum visit (though question wording differed slightly), but – among those who did receive ambulatory postpartum care – an increase in the number of visits. While women with cesarean births continued to identify more pain and infection at the incision as a major problem in the first two months after birth relative to women with vaginal birth who identified painful or infected perineum, differences by mode of birth narrowed in the most recent survey. Results suggest a possible slight rise between the second and third surveys in the proportion of women who consulted a health care or mental health professional with concerns about mental or emotional well-being in the postpartum period. Additional cross-survey postpartum comparisons and comparisons that extend over a longer time period following the birth will be possible with results of the *Listening to Mothers III* follow-up survey that has been directed to the initial participants.

Table 25. Postpartum period after hospital discharge: trends across *Listening to Mothers* surveys

Survey Item	*LTM I* 2000-02	*LTM II* 2005	*LTM III* 2011-12
Base: all participants			
A week after birth, feeding baby breast milk only	**58%**	**51%**	**50%**
Had no postpartum visits with maternity care provider	**6%**	**n.a.**	**10%**
Had single postpartum visit with maternity care provider	**43%**	**n.a.**	**34%**
Had two or more postpartum visits with maternity care provider	**50%**	**n.a.**	**57%**
Since giving birth, has consulted a health care or mental health professional with concerns about emotional or mental well-being	**19%**	**19%**	**22%**
Base: gave birth vaginally			
In the first two months after birth, a painful perineum was a major new problem	**9%**	**15%**	**11%**
In the first two months after birth, infection from a cut or torn perineum was a major new problem	**1%**	**1%**	**5%**
Base: gave birth by cesarean			
In the first two months after birth, pain at site of cesarean incision was a major new problem	**25%**	**33%**	**19%**
In the first two months after birth, infection at site of cesarean incision was a major new problem	**5%**	**8%**	**8%**

n.a. indicates that the item was not available in a previous survey, at all or through comparable data

Attitudes, Choice, and Decision Making

Table 26 presents results across two or three *Listening to Mothers* surveys relating to women's attitudes, choices, and decision making. Ratings of the U.S. maternity care system have been remarkably stable and quite favorable over the last two surveys. By contrast, the proportion agreeing somewhat or strongly that birth is a process that should not be interfered with unless medically necessary has steadily risen from fewer than half (45%) to nearly six in ten (58%) over the period of the surveys. The data on vaginal birth after cesarean (VBAC) suggests a small increase between 2005 (45%) and 2011-12 (48%) in the proportion of women with a prior cesarean who were interested in the option of a VBAC. What is perhaps more interesting is the growth in the number of women with a prior cesarean who report not having had the option of VBAC up to 56% in the current survey from 42% a decade earlier. For those with a history of cesarean who did not have the option of a VBAC, the proportion reporting that their care provider or their hospital was unwilling declined appreciably between the last two surveys, however, the proportion of mothers denied access to a VBAC for a medical reason unrelated to their prior pregnancy more than doubled (20% to 45%) across the past two surveys. Additional cross-survey comparisons relating to women's perspectives will be possible with results of the *Listening to Mothers III* follow-up survey that has been directed to the initial participants.

Table 26. Attitudes, choice, and decision making: trends across *Listening to Mothers* surveys

Survey Item	*LTM I* 2000-02	*LTM II* 2005	*LTM III* 2011-12
Base: all survey participants			
Overall, rate the quality of maternity care in the U.S. as poor	**n.a.**	**1%**	**2%**
Overall, rate the quality of maternity care in the U.S. as fair	**n.a.**	**15%**	**16%**
Overall, rate the quality of maternity care in the U.S. as good	**n.a.**	**48%**	**47%**
Overall, rate the quality of maternity care in the U.S. as excellent	**n.a.**	**35%**	**36%**
Disagree strongly or somewhat that giving birth is a process that should not be interfered with unless medically necessary	**31%**	**24%**	**16%**
Neither agree nor disagree that giving birth is a process that should not be interfered with unless medically necessary	**24%**	**25%**	**26%**
Agree somewhat or strongly that giving birth is a process that should not be interfered with unless medically necessary	**45%**	**50%**	**58%**
Base: had had cesarean in the past			
Had a VBAC	**26%**	**11%**	**14%**
Base: had cesarean in the past and for most recent birth			
Was interested in the option of a vaginal birth after cesarean	**n.a.**	**45%**	**48%**
Did not have the option of a vaginal birth, or VBAC	**42%**	**52%**	**56%**
Base: had cesarean in the past, and did not have the option of a VBAC for recent birth			
Did not have the option because caregiver was unwilling to do a VBAC	**36%**	**45%**	**24%**
Did not have the option because hospital was unwilling to allow a VBAC	**12%**	**23%**	**15%**
Medical reason unrelated to prior cesarean	**38%**	**20%**	**45%**

n.a. indicates that item was not available in a previous survey, at all or through comparable data

Conclusion

Listening to Mothers III survey results offer an unprecedented look at experiences of childbearing women and their infants in the United States. Working with a leading survey research firm, we reached and polled a sample of women who had given birth from mid-2011 through mid-2012 that closely resembles the survey's target population – mothers 18 to 45 who gave birth to a single baby in U.S. hospitals. Our respondents could participate in English, and their babies were still living at the time of the survey in the final quarter of 2012. This large population is primarily, but not exclusively, healthy and at low risk.

What happens to childbearing women, infants, and families matters deeply. Much evidence is accumulating about lifelong implications for babies of the medical, physical, and social environment during this crucial period. While less studied in mothers, growing evidence suggests that conditions at this time (for example, whether they have a cesarean or breastfeed) also have long-term impacts on maternal well-being.

Survey results allow us to identify opportunities to improve circumstances for this population by comparing actual experiences of mothers and their infants to their preferred experiences, to their perceptions about their experiences, to current standards of informed and shared decision making, to care supported by best evidence, and to optimal outcomes.

Some survey results indicate that U.S. maternity experiences are generally on track. For example, two in five women saw and used quality information about care providers and about hospitals when choosing their care. The great majority of women initiated prenatal care early in pregnancy and when they wanted to, and reported experiencing supportive care during labor. More so than health insurance for the general population, respondents had access to coverage for maternity services. Ancillary services also played an important role in meeting their needs during pregnancy.

Various other survey results help us better understand maternity experiences and reflect important social changes rather than exemplary or inappropriate practices. For example, virtually all women now use the Internet as a source of information about pregnancy and childbirth, and large proportions have access at least weekly through one or more devices. Large proportions of women now regularly receive pregnancy and childbirth content through e-mail and text message services.

Many survey results suggest that large segments of this population are experiencing clearly inappropriate care that does not reflect the best current evidence and standards, as well as experiencing other undesirable circumstances and adverse outcomes. Concerns involving most survey participants likely impact millions of mothers or babies annually in the U.S. Even when relatively small proportions of mothers reported undesirable experiences, with nearly four million births annually, each percentage point represents about 40,000 mothers and babies every year.

At the start, large proportions had unplanned pregnancies and entered pregnancy with excess weight. Smaller proportions had been diagnosed with Type 1 or Type 2 diabetes before pregnancy or were taking medication for hypertension or depression just before becoming pregnant. There was also a concerning body mass index distribution at the time of the survey. Mothers experienced a considerable amount of new-onset maternal physical morbidity in the postpartum period, at the challenging and important time when they took on responsibility for care of their newborns. Subsets of mothers continued to experience these problems six months or more after the birth. Many reported depressive symptoms.

The survey identified many concerns about care that is not supported by best evidence or best practice. These include**:**

- a high rate of adjusting the due date at the end of pregnancy (mostly by moving it forward)
- large proportions of labor induction for non-medical reasons
- much professional support for induction when a fetus might be getting large
- much professional support for a cesarean when a fetus might be getting large
- failing to present vaginal birth after cesarean (VBAC) as an option for many women with one or two prior cesareans
- considerable proportion of care providers and hospitals that were unwilling to offer VBAC
- small proportions of mothers who used simple, low-risk, drug-free measures for labor pain relief such as tubs, showers, and birth balls, which previous *Listening to Mothers* participants rated favorably
- considerable experience of care provider pressure to have major interventions, and cross-survey trend of increasing pressure to have these interventions
- more than six in ten mothers had two or more among five consequential interventions around the time of birth
- there was evidence of a “cascade of intervention” with one intervention appearing to increase the likelihood of others
- nearly seven in ten women with vaginal births gave birth lying on their backs
- most mothers with an episiotomy did not have a say in whether to have it
- one baby in four was primarily with the hospital staff for routine care in the first hour after birth
- more than two babies in five were not “skin-to-skin” with their mothers when the mothers first held them
- many mothers who intended to breastfeed experienced ill-advised hospital practices that undermine breastfeeding
- there was a drop-off of several percentage points in the proportion of mothers who wanted to exclusively breastfeed at the end of pregnancy and the proportion who were doing so one week after birth
- just 50% of babies were exclusively breastfed a week after their birth
- among those who were at least seven months postpartum, just 29% met the international standard of exclusive breastfeeding to six months or more
- mothers experienced considerable burden of new-onset morbidity
- women reported experiencing discrimination relating to their race/ethnicity, cultural background or language; their health insurance situation; or their views of the right care for themselves or their baby
- women reported holding back from asking questions because their care provider might view them as difficult, they wanted maternity care that differed from what their provider wanted, or their care provider seemed rushed.

Concerns about women's knowledge include:

- a majority could not correctly identify two facts about labor induction
- a majority could not correctly identify two facts about cesarean section
- a majority identified unsafe gestational ages as the earliest safe time to deliver a baby, absent complications
- despite quality concerns noted above, 47% rated maternity care providers as "completely trustworthy" and an additional 33% as "very trustworthy"
- despite quality concerns noted above, 36% rated quality of maternity care in the United States as excellent and 47% as good.

Over the three *Listening to Mothers* surveys, respondents have increasingly supported the idea that birth processes should not be interfered with unless medically necessary. However, there was little indication that the maternity care system protects, promotes, and supports the intrinsic physiologic capacities of this largely healthy population of women and their fetuses/newborns. Technology-intensive maternity care continues to predominate.

Our maternity care system is failing to provide care that many mothers told us they want and that is in the best interest of themselves and their babies. Moreover, this unnecessarily costly style of care places a considerable burden on governments, employers, and families who pay the bills for this major sector of the health care system. The Institute of Medicine's landmark *Crossing the Quality Chasm* report exposed the gulf between where our health care system is and where it should be with respect to safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity. The "2020 Vision for a High-Quality, High-Value Maternity Care System" details the needed maternity care system, and a "Blueprint for Action" charts the path to this system (both are available at transform.childbirthconnection.org). The *Listening to Mothers* surveys are signposts that can help accelerate improvement.

Survey results point to the need for mothers themselves to become more engaged and activated and take an increased role in the challenging yet crucial responsibility to become informed, understand their maternity rights, and make wise decisions about matters that impact the health and well-being of themselves and their babies. Mothers need skills and tools to be able to take these steps forward, including improved knowledge about quality maternity care, high-quality decision aids, critical appraisal skills, and help in navigating the maternity care system.

"I feel like really researching and having a good understanding for the process (true informed consent) and making my knowledge and wishes known to my caregivers made the difference in my pregnancy, labor, and delivery. You have to be your own advocate and not accept substandard care from anyone."

Our survey results identify many opportunities to close gaps between actual and more optimal experiences through policy, practice, education and research. It is important to implement strategic clinical, public health, performance measurement, quality improvement, and family support policies at national, state, local and corporate levels. Innovative delivery and payment systems are crucial for achieving the needed improvements. In clinical and health systems practice, there is a critical need to ensure access to safe, effective care that is appropriate for childbearing women and to routinely carry out shared decision making processes. Educational priorities include strengthening all phases of health professions education and improving the knowledge and skills of childbearing women. Knowledge of evidence-based maternity care and skills for achieving safe, physiologic vaginal birth are urgent priorities for health professions education. Greater transparency about health system options (including performance at provider and hospital levels) and responsible high-quality mass media content can play major roles in helping women make wise choices. We have growing and extensive knowledge about safe and effective maternity practice, and we must continue to develop a maternity care system that is structured to deliver such care as a matter of course.

Appendix A
Methodology

Harris Interactive® conducted *Listening to Mothers III: The Third National U.S. Survey of Women's Childbearing Experiences* on behalf of Childbirth Connection. The survey consisted of 2400 online interviews with women who had given birth between July 2011 and June 2012 with weighting of data (see "Weighting") to reflect the target population. Interviews were conducted from October 11 through December 26, 2012, and the survey took approximately 30 minutes to complete.

The Survey Questionnaire
All interviews were conducted in English. The full survey questionnaire is available at: transform.childbirthconnection.org/reports/listeningtomothers/.

Eligibility Requirements
All respondents were asked a series of preliminary questions to determine their eligibility for the survey. To be eligible, respondents had to be 18 through 45 years of age, to have given birth between July 1, 2011 and June 30, 2012 in a U.S. hospital to a single baby, to have that child still living at the time the survey was conducted, and to be able to respond to a survey in English. We decided to examine only singleton births because the relatively small proportion of multiple births in the United States is distinct from all births and would yield too few participants for us to examine separately. Likewise we focused on hospital births because there are so few home or freestanding birth center births, and we would not have sufficiently large subgroups to analyze these. Moreover, question wording was considerably simplified and clearer for respondents by referring to the hospital experience and birth of a single child. We eliminated births to mothers whose babies were not living at the time of the survey for several reasons. From an ethical perspective, we felt that survey participation could be distressing to this group of mothers, from the perspective of data analysis they are another distinctive and small group, and questionnaire wording would have been complicated. To minimize bias, the screening questions were designed so that the eligibility criteria were not readily apparent.

Online Sample
Potential respondents were drawn from the Harris Poll Online (HPOL), Research Now/E-Rewards, GMI and Offerwise Hispanic panels. Panelists have been recruited from a variety of sources. To eliminate the potential for duplicate data for panelists who may be a member of multiple panels, Harris uses digital fingerprint technology. Any respondent identified as a duplicate by this technology is automatically deleted by programming logic. The duplicate technology provides each respondent with a fraud score ranging from 0 to 100. By default, any respondent with a score greater than 0 is excluded from the final data. In addition, Harris employs duplicate IP address checks. Duplicate IP addresses are verified by and cross checked between panels. In addition to digital fingerprint technology and duplicate IP checks, Harris also verifies GEO IP Encoding. If a respondent's IP is not from the correct GEO IP location, then that respondent is prevented from entering the survey.

Online Interviewing
An email was sent to a sample of women age 18-45 drawn from the various panels inviting them to participate in the survey. Embedded in the invitation was a direct link to the survey website enabling recipients to proceed to the survey immediately or at a later time more convenient to them. The survey was hosted on a secure server and used advanced web-assisted interviewing technology.

After proceeding to the survey website, respondents were screened to determine their eligibility. Respondents satisfying the eligibility requirements were able to proceed into the actual survey. Once in the survey, respondents could complete the entire questionnaire in one session, or could choose to complete it in multiple sessions, an important consideration for mothers of young children.

A number of steps were taken to maintain the integrity of the online sample and to maximize response to the survey. Among these measures was the use of password protection, whereby each email invitation contained a unique URL that was assigned to the email address to which it was sent.

Additional steps taken to maximize response included sending "reminder" invitations to respondents who did not respond to the initial invitation.

Data Processing
All data were tabulated, checked for internal consistency, and processed by computer. A series of computer-generated tables was then produced showing the results of each survey question, both by the total number of respondents and by key subgroups.

Weighting
To more accurately reflect the target population, the data were weighted by key demographic variables, as well as by a composite variable known as a propensity score, intended to reflect a respondent's propensity to be online. Demographic variables used for weighting included educational attainment, age, race/ethnicity, geographic region, and household income using data from the March 2011 Supplement of the U.S. Census Bureau's Current Population Survey; and mode of birth and number of times women have given birth using data from the U.S. Centers for Disease Control and Prevention's 2010 reporting of birth certificate data. (The latter was the most recent available birth certificate file at the time of data weighting and analysis.) The propensity score took into account selection biases that occur when conducting research using an online panel, and included measures of demographic, attitudinal, and behavioral factors that are components of the selection bias. Several articles describe this methodology and report experiences with validating applications of the methodology.[1]

As a consequence of the methodology described, the *Listening to Mothers III* survey was designed to be representative of the national population of women giving birth in 2011 to 2012, with the following exclusions: teens younger than 18 and mothers older than 45, mothers who had given birth outside of a hospital, women with multiple births and with babies who had died, and women who do not speak English as a primary or secondary language.

Comparing Subgroups
When testing for differences between subgroups, it is common to accept a $p < .05$ level of chance of error. To be even more confident in interpreting our results, when comparisons are made, we used $p < .01$ as the cutoff for identifying differences in the groups being compared. This reduces the possibility that the differences cited

are based on random variation. Given the large sample size, even some small differences will be seen as statistically significantly different, though we include assessment of effect size in our interpretations.

Non-Sampling Error

Sampling error is only one type of error encountered in survey research. Survey research is also susceptible to other types of error, such as data handling error and interviewer recording error. The procedures followed by Harris Interactive, however, are designed to keep errors of these kinds to a minimum.

Note

1. Smith R, Brown HH. Assessing the quality of data from online panels: Moving forward with confidence. Harris Interactive White Paper, n.d.; Terhanian G, Bremer J. Confronting the selection-bias and learning effects problems associated with Internet research. Harris Interactive White Paper, August 16, 2000; Terhanian G, Bremer J, Smith R, Thomas R. Correcting data from online surveys for the effects of nonrandom selection and nonrandom assignment. Harris Interactive White Paper, 2000; Taylor H, Bremer J, Overmeyer C, Siegel JW, Terhanian G. Touchdown! Online polling scores big in November 2000. *Public Perspective* 2001 March/April;12(2):38-39; Taylor H, Terhanian G. Heady days are here again. *Public Perspective* 1999 June/July;10(4):20-23. Additional information about Harris Interactive methodology is available at: www.harrisinteractive.com.

Appendix B

Demographic Overview of Survey Participants

Table 27. Unweighted and weighted* demographic profile of survey participants

Base: all mothers *n=2400*

	Unweighted number	Unweighted %	Weighted %
Age			
18 – 24	**601**	**25%**	**32%**
25 – 29	**644**	**27%**	**28%**
30 – 34	**692**	**29%**	**25%**
35 – 39	**337**	**14%**	**12%**
40 – 45	**126**	**6%**	**3%**
Education			
High school or less	**466**	**19%**	**42%**
Some college	**888**	**37%**	**29%**
College graduate	**746**	**31%**	**21%**
Post-graduate	**300**	**13%**	**9%**
Income			
< $29,400	**475**	**20%**	**27%**
$29,401 – $37,000	**136**	**6%**	**6%**
$37,001 – $52,300	**394**	**16%**	**17%**
$52,301 – $75,300	**503**	**21%**	**19%**
$75,301+	**760**	**32%**	**25%**
Race/ethnicity			
White non-Hispanic	**1445**	**60%**	**55%**
Black non-Hispanic	**309**	**13%**	**15%**
Hispanic	**452**	**19%**	**23%**
Asian and other	**181**	**8%**	**7%**

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Table 27 ***cont'd.*** Unweighted and weighted* demographic profile of survey participants

	Unweighted number	Unweighted %	Weighted %
Maternal birth place			
United States	**2233**	**93%**	**93%**
Other country	**167**	**7%**	**7%**
Number of times has given birth			
One	**1144**	**48%**	**41%**
Two	**775**	**32%**	**33%**
Three or more	**481**	**21%**	**27%**

*See Appendix A for a description of weighting procedures

Appendix C

Comparing *Listening to Mothers III* Results and Federal Vital and Health Statistics

The *Listening to Mothers III* survey collected data on many maternity practices and interventions that have not been examined nationally within the U.S. vital and health statistics system. For example, survey results include national-level data about pre-conception visits, attempted induction (in addition to labor that was actually induced) by providers and mothers themselves, induction agents and techniques, narcotic and drug-free measures for labor pain relief, urinary catheterization in labor, eating and drinking in labor, mobility in labor, position used for giving birth, use of doulas and other providers of supportive care during labor, and specialty of physicians who were primary birth attendants.

The survey also collected data on a series of items that have been included on birth certificates and in national hospital discharge records. Table 28 compares some of these data items using birth certificate data from 2010, the most recent year for which complete final federal data were available, while *Listening to Mothers III* respondents described events that primarily occurred in 2011-12. To better assess comparability, we present national natality data for mothers 18 to 45 years of age with singleton births in a hospital to mirror the *Listening to Mothers III* survey population (see Appendix B).

Table 28. Comparison of *Listening to Mothers III* results and federal vital and health statistics

Data item	*Listening to Mothers III* (2011-12)	Singleton Hospital Births to mothers 18+* (2010)
Birth attendant		
Doctor	**84%**	**92%**
Midwife	**10%**	**8%**
Mother's race/ethnicity		
White non-Hispanic	**55%**	**54%**
Black non-Hispanic	**15%**	**15%**
Hispanic	**23%**	**24%**
Asian and other	**7%**	**7%**

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Table 28 *cont'd.* Comparison of *Listening to Mothers III* results and federal vital and health statistics

Data item	*Listening to Mothers III* (2011-12)	Singleton Hospital Births to mothers 18+* (2010)
Mother's age		
18 – 24	**32%**	**32%**
25 – 29	**28%**	**29%**
30 – 34	**25%**	**25%**
35 – 39	**12%**	**12%**
40 – 45	**3%**	**3%**
Number of times has given birth		
1	**41%**	**39%**
2	**33%**	**32%**
3+	**27%**	**28%**
Mother's education		
High school or less	**42%**	**45%**
Some college	**29%**	**27%**
College and post-graduate	**30%**	**28%**
Method of birth		
Vaginal	**69%**	**68%**
Vaginal, vacuum extraction or forceps	**9%**	**4%**
Vaginal birth after cesarean	**2%**	**1%**
Cesarean	**31%**	**32%**
Primary cesarean	**15%**	**19%**
Repeat cesarean	**16%**	**13%**
Procedures		
Induced labor	**36%**	**24%**
"Augmentation" of labor (synthetic oxytocin in labor)	**36%**	**21%**
Ultrasound	**99%**	**70%**
Episiotomy, among vaginal births	**17%**	**13%**

*All figures from 2010 reporting of birth certificate data, except ultrasound, which is from 2005 birth certificate data, and episiotomy, which is from 2010 National Hospital Discharge Survey. At the time of publication, the most recent available national birth certificate file was of 2010 births.

Listening to Mothers III respondents are largely representative of the national population of mothers with singleton hospital births in terms of race/ethnicity, mother's age, parity, education, and mode of birth. The difference in birth attendant is largely the result of our inclusion of two categories not available on birth certificate – nurses who were not midwives and physician's assistants.

There are, however, some greater discrepancies in figures from the two sources for obstetric procedures. In addressing discrepancies, it is again important to note the 18-month difference in time frame between U.S. (2010) and *Listening to Mothers III* (2011-2012) births. Some discrepancies might be altered by comparing *Listening to Mothers III* results to final federal data from 2011 and 2012, a more optimal time frame.

It is possible that information from mothers was less accurate than information collected by people who may have greater understanding of clinical matters. To increase validity, we avoided technical topics requiring specialized knowledge and information that women might not have been apprised of in the first place, and worked to develop clear, unambiguous language for included survey items. When exploring experience with obstetric practices, we frequently provided both a description of what would have taken place and the medical term. We obtained feedback on a near-to-final version of the survey questionnaire from members of the *Listening to Mothers III* National Advisory Council, pilot-tested the questionnaire with mothers who met survey eligibility requirements, and used feedback from those groups to refine question wording.

A series of validation studies have examined the accuracy of women's recall and reporting about pregnancy and childbirth. Overall, they provide support for the validity of data from mothers themselves. The studies found that it is inappropriate to assume that medical records are consistently more accurate, that mothers may be more reliable sources for many data items, that maternal reporting can provide more complete information than medical records, that sensitive topics may be more accurately reported with data collection that is not face to face, and that the accuracy of maternal recall can persist over many years. The accuracy of women's reports of pre-pregnancy weight and weight just before birth (gestational weight gain) warrants further investigation.[1]

Perhaps the most important consideration for understanding the discrepant figures is extensive evidence of undercounting of some items in the federal natality reporting system. Numerous validation studies have examined the accuracy of birth certificate data when compared with medical records, hospital discharge records, and maternal reporting and have concluded that many items were underreported in federal sources, with some substantially underreported.[2] These studies identify considerable variation in accuracy of reporting across hospitals and other units, and in some instances clarify that procedures for compiling the data differ in ways that could influence the accuracy and completeness of reporting. Accuracy of reporting may also vary by type of maternity care provider.[3]

Although results of these studies cannot be used to specify the magnitude of underreporting nationally, they nonetheless identify some data items for which a considerable proportion of actual occurrences of procedures do not appear to be identified (low "sensitivity") in the federal reporting system. Our overall rates of ultrasound, labor augmentation, labor induction and episiotomy were higher than those reported in national birth certificate data (or, for episiotomy, in hospital discharge data), and

the studies we examined generally found quite low sensitivity for these procedures. Note that while the most recently available federal data source on pregnancy ultrasound is from 2005 (Table 28), our second national survey, of hospital births in 2005, found that 98% of mothers experienced one or more ultrasounds during pregnancy, similar to the present survey (99%). Ultrasound sensitivity in the validation studies ranged from 37% (Piper) to 44% (Reichman) to 51% (Zollinger) to 63% (Dobie). Sensitivity of labor augmentation ranged from 26% (Piper) to 34% (Lydon-Rochelle) to 94% (Zollinger), and sensitivity of labor induction ranged from 45% (Yasmeen) to 52% (Lydon-Rochelle) to 56% (Parrish) to 61% (Piper) to 96% (Zollinger). Validation studies of electronic fetal monitoring found sensitivities of 33% (Zollinger), 74% external/77% internal (Piper) and 78% (Dobie). Episiotomy validation studies, which were checks on hospital discharge records, found sensitivities ranging from 56% (Parrish) to 70% (Yasmeen) to 84% (Lydon-Rochelle). *Listening to Mothers III* identified a slightly higher rate of vaginal birth after cesarean (VBAC) than national birth certificate date, which is consistent with studies reporting sensitivity concerns for this measure: sensitivity of VBAC ranged from 42% (Green) to 48% (Reichman) to 53% (Piper) to 61% (DiGiuseppe) to 62% (Lydon-Rochelle) to 70% (Parrish) to fully 100% (Roohan). One report found 94% agreement on identification of gestational diabetes between birth certificates and a cohort study (Vinikoor).

We believe *Listening to Mothers II* results have important strengths relative to other sources. Mothers have been shown to provide accurate information about many dimensions of their childbearing experiences. Our survey included data items that are not otherwise available at the national level. For other topics, our survey went into greater depth and was more finely nuanced than other national data. Of considerable importance, we believe that *Listening to Mothers* surveys begin to clarify the magnitude of undercounting of specific data items in some leading sources of national maternity data.

Notes

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Appendix D

Sources for New *Listening to Mothers* Survey Items

Many items from previous *Listening to Mothers* surveys were retained in the present survey. The new survey also enabled us to explore new topics. We preferred to use or adapt previously validated items, as available and with permission, and we developed some new items as well, as summarized below. Use of items that have been or will be used with other populations enables comparison of results across groups.

Planning for Pregnancy and the Pregnancy Experience

In *Listening to Mothers III*, our team revised *Listening to Mothers II* versions of pre-pregnancy and pregnancy questions about choice of prenatal care provider and of hospital and about ratings of sources of information on pregnancy and childbirth. We developed new items about: taking medication for high blood pressure or depression before the index pregnancy, length of prenatal visits, group prenatal care, whether due date had been changed near end of pregnancy (and, if so, direction of change), ratings of trustworthiness of sources of information about pregnancy and childbirth, use of various electronic devices (and, if used, their value as sources of information about pregnancy and childbirth), subscriptions to emails or text messages about pregnancy and childbirth information, and for those who had taken childbirth education classes the schedule and primary focus of the classes. We also adapted established items on pre-pregnancy and pregnancy topics from other sources, as follows and with permission:

- Clinician told respondent before pregnancy that she had Type 1 or Type 2 diabetes, and clinician told respondent during pregnancy that she had gestational diabetes, adapted from Pregnancy Risk Assessment Monitoring System (PRAMS)[1]
- Comparing the quality of maternity care providers and of hospitals with maternity units, adapted from the National Survey on Americans as Health Care Consumers[2]
- Access to prenatal online services, adapted from Telephone Omnibus Questions for Health System Performance[3]
- Whether during prenatal care respondent had held back on asking questions because their maternity care provider seemed rushed, adapted from Employee Healthcare Decision Making Survey[4]
- Whether during prenatal care respondent had refrained from asking questions because she might be viewed as difficult or because she wanted something different from recommendation of her maternity care provider, adapted from study on barriers to shared decision making[5]
- Whether prenatal care provider had used medical words that were not understood, encouraged respondents to talk about all of their health questions and concerns, spent enough time, and answered all questions to satisfaction, adapted from Consumer Assessment of Healthcare Providers and Systems: Adult Clinician and Group Survey, Cultural Competence Item Set, and Health Literacy Item Set[6]
- Use of WIC, adapted from Pregnancy Risk Assessment Monitoring System (PRAMS).[1]

Women's Experiences Giving Birth
Our team developed new items about interest in use of doula services, amount of cervical dilation at hospital admission, and whether babies spent any time in the neonatal intensive care unit before hospital discharge. This report includes new analyses on cascade of intervention and cumulative major interventions based on continuing items. We also adapted established items, as follows and with permission:

- Race/ethnicity of birth father, adapted from recommendations of Institute of Medicine report[7]
- Whether initial mother-baby contact was skin-to-skin, adapted from Canadian Maternity Experiences Survey[8]
- Whether mother had been treated unfairly in hospital due to race, ethnicity, culture, or language or due to her insurance situation, adapted from Sick in America.[9]

Choice, Control, Knowledge, and Decision Making
We adapted established items about decision making and knowledge, as follows and with permission:

- Whether mothers had experienced shared decision making processes, adapted from Trends Survey[10]
- Optimal conditions and timing for birth, adapted from Harris Interactive survey.[11]

Notes

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6. Agency for Healthcare Research and Quality. CAHPS: Surveys and tools to advance patient-centered care. Available at: cahps.ahrq.gov.

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11. March of Dimes. Survey conducted by Harris Interactive, March 2012.

About Childbirth Connection, Harris Interactive, and the W.K. Kellogg Foundation

Childbirth Connection

Childbirth Connection is a national not-for-profit organization founded in 1918 as Maternity Center Association. Its mission is to improve the quality and value of maternity care through consumer engagement and health system transformation. Childbirth Connection promotes safe, effective, and satisfying evidence-based maternity care and is a voice for the needs and interests of childbearing families.

Childbirth Connection's national U.S. *Listening to Mothers* surveys collect, measure, and give voice to women's childbearing experiences. They are widely consulted sources for understanding women's pre-pregnancy, pregnancy, childbirth, and postpartum experiences and their knowledge, attitudes, and preferences about these matters. With the assistance of Harris Interactive, Childbirth Connection has carried out three *Listening to Mothers* surveys over the past decade, along with follow-up surveys directed to the same participants after the second and third surveys. The survey reports, questionnaires, and related resources are available at: www.childbirthconnection.org/listeningtomothers/.

Through the *Transforming Maternity Care* Partnership, Childbirth Connection works with stakeholders from across the health care system to implement priority recommendations from the consensus, direction-setting *Blueprint for Action: Steps Toward a High-Quality, High-Value Maternity Care System.* This Blueprint, a companion report, *2020 Vision for a High-Quality, High-Value Maternity Care System*, and other resources for improvement and transformation are available at: transform.childbirthconnection.org.

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Harris Interactive is one of the largest market research and consulting firms in the world and the global leader in conducting online research. Harris is the first company to have successfully built and launched an online market research panel. Since its inception in 1997, Harris Interactive has hosted more than 95 million completed online interviews from Harris Poll Online℠ Panel respondents.

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W.K. Kellogg Foundation

The W.K. Kellogg Foundation, founded in 1930 by breakfast cereal pioneer Will Keith Kellogg, is among the largest philanthropic foundations in the United States. Based in Battle Creek, Michigan, WKKF engages with communities in priority places across the country and internationally to create conditions that propel vulnerable children to realize their full potential in school, work and life.