

Listening to Mothers in California:

A POPULATION-BASED SURVEY OF WOMEN'S CHILDBEARING EXPERIENCES



FULL SURVEY REPORT

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Preface

Since 2002, widely cited national *Listening to Mothers* surveys have broken new ground as unique sources of much information about childbearing women's experiences, outcomes and views. *Listening to Mothers in California* is the first state-level version of this survey. It explores the experiences, outcomes and views of childbearing women with in-depth focus on hospital maternity care experiences and postpartum well-being. This survey is a complement to California's annual *Maternal and Infant Health Assessment* (MIHA) survey, which covers an extensive range of topics, prioritizing those relevant to public health and social disparities in health and health behaviors.

Listening to Mothers in California includes numerous innovations relative to previous national *Listening to Mothers* surveys. For the first time, we were able to offer the survey in Spanish as well as English. We adapted the survey for mobile devices, enabling women to participate on any device or with a trained interviewer. State-level surveys have the potential to use birth certificate sampling, and we were fortunate to receive support from the relevant California agencies to access birth certificates for sampling, data weighting and other purposes. In our sampling, we oversampled Black women, women with midwife-attended births and women who had a vaginal birth after cesarean to better understand women in these groups. With support from the California Department of Health Care Services, we identified sampled women with childbirth claims covered by Medi-Cal ("Medi-Cal beneficiaries") and obtained several additional analysis variables for them. Our final sample, the largest yet for a *Listening to Mothers* survey, enables us to explore many important questions. Finally, through the generosity of our funders, the California Health Care Foundation and Yellow Chair Foundation, we have prepared an unprecedented body of products to share results with many audiences.

This report presents topline results of items in our questionnaire. It also breaks results down by multiple subgroups, especially by race/ethnicity and payer. Nationally and in California, we increasingly understand that we must redouble efforts to improve maternal-newborn care, the health of mothers and babies and health equity.

California is a bellwether state in its response to these challenges, with extensive commitment among many stakeholders to improving the quality and outcomes of maternity care. This report and other survey products will support the work of these diverse stakeholders, including state, county and municipal agencies; state legislators; health plans; clinical leaders and professional societies; hospitals; employers; advocates; and a broad range of nonprofit organizations working on behalf of this population.

Listening to Mothers in California products are available through a digital version of this report at NationalPartnership.org/LTMCA, including a chart pack, fact sheets, issue briefs, infographic, short videos, an overview of survey methodology and the survey questionnaire. An identical set of files, without the digital version of this report, is also available at chcf.org/listening-to-mothers-CA. As with previous *Listening to Mothers* datasets, we will make the de-identified California dataset publicly available in June 2019 at the University of North Carolina's Odum Institute Archive Dataverse datasets repository (<https://odum.unc.edu/archive/uncdataverse>). Searching on "Listening to Mothers" (inclusive of quotation marks) will identify the full set of *Listening to Mothers* datasets.

We are deeply indebted to the women in California who participated in our survey. They took the time to share their experiences and views and to tell their stories during a demanding period of transition and while caring for an infant, among other responsibilities.

We were privileged to bring together an exceptional, highly experienced project team to carry out this work. The National Partnership for Women & Families led this project. Key project personnel at the National Partnership were Principal Investigator Carol Sakala, Ph.D., M.S.P.H., director of Childbirth Connection Programs; Maureen P. Corry, M.P.H., senior advisor for Childbirth Connection Programs; and Jessica M. Turon, M.P.H., research assistant.

We are grateful for the opportunity to collaborate with valued colleagues at the University of California, San Francisco (UCSF) and Boston University throughout the course of this project. Key personnel at the UCSF Center on Social Disparities in Health were Kristen Marchi, M.P.H., and Paula Braveman, M.D., M.P.H., center co-directors; Katherine Heck, M.P.H., research analyst; and Monisha Shah, M.P.H., research analyst. This team brought invaluable expertise from two decades of work on California's MIHA survey.

Eugene R. Declercq, Ph.D., M.B.A., professor, Boston University School of Public Health, a core investigator with Sakala and Corry on all previous national *Listening to Mothers* surveys, was again an essential member of our project team.

Quantum Market Research, Inc. administered the survey with great diligence and care. Key personnel included Veronica Raymonda, president and founder; Patricia J. Hoyt, project manager; and Terry A. Miller, programmer and senior Computer Assisted Telephone Interviewing lab supervisor. We deeply appreciate the skillful, respectful bilingual QMR interviewers who tracked and engaged sampled women in completing the survey.

We are grateful to the translators of our survey questionnaire, outreach materials and open-ended survey responses, Maria Fernandez, M.P.H., and Andrea Soriano, M.S.W.

We express our deep appreciation to the following California agencies that approved and supported our project: Committee for the Protection of Human Subjects of the Office of Statewide Health Planning and Development, Vital Statistics Advisory Committee of the California Department of Public Health, Data and Research Committee of the Department of Health Care Services and Genetic Disease Screening Program of the Department of Public Health. We also thank the Human Research Protection Program at UCSF.

We are very grateful to members of our multi-stakeholder project advisory council for their contributions to the questionnaire development, guidance from their respective vantage points on an individual basis throughout the project, and support to move forward on dissemination and use of results to improve policies, programs and practice.

Finally, we are deeply thankful for our generous funders, California Health Care Foundation (CHCF) and Yellow Chair Foundation. CHCF's Stephanie Teleki, Ph.D., envisioned a California *Listening to Mothers* survey, helped to create the right team, supported adaptation for California and recruited Yellow Chair Foundation as a co-funder. It has been a great pleasure to work with Stephanie as well as Yellow Chair Foundation's Valerie Lewis, MPH, MPA, who have enabled, supported and strengthened this work.

Executive Summary

Listening to Mothers in California is a statewide, population-based survey, in English and Spanish, of the experiences, outcomes and views of women who gave birth in California hospitals in 2016. This survey joins a series of national *Listening to Mothers* surveys carried out since 2002 to provide previously unavailable information to those with an interest in high-value maternity care and the well-being of childbearing women and infants.

METHODOLOGY

The Committee for the Protection of Human Subjects of the California Office of Statewide Health Planning and Development approved our research and the evolution of our work. We developed, field tested and refined a roughly 30-minute questionnaire covering the prenatal through postpartum and newborn periods. We drew a representative sample from birth certificate files, excluding teens younger than 18, women with out-of-hospital births, women with multiple births and nonresidents of California. We oversampled Black women, women with midwifery-attended births and women with vaginal birth after cesarean to better understand the experiences and views of these groups.

We developed, field tested and refined outreach materials to encourage participation. We invited sampled women to participate through a series of mailings with elements of informed consent, information about how to participate and an offer of a gift card for survey completion. We followed up with nonrespondents by mail, telephone, text message and email, as available, using contact information from multiple sources. Respondents could complete the survey in English or Spanish, by themselves using any device or via telephone with a trained interviewer. Further exclusions at the point of contact were women who were unable to participate in English or Spanish and whose babies were not living with them at that time. Participants completed the questionnaire when their babies were between 2 and 11 months old.

Our survey results from 2,539 women were weighted for the target population, including correction for oversampled groups, using the 2016 Birth Statistical Master File of all births in California. Despite the exclusions, our results closely align with statewide 2016 results on many basic variables. We largely report survey results, but investigators also had access to birth certificates of survey participants and, for respondents with births covered by Medi-Cal, several analysis variables from the state's Management Information System/Decision Support System Warehouse. Appendix A provides detailed information about the survey methodology.

KEY FINDINGS

Care Team and Place of Birth

Just a fraction of women reported receiving no prenatal care, and about 1 in 5 had no choice of prenatal care provider. In the case of both maternity care providers and hospitals for giving birth, about 4 women in 10 said they found information about the quality of prospective options. Nearly all who found information in turn used the results to inform their choice of care arrangements. The great majority of women had obstetricians for both their prenatal care and their birth attendant: fewer than 1 in 10 had a midwife (who was in essentially all cases a certified nurse midwife [CNM], in the context of hospital births) for prenatal care and as birth attendant.

We looked at barriers to midwifery care, both why women who would have liked such care did not have it, and why women would definitely not be interested in such care. Misunderstandings about this care and lack of access to it were important barriers. We estimate that about 1 woman in 10 had the support of a labor doula who, in some cases, also provided support in pregnancy and/or at home after the birth.

“

Thanks for listening to mothers. We often get forgotten about.

”

“

It is nice to have a voice and to be heard and is nice to have a study to improve the health of babies and mothers.

”

We asked women about their interest – should they give birth in the future – in using several types of care, and found considerable unmet needs. Proportions of women who said they would definitely want to have or would consider a midwife and also a doula far exceeded the proportions that used midwives and doulas for their recent births. While all survey participants gave birth in hospitals, we similarly asked about interest in giving birth in a freestanding birth center as well as at home, should they give birth in the future. Proportions of women who would definitely want to use, or would consider, these birth settings greatly exceeded the proportions that actually used these birth settings in the state in 2016 (based on birth certificate data). For all of these care options, Black women consistently were on the highest end of the range of interest among race/ethnicity groups, and women with Medi-Cal had greater interest in out-of-hospital birth settings than women with private insurance.

About 1 respondent in 3 recognized that the quality of maternity care can vary widely across different hospitals and different obstetricians. The rest were divided almost evenly between those who felt that quality is pretty much the same or were not sure.

Maternity Care Practices

We asked women how much they agreed or disagreed with the statement, "Birth is a process that should not be interfered with unless medically necessary." About half agreed strongly and another quarter agreed somewhat versus fewer than 1 in 10 who disagreed. Displaying responses to this question across three national surveys and this statewide survey suggests rapid changes in women's views about avoiding unnecessary intervention in a 15-year time span.

In contrast to these preferences, we found extensive use of interventions around the time of birth. For example, 2 in 5 women experienced attempts to induce labor, with more than 1 in 3 solely for reasons that are not supported by high-quality evidence. About 3 in 10 women were told near the end of pregnancy that their babies might be getting quite large. These women were more likely to experience induced labor, yet more than 4 in 5 gave birth to babies that were within the normal weight range at birth. We found that most women were admitted to the hospital in early labor, when the likelihood of having a cesarean was great, versus relatively few later in labor, when the likelihood of having a cesarean was exceptionally low. Both women who gave birth vaginally and women with cesarean births had high rates of interventions. Use of pain medications was high, with 3 in 4 experiencing regional analgesia (epidural or spinal). About 1 in 6 respondents used no pain medication. Use of some well-recognized drug-free measures such as showers and tubs was limited. About 1 in 3 women did not experience any drug-free measures for pain relief.

Looking at overall patterns in these care experiences, we found most women tended to have many interventions around the time of birth, and we include a table summarizing those measured. We found that nearly half of respondents experienced five or more of 10 consequential interventions around the time of birth. We found an apparent cascade effect among first-time mothers who labored at term and use of three major interventions. Those with neither labor induction nor epidural analgesia had almost no cesarean births, nearly 2 in 10 with either one of these had cesareans, and 3 in 10 with both had cesareans. Using a consensus definition of clinical professional societies, we calculated experience of "physiologic childbirth" – labor that starts on its own at term, proceeds without pain medications or medicine to stimulate labor, and ends with vaginal birth not assisted with vacuum extraction or forceps. While this is perhaps the birth experience that many women would like, we found that just 1 in 20 respondents had such a birth.

Vaginal and Cesarean Birth

Overall, 3 in 10 respondents gave birth by cesarean, and 7 in 10 had vaginal births. Cesareans were almost evenly divided between initial or "primary" cesareans and repeat cesareans largely attributed to the fact of the past cesarean rather than a new indication. Women with midwives as prenatal care providers were considerably less likely to have a

cesarean birth than women with obstetrician prenatal care providers, overall and also when looking just at more comparable low-risk first-birth cesareans.

About 6 of 7 women with one or more cesareans in the past again gave birth by cesarean. Nearly half who had a repeat cesarean were interested in planning a vaginal birth after cesarean (VBAC). However, about half who were interested said they had not had the option to plan a VBAC, mostly due to refusals by providers and hospitals rather than current health concerns. White women had twice the rate of VBAC as Black women, and women with midwives as prenatal care providers were far more likely than women with obstetricians to have a VBAC.

We asked women with one or two past cesareans a validated sequence of questions to understand decision-making experiences. Those who had had a discussion with their care providers about a possible repeat cesarean reported receiving skewed information and recommendations favoring the procedure rather than a VBAC. Just 1 in 10 women who had such discussions had a VBAC, compared with 3 in 10 who did not have such a discussion.

Respectful and Disrespectful Treatment

We asked whether the women had experienced unfair treatment during their hospital stay for childbirth because of their race or ethnicity, because of the language they spoke or because of the kind of insurance they had or their lack of insurance. Most participants did not identify such concerns. Among the small numbers identifying concerns, there were significant differences within subgroups showing clear advantages for White women, English-speaking women and women with private insurance relative to their counterparts.

We also asked whether during the hospital stay for birth the women had experienced harsh language and rough handling from personnel. Nearly 1 in 10 responded affirmatively to each of these, with little variation across many variables with respect to use of harsh language and slightly more variation with respect to rough handling. Women who were Black or primarily spoke an Asian language at home were more likely than White women or Latinas to report both types of ill treatment.

We also looked at pressure to experience several major interventions: labor induction, epidural analgesia in laboring women and cesarean birth. About 1 in 10 reported pressure to have an epidural, and to have a cesarean, while experience of pressure to have labor induction was somewhat higher. Women who had labor induction and who had cesarean birth were more likely to have experienced pressure than those who did not.

Finally, most women reported that they had been granted autonomy in decisions about how their birth would proceed, had been well supported and had experienced good communication during the hospital stay for giving birth. However, women covered by Medi-Cal were more likely to identify concerns in all three areas than women with private insurance.

Postpartum Experiences

Overall, 1 woman in 10 did not have any postpartum office visit. Women with Medi-Cal coverage were more likely than women with private insurance to have no visits. Black women had the highest number of visits, perhaps reflecting a greater burden of morbidity at this time. Among women with postpartum visits, 2 or more in 3 reported having been asked about several important issues during this period.

Compared with women with private insurance, women with Medi-Cal coverage were less likely to have sources of both emotional and practical support since the birth of their babies, with nearly 1 in 5 saying that they never had either source of support.

About 1 woman in 3 planned to stay home with their babies. Within 4 months of the birth, more than 4 in 5 women with a paid job at the time of the survey reported they were working

for pay. Among women who assumed a paid job, fewer than half said that they had stayed home as long as they liked.

About 2 in 3 respondents intended to exclusively breastfeed as they came to the end of their pregnancy, and about 6 in 10 were doing so a week after the birth. Nearly all women felt that the hospital staff had been quite supportive of breastfeeding. About 6 in 10 women who were breastfeeding at 1 week and not at the time of the survey reported not having breastfed as long as they liked. Overall, fewer than 3 in 10 respondents who participated at six or more months after giving birth met the consensus recommendation of leading health professional organizations for exclusive breastfeeding for the first 6 months.

Fully 4 in 5 Medi-Cal beneficiaries reported no out-of-pocket costs for maternity care providers and hospital care. However, more than 1 woman in 3 with private insurance reported costs between one and five thousand dollars, with 1 in 7 citing costs above this range.

Maternal Mental Health

We included in our questionnaire the Patient Health Questionnaire for Depression and Anxiety (PHQ-4). This validated, widely used screening tool has subscales for depression and anxiety, and the composite is a marker for severity of psychological distress. Respondents completed the questions with reference to "in the past 2 weeks" (i.e., in the postpartum period) as well as, among prenatal topics, "during your recent pregnancy." One woman in five screened positive for anxiety prenatally, and 1 in 10 screened positive for anxiety postpartum. About 1 in 10 screened positive for depression prenatally, and this figure dropped several percentage points in the postpartum period. About 1 in 10 scored as experiencing moderate psychological distress and about half that as experiencing severe distress during pregnancy. The postpartum measure for psychological distress resulted in levels that were about half that of prenatal distress. There was a tendency for higher proportions of Black women to screen positive and have symptoms of anxiety and depression and to score as having greater severity of psychological distress at both time periods in comparison with other racial/ethnic groups. These achieved significance in the case of prenatal anxiety, depression and moderate or severe psychological distress. With the exception of postpartum anxiety, there was a tendency for a higher proportion of women with Medi-Cal coverage to screen positive for the conditions during pregnancy than women with private insurance, and this achieved significance in the case of prenatal depression.

Many women reported receiving counseling or treatment for emotional or mental well-being. Women were more likely to receive such help if they had positive screens or with increasing severity of psychological distress. However, most women facing apparent challenges with these conditions did not receive standard types of help.



Introduction

Introduction

The *Listening to Mothers* surveys focus the discussion of maternity care on those who care about it the most: mothers themselves. National *Listening to Mothers* surveys carried out since 2002 have documented for the first time at the national level many experiences, outcomes and perspectives of childbearing women from before pregnancy through the postpartum period that had been recorded only at the clinical, community or state level – if at all – in the past.

Our *Listening to Mothers in California* survey was adapted to California needs and opportunities, including current maternity care issues in the state and the distinctive population of birthing women who, in comparison with our national surveys, are much more likely to be Latina and less likely to be Black. For example, in response to concerted statewide policy initiatives to reduce avoidable cesareans, we explored mode of birth and antecedents at length, as well as related care practice recommendations provided by a recent toolkit from the California Maternal Quality Care Collaborative. We oversampled Black women to better understand their views and experiences. We had a racially and ethnically diverse sample, and we were delighted to be able to offer the survey in Spanish for the first time, in addition to English. Responding to the current communications environment, women could complete the survey in either language by themselves on any device or with a trained interviewer. The state-level survey also enabled us to draw a sample from birth certificates and weight the data to be more reflective of the general population of women who were eligible for our study.

The survey research reported here was led by the National Partnership for Women & Families and developed in collaboration with investigators from the University of California, San Francisco (UCSF), Center on Social Disparities in Health, and the Boston University School of Public Health. Quantum Market Research, Inc. administered the survey.

WHO WAS INCLUDED IN OUR SAMPLE, AND HOW WE REACHED THEM

Survey

With the support of the Committee for the Protection of Human Subjects of the Office of Statewide Health Planning and Development and the Vital Statistics Advisory Committee of the California Department of Public Health, analysts at UCSF drew a representative sample of births that occurred from September 1, 2016, through December 15, 2016, from birth certificate files, excluding teens less than 18, women with out-of-hospital births, women with multiple births and non-residents of California. We oversampled Black women, women with midwifery-attended births and those with vaginal births after cesarean to better understand the experiences, outcomes and views of women within these smaller groups.

The survey was conducted from February 22 through August 15, 2017. Mailings (and then emails, text messages and telephone calls, as possible) invited sampled women to participate on their own online using any device or with an interviewer via telephone. All 2,539 survey participants were 18 years or older, could respond to a survey in English or Spanish, and had given birth in a California hospital to a single baby who was living with its mother when the women participated in the survey. We excluded mothers with multiple births, those who gave birth in out-of-hospital settings and women who were not living with their babies, as their experiences differ in important respects from other mothers. Additionally, the numbers that would have been included in the sample would have been too small to analyze as distinct groups. On average, the survey took a bit longer than 30 minutes to complete.

“

Before taking this survey I didn't know I had more options for a better birth giving experience.

”

”

Thank you for your concern for all women because for us it's very important to be taken into consideration.

”

Survey Questionnaire

The survey questionnaire, as well as outreach materials inviting sampled women's participation, were customized to the current state context, pilot tested and refined over several iterations. The complete *Listening to Mothers in California* survey questionnaire is available at both NationalPartnership.org/LTMCA and chcf.org/listening-to-mothers-CA. Individuals citing *Listening to Mothers in California* results are encouraged to consult the questionnaire to understand the specific questions posed, choices offered and which groups of women (i.e., the "base") responded to the questions, whether all mothers or specific subgroups (e.g., questions about experiences with breastfeeding were only asked of mothers who initiated breastfeeding).

Women's Survey Participation Experience

Respondents participated from 2 to 11 months after giving birth. Of those who completed the survey, 34% did so online, 28% did so by phone with an interviewer and 39% used both methods (typically starting on their own and finishing with an interviewer). In all, 81% completed the survey in English and 19% in Spanish. There were many indications that *Listening to Mothers in California* participants were exceptionally engaged in the survey and interested in having their voices heard. This is reflected in their willingness to take more time answering questions than typical survey respondents and the hundreds of women who took the time to respond to open-ended questions, including comments about their appreciation for our effort to systematically understand and share their views and experiences. Many similarly communicated their appreciation to survey interviewers.

Data Weighting

To develop a statewide profile of childbearing women aged 18 and older and giving birth to single babies in California hospitals, analysts at UCSF used demographic and other relevant variables from the 2016 Birth Statistical Master File (final file of all certificates for the year) to adjust and weight the *Listening to Mothers* survey data to the birth file for the full year.

Demographic Profile of Respondents

Despite exclusions, weighted data for our survey participants closely resemble California statewide 2016 birth certificate data in terms of such variables as race/ethnicity, maternal age, birth attendant, mode of birth and number of times the woman had given birth (see Appendix B).

Supplementary Material in Appendices

Appendix A provides a detailed methodology of the survey. Appendix B compares weighted results from birth certificates of our study participants to statewide 2016 results from the Birth Statistical Master File. We also include parallel national birth certificate data for 2016, suggesting some distinctive attributes of the population of childbearing women in California. Appendix C identifies some reasons for discrepancies between our results and some other sources, including some practices for which women's self-reports may provide more accurate information, for example, due to undercounting in official sources, identified through validation studies.

Reading the Text, Tables and Figures

Percentages may not always add up to 100% because of rounding, the acceptance of multiple answers from respondents, or exclusion of rarely chosen or less germane response categories in reporting.

The term "base" is used to identify the total number of respondents eligible to answer that question. Because many questions are only asked of a subgroup of the sample (e.g., only

“

Thanks for caring enough to have a survey to ask new moms questions like these.

”

“

It was nice talking about my birth and my experience I had with my baby.

”

“

Thanks for giving us mothers the opportunity to express our concerns and questions through these surveys ... with a purpose of providing better medical services and be able to have a good experience in the birth of a baby.

”

women who had had labor induction were asked about the reason for the induction), some results may be based on small sample sizes. Caution should be used in drawing conclusions from results based on smaller numbers of women. Readers should also be alert to exactly which population the tables and text refer, because in many cases we probe the data through several layers. Numbers provided for the same base (for example, all women) vary slightly as all eligible women did not respond to every item.

We set the significance threshold for testing group differences at the relatively stringent .01 level. When figures and tables include subgroup comparisons, an asterisk indicates comparisons where the differences are statistically significant at the $p < .01$ level based on a chi-square test with adjustment for weighting. When comparisons noted in the text are significant at the $p < .01$ level, this is noted in the text.

Terms for leading race/ethnicity groupings in this and other *Listening to Mothers in California* reporting align with widely used conventions. "Latina" in our reporting indicates women who identified on the survey as "Hispanic or Latina" (50% of weighted survey respondents). "White" indicates women who identified as "White" and did not select "Hispanic or Latina" (27%). "Asian and Pacific Islander" indicates women who identified as "Asian" or as "Native Hawaiian or other Pacific Islander" and did not select "Hispanic or Latina" (16%). "Black" indicates women who selected "Black or African American" and did not choose "Hispanic or Latina" (5% of weighted responses but oversampled to 9% of unweighted responses to increase our ability to understand this group). Numbers were too small to present data separately for women who selected "American Indian or Alaskan Native," "something else" (with a write-in response) or who selected more than one race.

In payer analyses, "Medi-Cal" indicates a woman whose 2016 birth was covered by Medi-Cal through a claim in the Department of Health Care Services Management Information System/Decision Support System (MIS/DSS) Warehouse (47% of weighted responses). "Private" indicates a woman who selected a private insurance response choice on the survey (44%) and did not have a paid Medi-Cal childbirth claim. There were too few respondents across other insurance categories to analyze, including less than 1% with no insurance.

Selection of Quotations from Survey Participants

All women who participated in the *Listening to Mothers in California* 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 women 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 contrasting quotes 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 of women, but that nonetheless impacts many mothers or babies statewide, since nearly 500,000 women give birth annually in California. The quotations in this report reproduce the women's exact words, though we have in some cases corrected spelling and punctuation. A qualitative researcher is separately analyzing these open-ended responses.

Advisory Council

We convened an advisory council, composed of multi-stakeholder leaders in California and nationally. Council members provided invaluable feedback on a draft of the full questionnaire, which led to many meaningful refinements. We also called on many individual council members to provide specialized types of guidance through the various phases of the project. We look forward to working with council members to share survey results and reporting products and to use survey results to improve policies, programs and practices throughout the state.

“

[I] [h]ope this is a fruitful study, and can improve the childbirth experience for women and babies. I am a physician and did not think there was too much to it before childbirth and only after going through it do I realize how much is uncontrollable during labor/delivery and the emotional rollercoaster/pressures that come with the experience.

”

Project Responsibility

The National Partnership for Women & Families led this work, in collaboration with investigators from UCSF and the Boston University School of Public Health. Together, this team designed the adaptation of the national *Listening to Mothers* survey methods to the state-level context. The team prepared applications to the various state agencies and institutional review boards (see below) for approval to carry out the work and gain access to essential data for this project. The investigator team developed the survey questionnaire, with guidance from our advisory council and many childbearing women who provided feedback on iterative versions, and designed the study protocol. This team met regularly throughout the project to assess progress, plan next steps – including those related to the many innovations new to this *Listening to Mothers* survey – and make decisions.

The UCSF team took responsibility for data management, including designing the sampling plan, overseeing questionnaire programming, and receiving and managing data from all sources (e.g., vital statistics, survey, Genetic Disease Screening Program, Department of Health Care Services). The UCSF team also led the pilot testing of the survey questionnaire and outreach materials directed to sampled women in both English and Spanish. It took the lead on cleaning, coding and weighting the data and producing initial unweighted and weighted frequencies of all measures. That team also independently checked results based on complex coding and carefully reviewed large sections of the report.

Quantum Market Research, Inc. administered the survey, including programming the questionnaire in English and Spanish in Qualtrics, finding and recruiting sampled women, interviewing women who participated by telephone, following up with thank-you gift cards and managing the operations database to track participation status.

Dr. Declercq at Boston University was the lead data analyst. Teams from the National Partnership for Women & Families and Boston University took the lead in developing this report, a digital version of this report and several issue briefs, and collaborated with project officers and California Health Care Foundation and National Partnership communications personnel to develop other survey reporting products.

The Committee for Protection of Human Subjects of the Office of Statewide Health Planning and Development is the IRB of record for this project, and the Human Research Protection Program at UCSF also approved this project. The Vital Statistics Advisory Committee of the California Department of Public Health (CDPH) has approved and provided access to both initial birth certificate data for sampling, contact information of sampled women, and analysis variables and selected variables from the 2016 Birth Statistical Master File for data weighting. The Genetic Disease Screening Program at CDPH approved and provided access to supplementary contact information for sampled women. The Data and Research Committee of the Department of Health Care Services approved and provided access to supplementary contact information for sampled women and, after data collection was complete, analysis variables from the MIS/DSS Warehouse for sampled Medi-Cal beneficiaries.

The California Health Care Foundation and the Yellow Chair Foundation generously funded the *Listening to Mothers in California* survey. In addition to financial support, project officers with both funders have been engaged in all phases of the development and reporting of the survey, contributing substantively to the quality and success of this work.

“

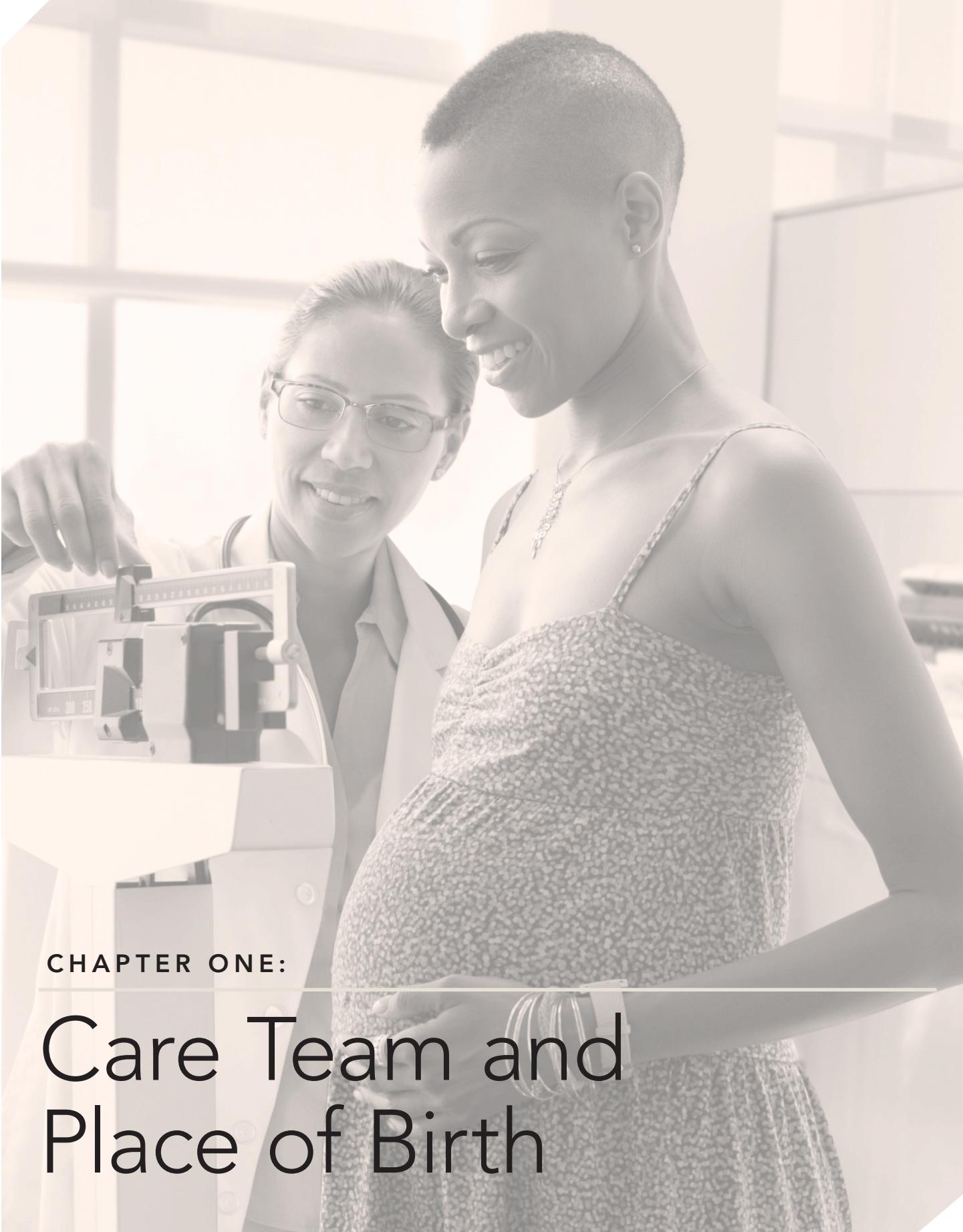
I'm excited about this research study!

”

“

Thanks for giving me the opportunity to comment on our experience of being a mother.

”



CHAPTER ONE:

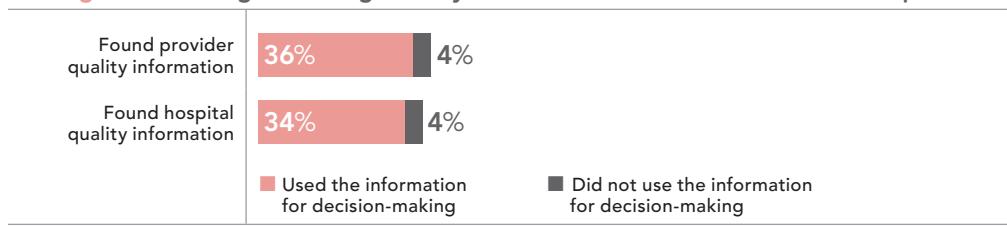
Care Team and Place of Birth

Prenatal and Childbirth Maternity Care Providers

Comparative Quality Information About Prospective Care Maternity Providers and Hospitals

More than 1 in 3 women reported she had found information to compare the quality of prospective maternity care providers (40%) or hospitals (38%). Of those who found information, large majorities used it to help make care arrangements (see Figure 1). There were no appreciable differences on information seeking by race/ethnicity or insurance status.

Figure 1: Finding and Using Quality Information About Providers and Hospitals



Base for finding information: All women (n=2518)

Base for using information: Women who found comparative quality information (n=1309)

Note: "Not sure" not shown.

About one-third (32%) of women sought information about the cesarean rate of hospitals where they might have their baby. First-time mothers with private insurance (46%) were more likely than first-time mothers with Medi-Cal (35%) or experienced mothers with private insurance (26%) to seek information on cesarean rates ($p < .01$). Of those women who sought such information, most (86%) reported being able to find it.

Choice of Maternity Care Provider for Prenatal Care

We asked women if they had a choice of prenatal care providers, and a large majority (80%) indicated they did have a choice, while 19% indicated they had a provider assigned to them, and 1% reported having received no prenatal care from a maternity care provider. Women with Medi-Cal coverage were twice as likely (26% to 13%; $p < .01$) as women with private insurance to report not having had a choice. Latina (23%) and Black women (23%) were more likely than White women (12%) to report not having had a choice ($p < .01$) (Figure 2).

“

I took a lot of time to research the best hospital to deliver a baby at. I went to three different hospital orientations before I decided on one hospital. Then I selected an OB-GYN who is affiliated with the hospital I selected.

”

”

I put that I didn't explore info about local hospitals, care providers and C-section rates because it was asking about THIS birth and I had already done all of that with my first birth.

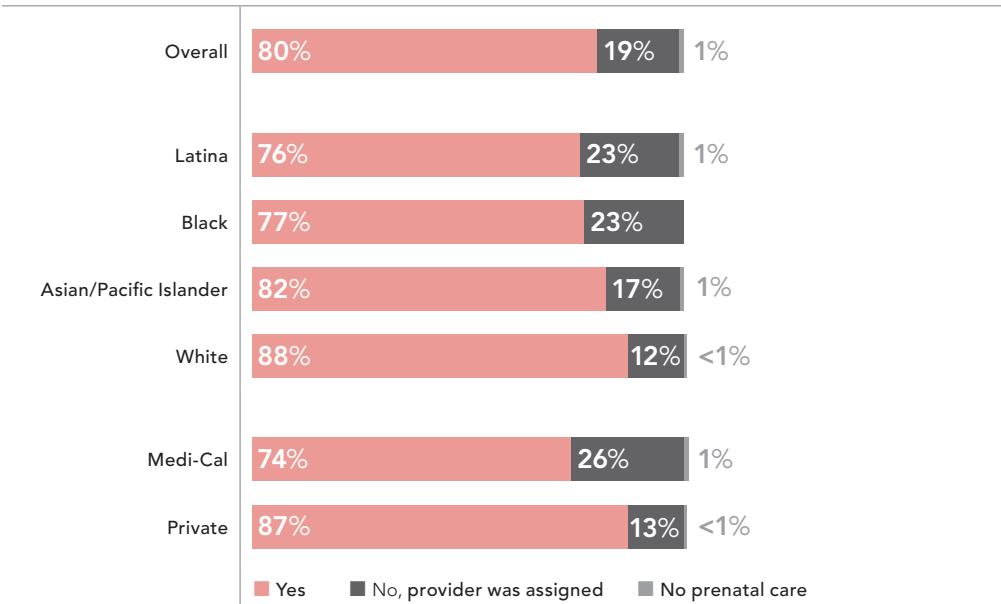
”

”

I loved that I could choose my doctor and he listened. ... With my other 3 babies I was on Medi-Cal. I had VERY limited choices of doctors.

”

Figure 2: Choice of Prenatal Care Provider, by Race/Ethnicity and Payer



Base: All women (n=2513)

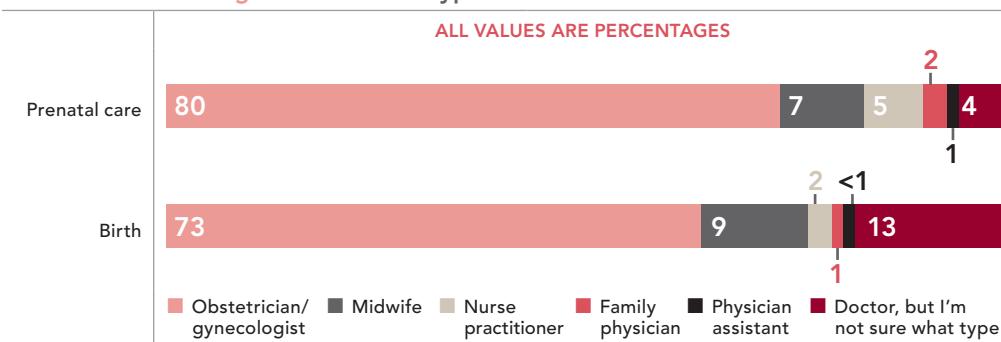
p < .01 for difference by race/ethnicity and payer

The proportion of Black women with private insurance who lacked choice in maternity care providers (18%) was similar to that of White women with Medi-Cal (20%). Women who indicated they did not have a choice of prenatal provider were less likely to report having an obstetrician (71%) than those who reported having a choice (83%) and more likely to report having a midwife (10%) or nurse practitioner (9%) than those with a choice (midwife 7%, nurse practitioner 5%) as their primary prenatal provider (p < .01). (In the context of hospital births in California, midwives were essentially all certified nurse midwives, CNMs; birth certificates of survey participants indicate 381 CNMs, one RNM and one LM.)

Prenatal Care Providers

A large majority (80%) of women reported having an obstetrician as their main prenatal care provider, followed by a midwife (7%), nurse practitioner or nurse (5%), a doctor (but they were uncertain of the type) (4%), a family physician (2%) or physician assistant (1%) (Figure 3). When comparing demographic groups, Asian and Pacific Islander women (88%) had the highest rate of prenatal care with obstetricians, while White women (12%) had the highest rate of care with midwives, and Black women (8%) were most likely to rely on nurses who were not midwives as their prenatal care provider (p < .01).

Figure 3: Provider Type for Prenatal Care and Birth



Base for main prenatal care provider: All women (n=2519)

Base for birth provider: All women (n=2506)

Note: "Other" not shown.

“

During my prenatal care I had the option to use my OB-GYN or a nurse-midwife that I met with on my first visit. I really like both, but chose the midwife because she seem to have more time to spend and was really helpful with resources and wanting to coordinate care with my outside therapist due to ongoing depression issues.

”

Birth Attendant

When asked who delivered their baby, respondents most commonly cited obstetricians (73%), followed by a doctor of an unknown type (13%) and a midwife (9%) (Figure 3). When examined by race/ethnicity, clear differences emerged. Obstetricians were consistently the most common birth attendants, but their usage varied from 81% among Asian and Pacific Islander mothers to 67% among Latina mothers ($p < .01$). Midwives most commonly attended the births of White women (11%) and women with private insurance (12%), and especially White women with private insurance (14%) ($p < .01$). Few women definitively reported having had a family physician as their birth attendant (1%). Having had a birth attendant who was a doctor of unknown type was much more common among Latina women (18%) and Black women (16%), as was identifying “other” attendant.

Consistency of Type of Maternity Care Provider Between Prenatal Care and Birth

Did women have the same type of provider for prenatal care and their birth? The answer depends on the type of provider they primarily had for their prenatal care. If their prenatal care provider had been an obstetrician (80%) or a doctor of some type (65%), the answer was typically “yes.” In the case of midwives, a plurality (44%) of women with a midwife for prenatal care had a midwife birth attendant, though 35% had an obstetrician attend their birth. Regarding smaller categories of prenatal providers (e.g., family doctors, nurses or physician assistant), an obstetrician or doctor of unknown type usually attended the birth (Table 1).

Table 1. Birth Provider Type, by Prenatal Care Provider

Which type of maternity care provider delivered your baby?	Which type of maternity care provider most often provided your care during pregnancy?						Total
	Obstetrician-gynecologist	Family physician	Doctor, not sure what type	Midwife	Nurse	Physician assistant	
Obstetrician-gynecologist	80%	42%	21%	35%	64%	46%	73%
Family medicine doctor	1%	20%	1%	1%	0%	0%	1%
Doctor, not sure what type	10%	27%	65%	16%	16%	29%	13%
Midwife	6%	6%	6%	44%	14%	14%	9%
Nurse	2%	3%	1%	2%	3%	4%	2%
Physician assistant	0%	0%	0%	1%	0%	4%	0%
Other	2%	2%	7%	2%	4%	4%	2%
Total	80%	2%	4%	7%	5%	1%	

Base for main prenatal care provider: All women (n=2519)

Base for birth provider: All women (n=2506)

Use of and Interest in Various Types of Maternity Care Providers and Doulas

Preference for a Specific Type of Prenatal Care Provider

We asked women how important it was for them to have had the type of provider they had for prenatal care. Among the main providers of prenatal care, a large majority with obstetricians as prenatal care providers thought it was “very” or “extremely” important to have had an obstetrician (81%), while majorities felt it was “very” or “extremely” important

After seeing a midwife for 9 months, I had a random doctor I never met deliver the baby.

“

The only part that I wish was different was I wish my doctor was available during birth.

”

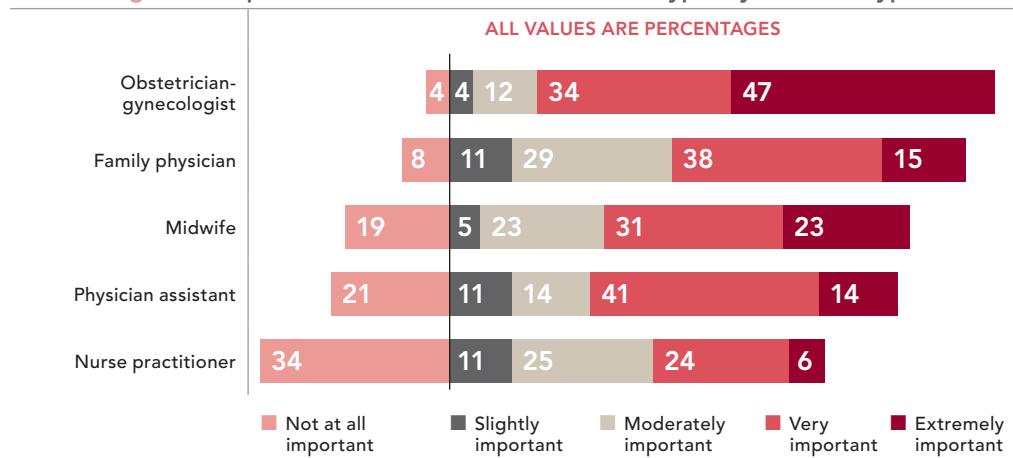
“

I loved my OB-GYN. She was kind, patient and allowed me to make all the decisions. Care was top notch.

”

to have had a midwife (54%) or family doctor (53%). Family physicians, physician assistants and nurse practitioners had distinctive patterns, based on smaller numbers ($p < .01$ for preference differences by provider) (Figure 4).

Figure 4: Importance of Prenatal Care Provider Type, by Provider Type



Base: Women who had obstetrician-gynecologist as main prenatal care provider (n=1961)

Base: Women who had family physician as main prenatal care provider (n=53)

Base: Women who had midwife as main prenatal care provider (n=219)

Base: Women who had physician assistant as main prenatal care provider (n=26)

Base: Women who had nurse-practitioner as main prenatal care provider (n=141)

$p < .01$ for difference by provider type

When asked if they would have preferred a different type of prenatal provider, 12% of respondents indicated they would have. Not surprisingly, this was a more common response among women who reported they didn't have a choice of provider (21%) than among those who did (9%) ($p < .01$). The desire for a different type of provider was greatest among those who had a nurse who wasn't a midwife (43%) or family doctor (33%) and least common when the mother reported having a midwife (14%) or obstetrician (8%) as her prenatal provider ($p < .01$). When asked which type of prenatal provider they wished they could have had, the most common response was midwife (47%) or obstetrician (30%).

Of the subset of women (12% of sample) who would have preferred a different type of prenatal provider, the most common preference among those who had used obstetricians was midwife (71% who preferred another type). Among women who had used a midwife (84% who preferred another type), family doctor (76%) and nurse (68%), the most common preference was for an obstetrician.

Barriers to Use of Midwives

We investigated reasons for not using midwives under two conditions. First, we asked women who indicated they would have preferred a midwife for their prenatal care why they didn't have one, and the responses are shown in Figure 5. The most common reason, insurance concerns (56%), could be related to both inadequate knowledge and access issues such as incomplete panel directories and out-of-network practices. Other selected reasons appeared to be related to inadequate knowledge, including uncertainty about access to medical care if needed (16%) and lack of clarity about access to midwifery care in hospitals (13%) and to availability of epidural analgesia with midwifery care (11%). Other responses reflected lack of access: another type of provider had been assigned (27%) or a midwife was not available (25%). Finally, 1 in 4 (25%) felt they needed a doctor due to health problems.

“

I initially wanted a midwife, a doula and a birth center. Insurance wouldn't cover this so we went with the traditional OB and hospital route.

”

“

I switched providers around 32 weeks so I could be cared for by a midwife at [hospital name]. ... My husband and I chose to drive an hour each way to my appointments so I could have the best prenatal care and the birth experience I knew I would get there. I did not like either of the options I had in my town as both were very medically involved in the birth process.

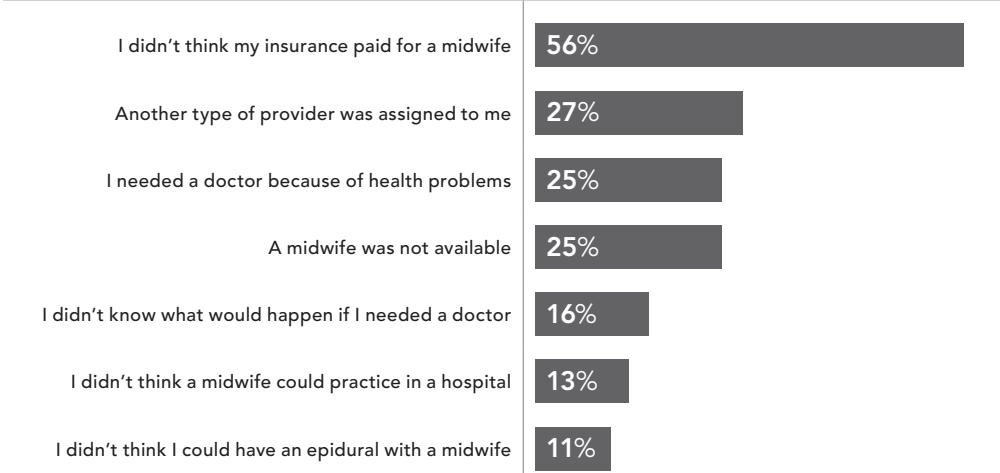
”

“

Most frustrat[ing] for me is that I always wanted midwifery care for the birth of my child, but my insurance didn't offer it.

”

Figure 5: Reasons for Not Having a Midwife Among Women Who Wanted One

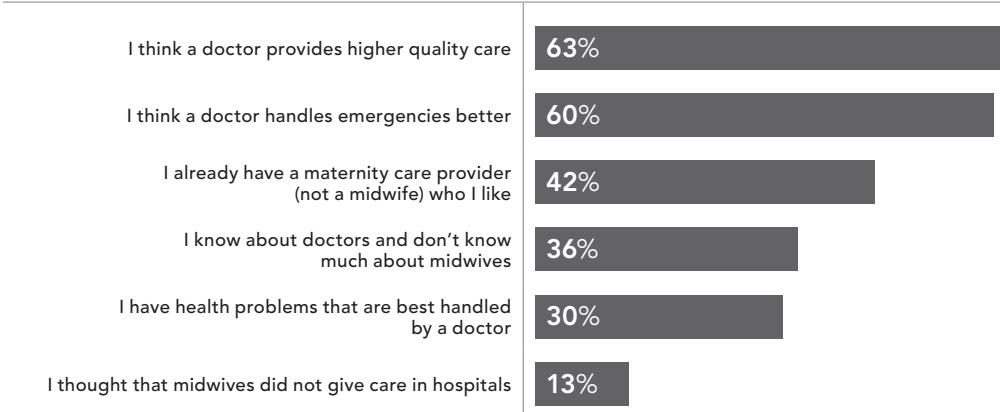


Base: Women who would have preferred, but did not have, a midwife for prenatal care (n=141)

Notes: "Other reason" not shown. Respondents could select more than one answer choice.

We also asked women how open they would be to having a midwife (with doctor care as needed) as their provider for a future pregnancy. Among those who definitely would not want a midwife (27%), we asked about possible reasons, and their responses are shown in Figure 6. The leading responses were based in beliefs that doctors provide higher quality care (63%) and handle emergencies better (60%).

Figure 6: Reasons for Not Wanting a Midwife In a Future Birth



Base: Women who would definitely not want a midwife in a future birth (n=595)

Note: "Other" not shown.

Two responses revealed additional knowledge deficits about midwifery: simply not knowing much about midwives (36%) and not realizing that midwives practice in hospitals (13%). About 2 in 5 (42%) women indicated that they already have a preferred provider, who is not a midwife. And about 3 in 10 (30%) identified having health problems that are best handled by a doctor.

Midwife for a Future Birth

In response to how open respondents would be to having a midwife as their maternity care provider (with doctor care if needed) for a future pregnancy, a majority (54%) indicated they would either definitely want a midwife (17%) or would consider a midwife (37%). Overall, six times as many women (54%) reported an interest in having a midwife as their maternity care provider should they have a future pregnancy than actually experienced a midwife as their

“

My health insurance covered midwives but they were out of network so would be much more expensive than an OB-GYN.

”

“

Everyone was telling me to get an OB-GYN, I didn't know what to do as this was my first one. I wasn't aware of a midwife.

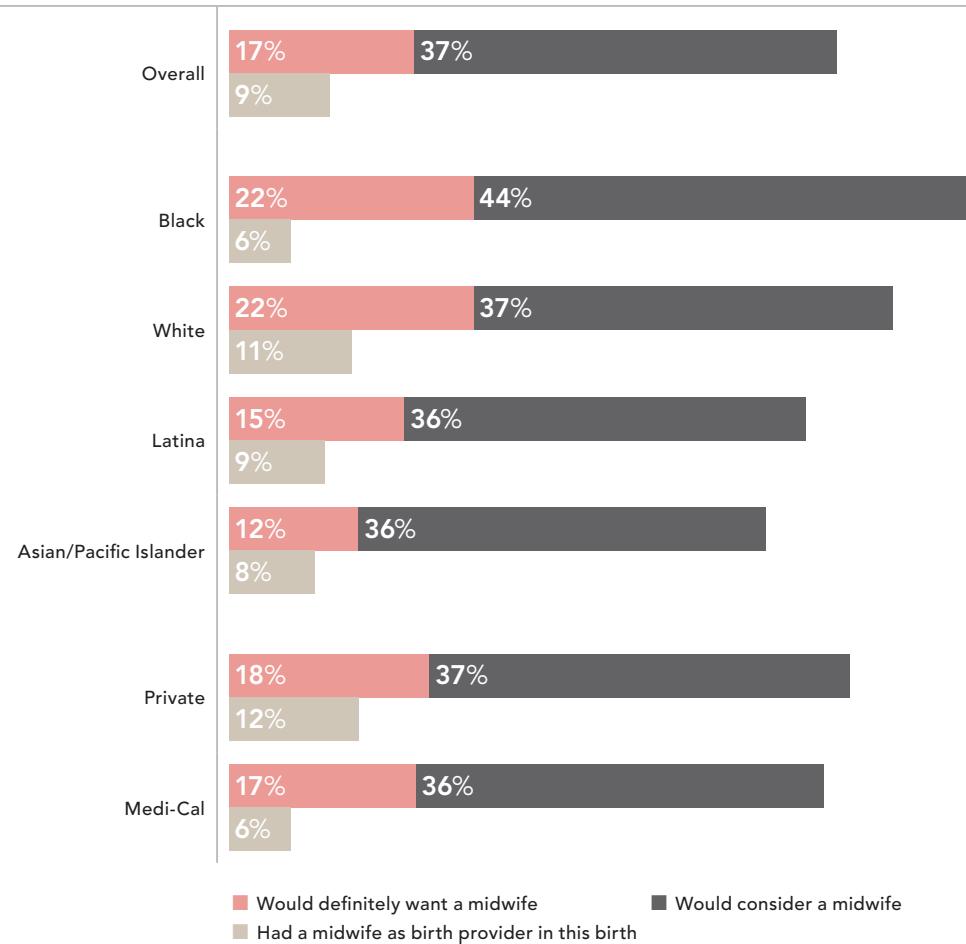
”

“

My health insurance did not cover the midwife and facility I wanted to deliver with.

birth attendant (9%). When broken down by race/ethnicity, the contrast between actual and desired care was greatest among Black women – 66% open to the idea in contrast to just 6% who had had a midwife birth attendant. Asian and Pacific Islander women expressed the least interest (48%), which was still six-fold greater than their actual use. The interest of women covered by Medi-Cal and private insurance was similar (54%–55%), though about twice as many privately insured as Medi-Cal-covered women had actually used midwives (Figure 7). Overall, 27% would definitely not want a midwife in the future, and 20% were not sure. Among women who had had a midwife as their 2016 birth attendant, 84% were open to the idea of using one again, while among those who had had an obstetrician, 49% were open to using a midwife in the future (52% among women with a vaginal birth).

Figure 7: Preference for Midwife in the Future and Actual Midwife Use, by Race/Ethnicity and Payer



Base for wanting a midwife in the future: All women (n=2480)

Base for having a midwife as birth provider in this birth: All women (n=2506)

Notes: Data shown for use of midwife as birth attendant. Midwives were the main prenatal care providers for 7% of survey participants. Differences within groups were not significant.

"Would definitely not want this" and "Not sure" not shown.

Support from a Doula

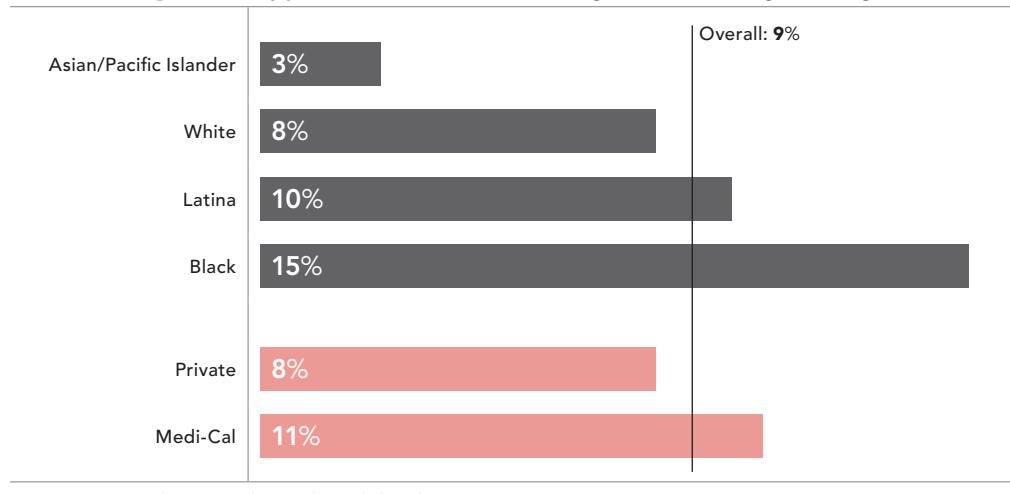
We described a labor doula as “a trained labor companion who gives comfort, emotional support, and information during birth. A doula **does not** provide medical care.” We asked women if they had received support from a doula during their recent birth experience. We asked those who reported receiving such support whether the labor doula had also provided support during pregnancy and after the woman had returned home after the birth. Overall, 15% indicated they received this support during labor, but we have concerns about this figure.

Use of labor doulas – as hired by families and through community- and hospital-based programs – appears to be growing in the United States. Our previous national survey found that 6% of women reported using labor doulas in 2011–2012.* Given that insurance coverage of doula support is extremely limited at this time and community- and hospital-based programs are not available in many communities, we tried to better understand this result. Survey telephone interviewers clarified that the doula role is not widely known in Latin America, and Spanish-speaking respondents in particular sometimes conflated this role with care provided by other personnel, such as a nurse or midwife. The interviewers observed that younger mothers appeared to have greater familiarity with the doula role than older mothers. This is supported by reported labor doula use by the language selected for completing the survey: 11% of those who chose the English version versus 33% who chose Spanish. Similarly – looking at primary language spoken at home – 9% speaking English reported labor doula use versus 32% of Spanish speakers. Those selecting other home language options also reported rates that appear to be elevated: 17% Asian, 16% English and Spanish equally, and 14% other. *Thus, we caution about our survey's overall doula results.* We suggest that the rate found among respondents who usually speak English at home (9%) is closer to actual doula use in California in 2016. We use this group for further doula analyses in this report, with notes indicating the analyses are based on this subgroup.

Looking at breakdowns limited to survey respondents who usually speak English at home, 4% reported having doula support prenatally, while giving birth and postpartum; 2% prenatally and while giving birth; <1% while giving birth and at home afterward; and 2% solely while giving birth.

Limiting further breakdowns to survey respondents who usually speak English at home, use of a labor doula ranged from 15% among Black women to 3% among Asian and Pacific Islander women ($p < .01$) and was 11% among Medi-Cal beneficiaries versus 8% in women with private insurance ($p < .01$) (Figure 8).

Figure 8: Support from a Labor Doula, by Race/Ethnicity and Payer



“

Our doula was the best thing about the care we got and I suspect the birth would have been drastically different without her support, influence, intervention and care.

”

”

Would be awesome if hospitals offered doulas as an option for women who wanted to deliver without pain meds. Pain meds introduce more potential complications.

”

”

I wish more information on midwives and doulas were available throughout pregnancy.

”

”

I think the doulas are a great asset for the team. It helps a lot of women to deliver vaginally.

”

*Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Herrlich, A. (2013). *Listening to Mothers III: Pregnancy and Birth*. New York: Childbirth Connection. Retrieved 27 February 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-iii-pregnancy-and-birth-2013.pdf>

Doula for a Future Birth

We asked respondents, "If you have a future pregnancy, how open would you be to having the support of a doula (trained labor companion) while you are giving birth?" Again, as noted above, limiting this analysis to respondents who generally speak English at home, overall, 57% expressed an interest in having doula support in the future, stating that they either definitely would want this (18%) or would consider it (39%) – about four-fold greater interest than actual use. Across race/ethnicity groups, interest ranged from that of Black women – 27% would definitely want a doula – to Asian and Pacific Islander and White women – 16% would definitely want a doula ($p < .01$). Both women covered by Medi-Cal (55%) and by private insurance (59%) expressed substantial interest ($p < .01$) (Figure 9). Overall, 29% would definitely not want a doula in the future, and 14% were not sure.

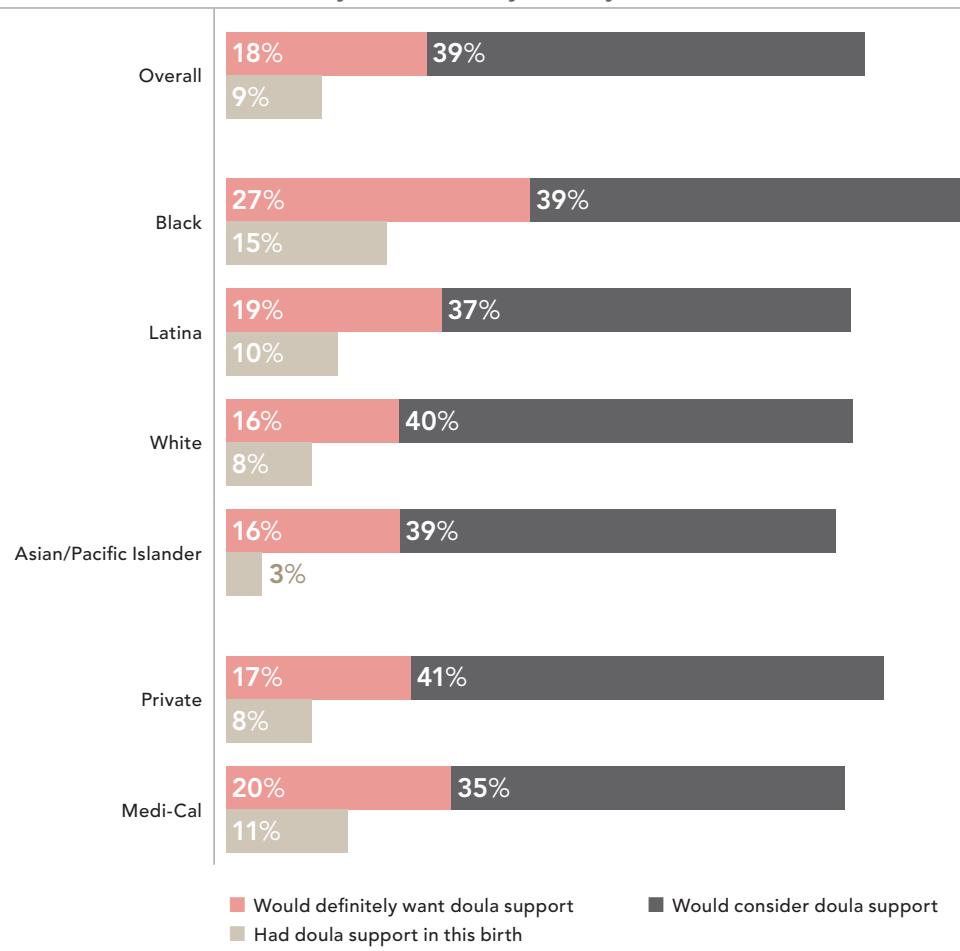
Among English-speaking women who had reported using a doula in this birth, 84% were open to using one in a future birth versus 46% of English speakers who did not use a doula for their recent birth. 50% of women who had a cesarean in their recent birth were open to the idea of a doula in a subsequent one, while 61% of those with a vaginal birth were.

“

Next birth I would love to have a doula and be better prepared mentally.

”

Figure 9: Preference for Doula in the Future and Actual Doula Use, by Race/Ethnicity and Payer



Base for wanting a doula in the future: Women who primarily speak English at home (n=1433)

Base for having a doula in this birth: Women who primarily speak English at home (n=1433)

$p < .01$ for difference in preference for doula by race/ethnicity and payer

$p < .01$ for difference in use of doula by race/ethnicity and payer

Notes: "Would definitely not want this" and "Not sure" not shown.

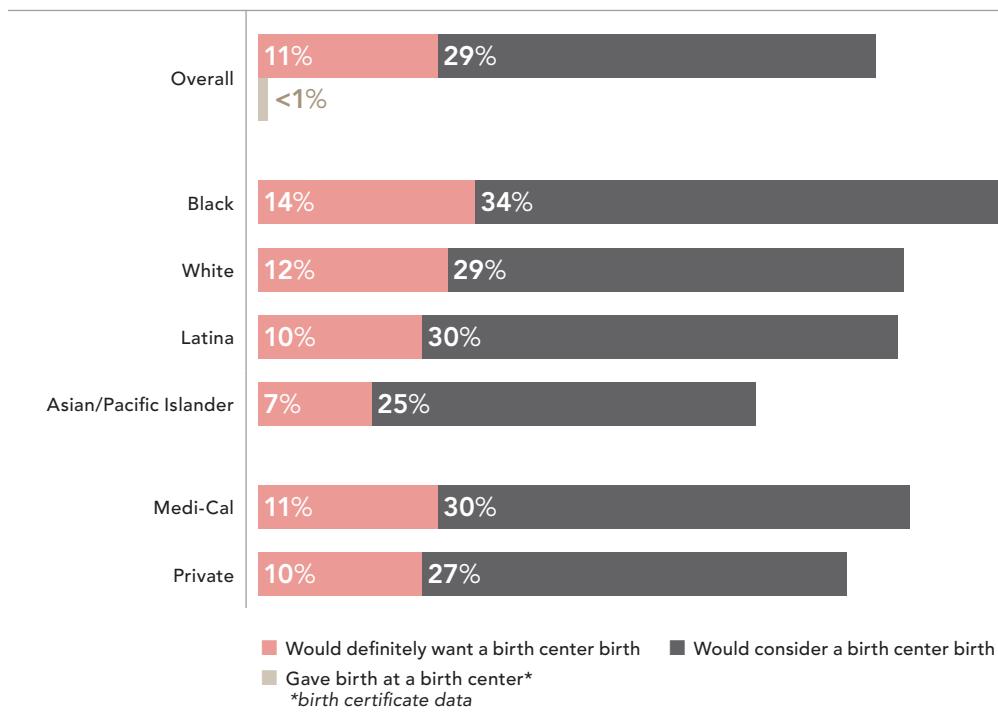
Interest in Out-of-Hospital Birth Settings

We limited our sample to women with hospital births. However, we asked respondents how open they would be to both birth center and home birth if they give birth in the future. Birth certificates indicate that 0.03% of women in California gave birth in a freestanding birth center, and 0.07% gave birth at home in 2016,* figures that are lower than the national average and notably lower than nearby states such as New Mexico, Oregon, Utah and Washington. Respondents expressed much greater interest in these options in the future compared with actual statewide use.

Freestanding Birth Center for a Future Birth

Overall, 40% expressed interest in a future birth center birth: 11% would definitely want this, and 29% would consider it. This interest greatly exceeded actual statewide use recorded in birth certificates. Black women expressed greatest interest in a future birth center birth (14% definitely, 34% consider), followed by White, Latina, and Asian and Pacific Islander women ($p < .01$). Interest among women covered by Medi-Cal was somewhat greater (only 34% definitely did not want it) than women with private insurance (47% definitely did not want this option) ($p < .01$) (Figure 10). Overall, 42% would definitely not want a birth center birth, and 19% were not sure.

Figure 10: Preference for Birth Center in the Future, by Race/Ethnicity and Payer, and Statewide Birth Center Use in 2016



Base: All women (n=2482)

$p < .01$ for difference by race/ethnicity and payer

Notes: "Would definitely not want this" and "Not sure" not shown.

*United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2007-2016, on CDC WONDER Online Database, February 2018. Accessed at <http://wonder.cdc.gov/nativity-current.html> on Mar 6, 2018.

“

I believe more options for a non-hospitalized midwifery type practice should be available to low-income families.

”

”

It would be nice to have more options in the future for pregnant women to have natural births. Rather than just hospital births with so much medications.

”

”

I would have been at a birth center with a midwife in a heartbeat if this had been an affordable option for us. I wish there had been coverage for these alternatives.

”

”

Midwives and birth centers should be more readily available and covered by insurance as an alternative to hospitals.

”

”

I wish midwives/birthing centers were more affordable.

”

”

Wish Medi-Cal let you choose birth place instead of hospital in area.

Home Birth for a Future Birth

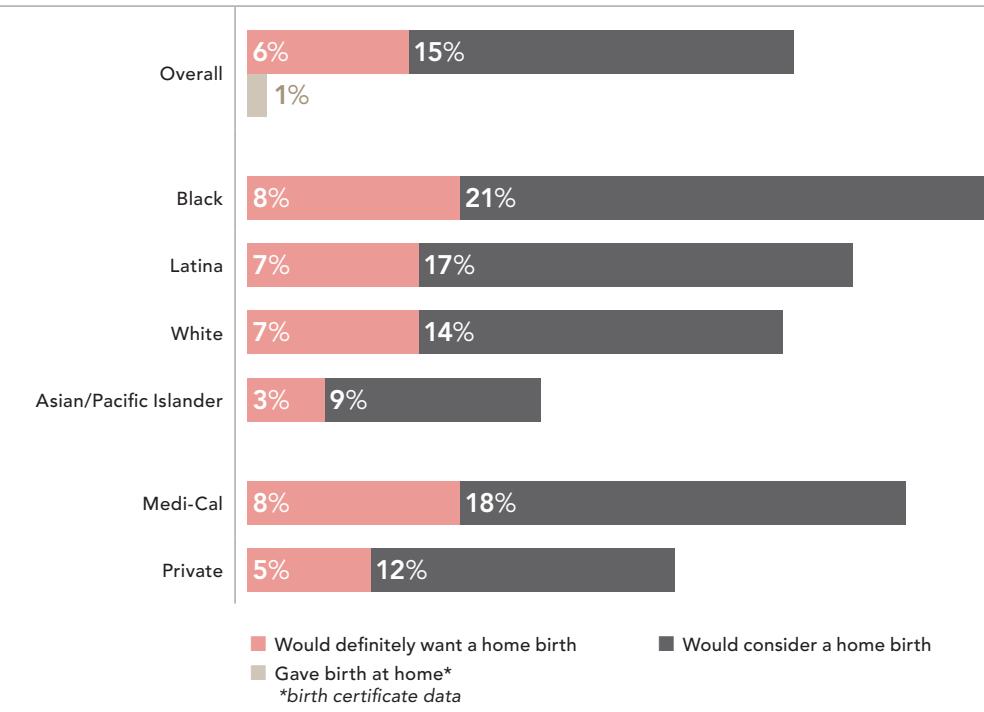
Overall, 22% expressed interest in a future home birth: 6% would definitely want this, and 15% would consider it. This interest greatly exceeded actual use in California in 2016, as recorded in birth certificates. Black women expressed greatest interest in a future home birth (8% definitely, 21% consider), followed by Latina (7%, 17%), White (7%, 14%) and Asian and Pacific Islander women (3%, 9%) ($p < .01$). Interest among women covered by Medi-Cal was considerably greater (8% definitely, 18% consider) than women with private insurance ($p < .01$) (Figure 11). Overall, 66% would definitely not want a home birth, and 12% were not sure.

“

I would like to have my babies at home but do not want to pay for a midwife/home birth and then also have to pay for a hospital visit if a transfer is needed.

”

Figure 11: Preference for Home Birth in the Future, by Race/Ethnicity and Payer, and Statewide Home Births in 2016



Base: All women (n=2482)

$p < .01$ for difference by race/ethnicity and payer

Notes: "Would definitely not want this" and "Not sure" not shown.

*United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2007-2016, on CDC WONDER Online Database, February 2018. Accessed at <http://wonder.cdc.gov/nativity-current.html> on Mar 6, 2018.

Knowledge About Practice Variation

We were interested in learning whether survey participants are aware of practice variation in maternity care. We asked women whether they think the quality of maternity care is generally the same for all obstetricians in their area. About one-third (34%) recognized that quality can vary greatly, while 34% stated that the quality of maternity care is pretty much the same, and 32% were not sure.

We also asked women whether they think the quality of maternity care is generally the same for all hospital maternity services in their area. A similar proportion (34%) again indicated that there can be big differences, while slightly more (37%) responded that the quality of maternity care is pretty much the same, and 29% were not sure.

“

For being voted the best hospital in my area the care could have been better.

”

“

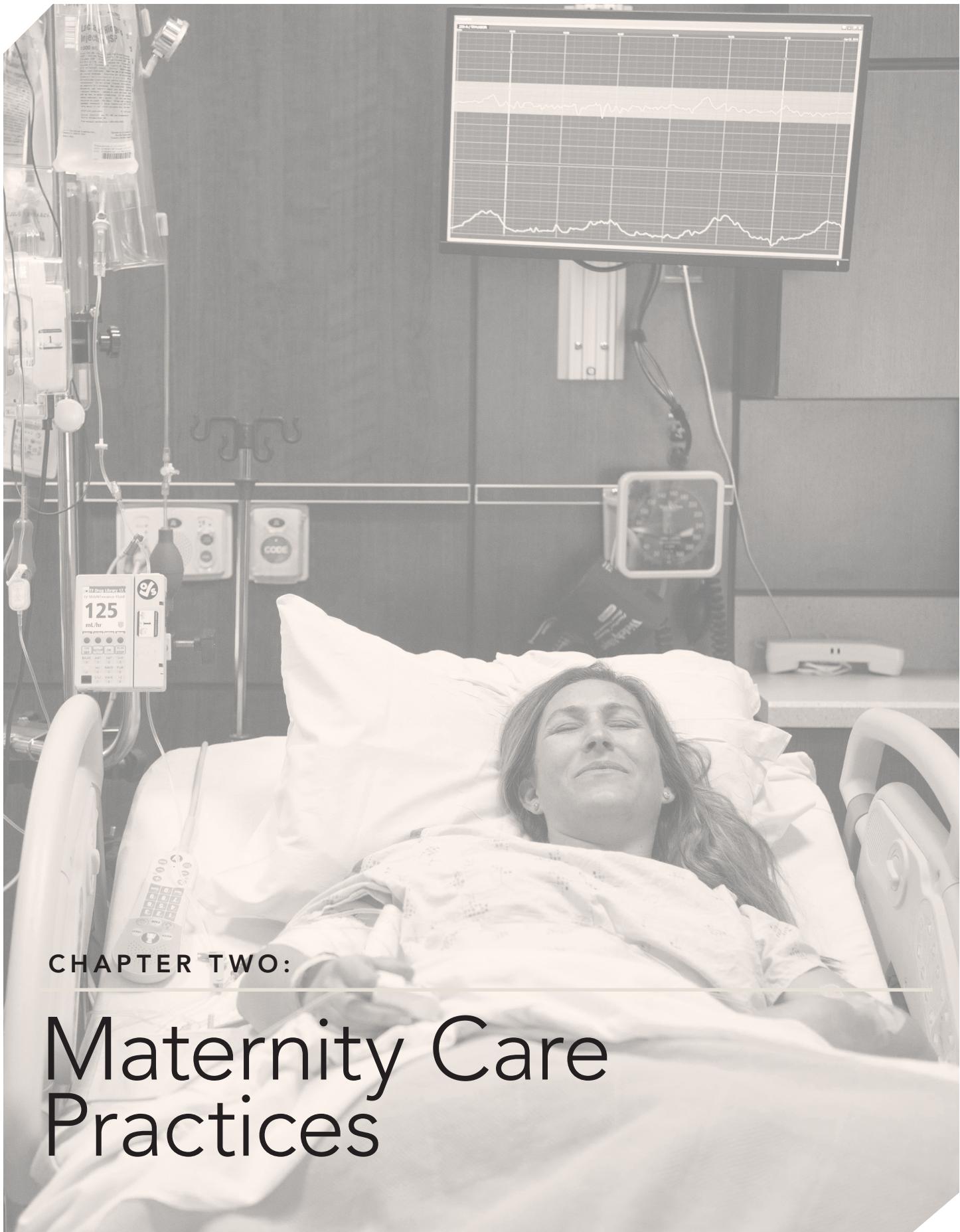
As I can see now, choosing the right hospital to deliver my baby [is important]. My first was delivered at [hospital name] and I had excellent care. The second time around I delivered at [different hospital name], and the help was not good at all.

”

“

My OB-GYN this pregnancy was amazing – always took the time to answer my questions and explain everything they were doing in every check up. With my first pregnancy I felt that the doctor did not care to know me and was always rushing my appointments with him.

”



CHAPTER TWO:

Maternity Care Practices

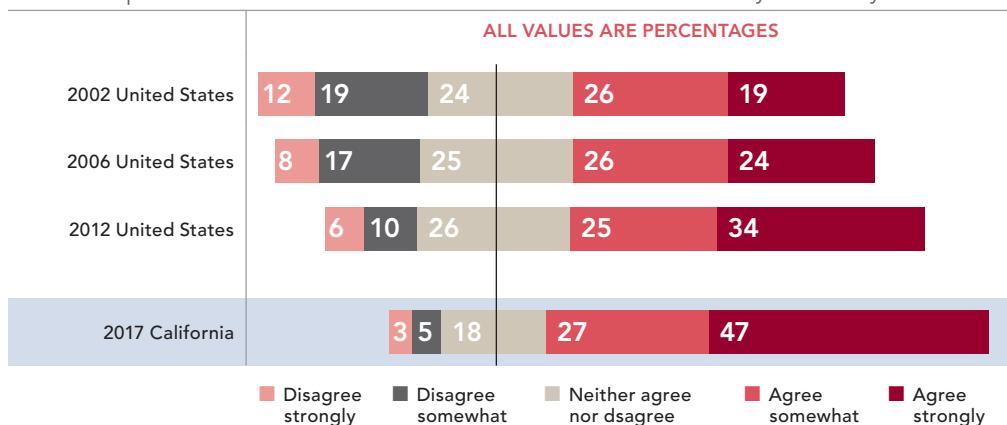
Women's Views About Intervention in Childbirth

We asked women to respond to a scale indicating their level of agreement or disagreement with the statement, "Childbirth is a process that should not be interfered with unless medically necessary." We also asked this question in the same way in all three national *Listening to Mothers* surveys.* Here we show that responses to this question track across all four surveys in a strongly linear pattern, with a caution that there are important methodologic and demographic differences. (For example, only the California survey is based on birth certificate sampling and was available in Spanish, and California has more Latina women and women born in other countries and fewer Black women than the nation as a whole.)

Figure 12 suggests that attitudes about childbirth may have shifted considerably over a 15-year span.

Figure 12: Childbirth Beliefs, United States, 2002–2012, and California, 2017

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



Base: All women (n=2451)

Steadily over this period, the "agrees" have grown and there has been consistent growth in "strongly agree," while the "disagrees" appear to be fading away. Regardless of the relationship between California and national results, three-quarters of women in the present survey either agreed strongly (47%) or agreed somewhat (27%) that birth is a process that should not be interfered with unless medically necessary, while fewer than 1 in 10 disagreed.

All racial/ethnic groups had high levels of agreeing strongly or agreeing somewhat, ranging from Black women (59% strongly; 82% overall) to White women (37% strongly; 66% overall). Women with Medi-Cal coverage were more likely to agree overall (79%) and agree strongly (56%) than women with private insurance (69% and 38%) ($p < .01$) (Figure 13).

Women's views on this matter create an important lens for considering the care that they actually received, as detailed in the present and following chapters.

*Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Risher, P. (2002). *Listening to Mothers: Report of the First National U.S. Survey of Women's Childbearing Experiences*. New York: Maternity Center Association. Retrieved 13 April 2018, from http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-i_2002.pdf; Declercq, E.R., Sakala, C., Corry, M.P., & Applebaum, S. (2006). *Listening to Mothers II: Report of the Second National U.S. Survey of Women's Childbearing Experiences*. New York: Childbirth Connection. Retrieved 13 April 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-ii-2006.pdf>; Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Herrlich, A. (2013). *Listening to Mothers III: Pregnancy and Birth*. New York: Childbirth Connection. Retrieved 27 February 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-iii-pregnancy-and-birth-2013.pdf>

I feel that all health care professionals should show more interest in helping with the natural, drug-free childbirths instead of focusing on epidural and C-section just because those processes are faster.

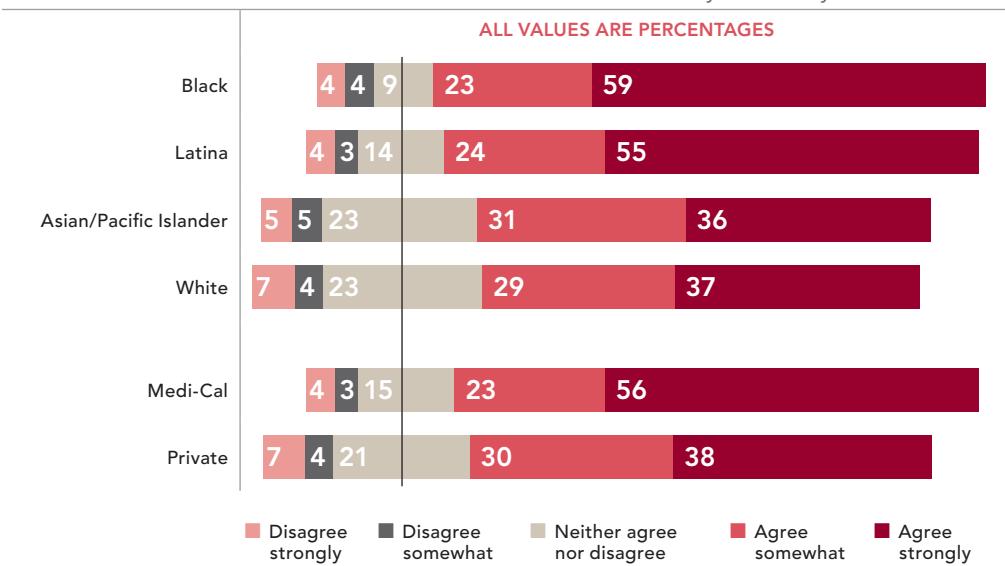
I really appreciated that [hospital name] is willing to allow natural birth ... and didn't interfere with what I wanted.

There was a question about birth being a process, and I think ... believing in mothers and trusting them during that process is important. We know our bodies. We know how we are feeling. ... [In my case,] no one would listen.

The birthing preferences are different for every family. I prefer to have medical professionals and the highest possible medical technology at my finger tips. ... My sister-in-law is quite the opposite. She chose a birthing center and had an equally great experience.

Figure 13: Childbirth Beliefs, by Race/Ethnicity and Payer

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



Base: All women (n=2451)
p <.01 for difference by payer

Late Pregnancy Care Relating to Estimated Fetal Weight

Ultrasound

Ultrasounds during pregnancy have become almost universal in the United States. In *Listening to Mothers III*, 98% of respondents reported having an ultrasound and almost half reported having four or more.* In the California survey, we asked a more targeted question – whether or not, as a woman neared the end of her pregnancy, she had an ultrasound to estimate her baby's weight. Two-thirds of women (69%) reported that they had.

Concern with a "Quite Large" Baby

We also asked if, near the end of pregnancy, the respondent's maternity care provider had told her that her baby might be getting "quite large," and 29% of women reported that they were told their baby was, particularly (35%) if they had an ultrasound to estimate weight. Babies born to women who were told their baby might be getting quite large weighed, on average, 7 pounds 8 ounces, while babies born to those who were not told their baby might be large averaged 7 pounds 1 ounce (similar to the national average in 2016, 7 pounds 2 ounces*). Just 16% of women who were told their baby might be getting quite large had newborns that met the criteria for "macrosomic" birth weight (4,000 or more grams, or 8 pounds 13 ounces), more than 4 in 5 were average birth weight and some were low birth weight (Figure 14).

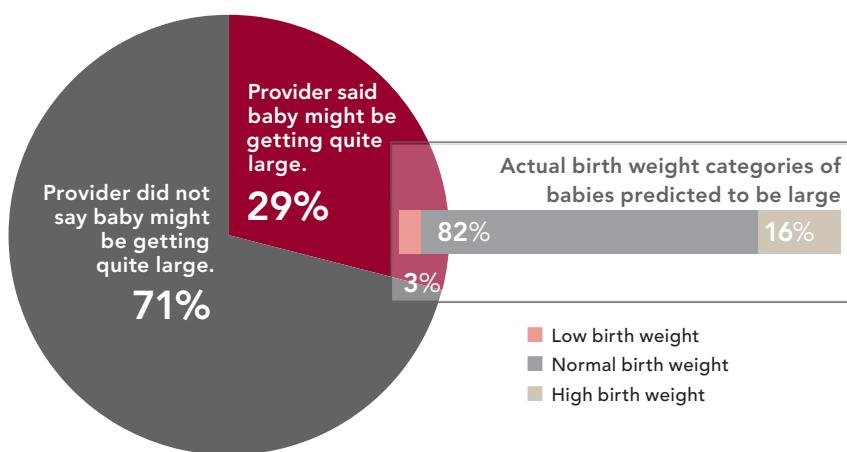
“

We set an induction date a few days after my due date, just in case. They were worried about her getting too big (my husband and I are tall and were big babies, and I had gestational diabetes).

”

*Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Herrlich, A. (2013). *Listening to Mothers III: Pregnancy and Birth*. New York: Childbirth Connection. Retrieved 27 February 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-iii-pregnancy-and-birth-2013>

Figure 14: Prenatal Estimates of Birth Weight and Actual Birth Weight Categories



Base for whether told baby might be getting quite large: All women (n=2523)

Base for actual birth weight categories: women who were told their baby might be getting quite large (n=731)

Notes: Low birth weight, <2500g (<5lb 8oz). Normal birth weight, 2500-3999g (5lb 8oz to 8lbs 13oz). High birth weight, sometimes called "macrosomia," ≥4000g (>8lbs 13oz).

At the upper end of the range across racial/ethnic groups, 36% of Black women were told their baby might be getting quite large. The women more likely to be told their babies might be quite large were women whose prepregnancy body mass index was greater than 30 (obese) (37%) and women reporting prenatal care from a family doctor (46%) or a doctor of unknown type (41%) (all $p < .01$). The actual birth weights of babies born to women in these groups did not vary nearly as much as the variation in women who were told about a suspected large baby. For example, while there was considerable variation by demographic characteristics in being told that one's baby might be quite large, the actual variation in birth weight differed little among Black (7 pounds 3 ounces), Latina (7 pounds 3 ounces) and White (7 pounds 5 ounces) women, while babies born to Asian and Pacific Islander women averaged 7 pounds 0 ounces. Women told that their baby might be getting quite large were more likely to experience major interventions, notably induced labor (47% versus 37%) ($p < .01$), compared with women who were not given this message.

Labor Induction

Labor Induction Use

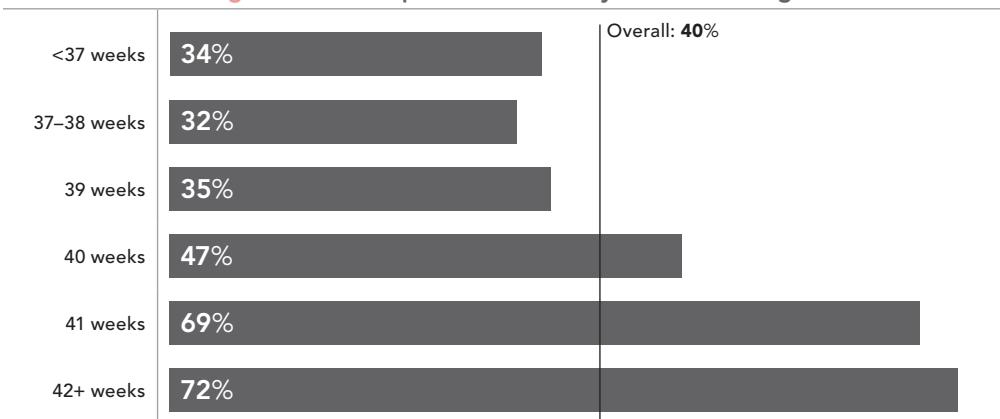
We described inducing labor as "using medicine or some other method to try to start the regular contractions of childbirth – before they start on their own," and asked whether a maternity care provider had tried to induce respondents' labors. Fully 2 in 5 women (40%) reported that their maternity care provider tried to induce their labor. Attempted induction was strongly related to week of pregnancy, with the lowest rate (32%) for "early term" inductions at 37 and 38 weeks, steadily increasing up to 72% for women who were still pregnant at 42 weeks or more ($p < .01$) (Figure 15).

The perinatal MD who read my ultrasound kept telling me I had a giant baby that might not come out vaginally, which was anxiety producing. EVEN though I knew that ultrasounds are not reliable, and indeed, he was normal sized.

Being medically induced was not my goal because I wanted to have a natural birth but having pitocin in my system made me have to get an epidural due to intensified contractions and pain.

I personally asked my doctor to induce me, so yes I was induced but not from any pressure by her. Quite the opposite. :)

Figure 15: Attempted Induction, by Gestational Age



Base: All women (n=2521)
p <.01 for difference by gestational age

Among women at 37 through 40 weeks' gestation, attempted induction was most common among those whose birth attendant was an obstetrician (39%) or midwife (37%).

There was generally not a large spread in rates of attempted induction across demographic groups, including by race/ethnicity, except for insurance status where women with private insurance (43%) were more likely than those with Medi-Cal (36%) ($p < .01$) to experience an attempt to start their labor.

We further asked the women who said that a maternity care provider had tried to start their labor whether the effort had in fact started their labor. Among women who experienced attempted medical induction, 70% said it had actually started labor, 20% said it had not started labor, and 10% were not sure. This equates to a rate of medically induced labor of at least 28% and potentially as high as 32% of all women.

Labor Induction Rationale

Figure 16 depicts the leading reasons for labor induction. The first and third most commonly identified reasons are both related to gestational age. The average gestational age in births of women induced because they were full term was 39 weeks 4 days. The average gestational age of women with an attempted induction because they were "overdue" was 40 weeks 3 days. The widely accepted definitions of "full term" encompasses both of these: from 39 weeks 0 days through 40 weeks 6 days. By contrast, "late term" is 41 weeks 0 through 6 days, and "post-term" does not occur until 42 weeks 0 days and beyond.* Open-ended responses suggest that many women considered pregnancy extending beyond their due date to be "overdue."

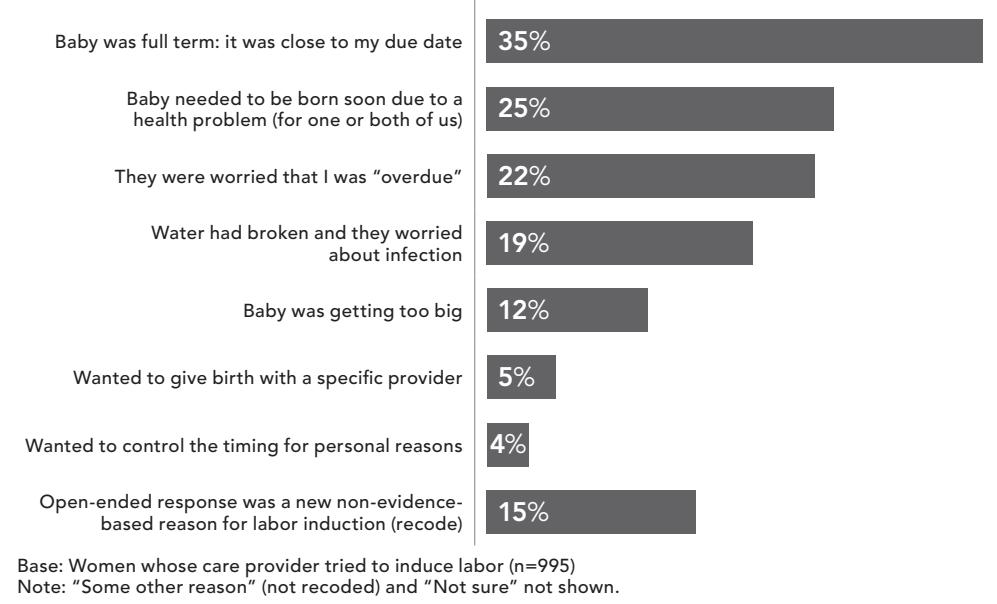
“

We set an induction date a few days after my due date, just in case. They were worried about her getting too big.

”

*American College of Obstetricians and Gynecologists. (2017). reVITALize Obstetric Data Definitions. Retrieved 26 March 2018, from <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize-Obstetric-Data-Definitions>

Figure 16: Labor Induction Rationale



We can classify reasons for induction as supported by best evidence or not, following results of a best-evidence review and multi-site trial that concluded shortly thereafter.* The indicated reasons include the following:

- The baby needed to be born soon due to a health problem (for one or both of us);
- They were worried that I was "overdue"; and
- My water had broken and they worried about infection.

The nonmedical reasons (i.e., not currently supported by evidence and guidelines) include the following:

- Baby was full term: it was close to my due date;
- My baby was getting too big;
- I wanted to give birth with a specific provider;
- I wanted to control the timing for work or other nonmedical reasons; and
- Open-ended response was a new non-evidence-based reason for labor induction (recode).

Women were encouraged to select all reasons that applied. We recoded the many "Other: specify" responses to the extent that we could reasonably interpret them. If they referenced evidence-based indications, we made sure these were captured in the response choices (e.g., hypertension = baby needed to be born soon). If they referenced miscellaneous reasons not available in existing response choices and not supported by best evidence (e.g., maternal age, gestational diabetes), we indicated this with a new category of miscellaneous reasons not supported by best evidence to support our secondary analysis.

Among women with attempted labor induction, the proportion that named one or more unsupported reason and no medical reason was 37%. The proportion of all women who experienced attempted labor induction and identified an evidence-based reason, with or

“

I was frustrated that I had to be induced. They seemed to have a policy that they applied to everyone regarding not going past their due date no matter how their monitoring is going.

”

*Mozurkewich, E., Chilimigras, J., Koepke, E., Keeton, K., & King, V.J. (2009). Indications for induction of labour: A best-evidence review. *BJOG*, 116(5), 626–636. Retrieved 39 April 2018, from <https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1111/j.1471-0528.2008.02065.x>; Koopmans, C.M., Bijlenga, D., Groen, H., Vijgen, S.M., Aarnoudse, J.G., Bekedam, D.J., . . . van Pampus, M.G. (2009). Induction of labour versus expectant monitoring for gestational hypertension or mild pre-eclampsia after 36 weeks' gestation (HYPITAT): a multicentre, open-label randomised controlled trial. *Lancet*, 374(9694), 979-988.

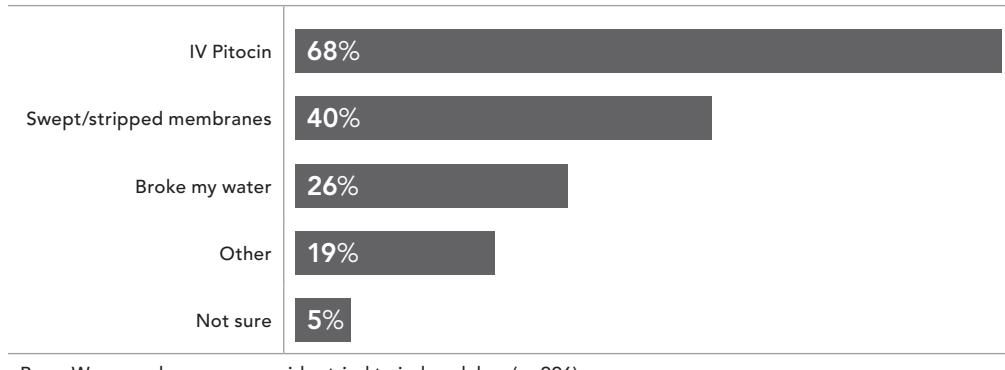
without also naming a reason not supported by best evidence, was 63%. Among all women, this results in 14% experiencing labor induction solely for a reason not supported by best evidence, and 25% identifying a medical indication.

These figures likely considerably overestimate the rate of medically indicated labor induction and underestimate the rate of induction solely for unsupported reasons. As noted above, the average gestational age of women who chose "overdue" was well before the 42-week professional cutoff for post-term pregnancy. We could not verify many reasons why the "baby needed to be born soon." Finally, some women may have selected concern about infection following professionally rather than spontaneously broken membranes.

Labor Induction Methods

Of women who experienced an attempted induction, the most common approaches used were as follows: synthetic oxytocin ("Pitocin") administered through an IV (68%), inserting a finger into the cervix to strip or sweep membranes (40%) or breaking water (26%). While Pitocin administered alone (41%) was the most common approach, women with attempted induction reported various combinations, with 13% experiencing all three interventions and an additional 26% reporting some combination of two of these, most commonly sweeping/stripping and use of Pitocin (14%) (Figure 17).

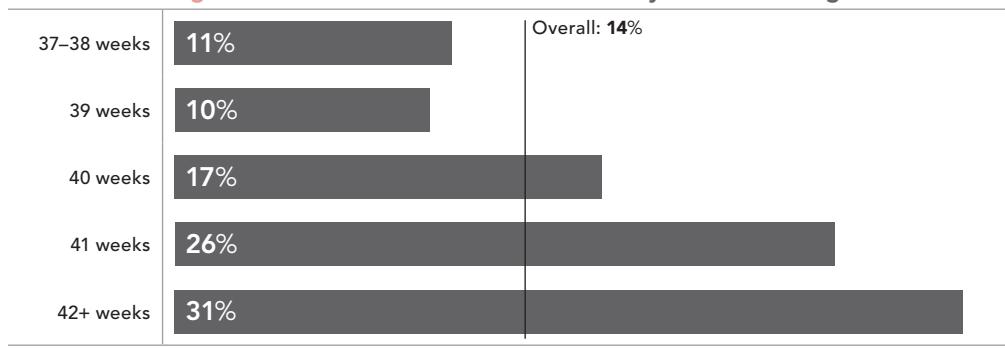
Figure 17: Labor Induction Methods



Pressure for Labor Induction

One in seven women reported feeling pressure from a health care professional to have an induction. This was strongly related to gestational age of the baby at birth. Reported experience of pressure was lowest at 39 weeks (10%), and steadily rose to 31% at 42 weeks and beyond ($p < .01$) (Figure 18). When examined by type of birth attendant, 17% of women without a prior cesarean and with an obstetrician birth attendant identified pressure to have labor induction, and 11% with a midwife birth attendant identified pressure for this intervention ($p < .01$).

Figure 18: Pressure for Labor Induction, by Gestational Age



"

Worst thing [about my childbirth experience] was being induced. ... It was so painful and uncomfortable.

"

"

[The worst part of my childbirth experience was] pressure to induce because I was overdue and it was my fourth. [The doctor] wanted to induce at 39 weeks and give me a Foley catheter and pitocin.

"

"

I declined induction and eventually they consented to an alternate plan of care, but I felt like I was constantly arguing with them.

"

"

My medical doctor did a induction method on me (swept my membranes) without my consent.

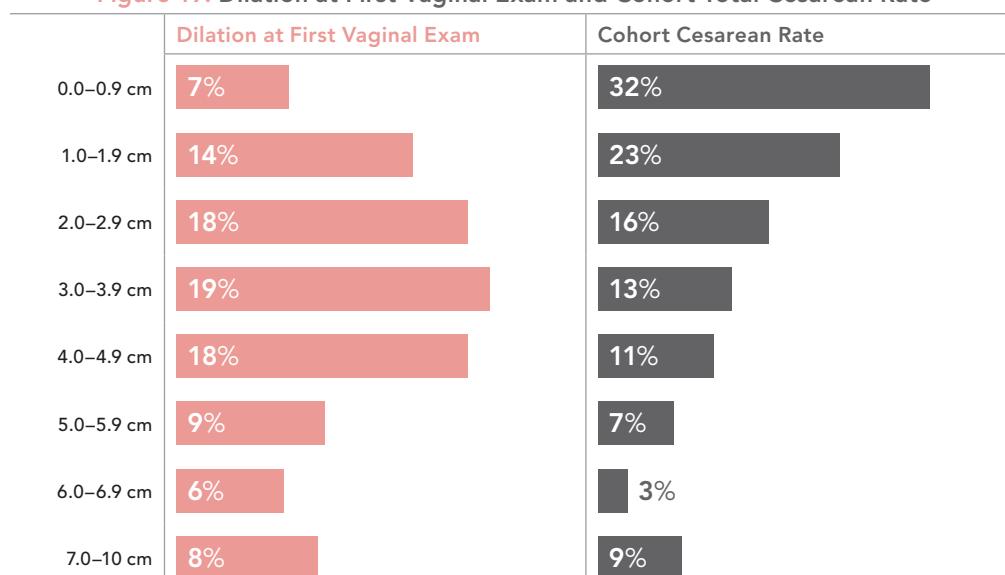
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Hospital Admission

Our study was limited to women with hospital births. It is widely recognized that "delayed admission" in labor is associated with avoiding unneeded cesarean births and other consequential labor interventions. For this reason, women are encouraged when possible to wait to go into the hospital until "active labor," which professional documents define variously as beginning at 5 to 6 centimeters.* We asked women who reported having experienced labor and having had one or more vaginal exams how many centimeters their cervix was dilated (or opened) at their first vaginal exam in the hospital. On average, they were 3 centimeters dilated at their first vaginal exam. Results are shown in Figure 19, which does not include the 11% in this group who were not sure about their cervical dilation at the first vaginal exam. Just 15% of this group reported that they had reached 6 centimeters or beyond at their first vaginal exam, and 23% had a dilation of 5 or more centimeters at their first vaginal exam.

The current recommendations for definition of active labor (2014–) replaced a previous definition of active labor occurring at 4 or more centimeters. Even considering this prior definition, nearly 6 in 10 respondents (58%) were apparently admitted to the hospital before active labor.

Figure 19: Dilation at First Vaginal Exam and Cohort Total Cesarean Rate



Base for dilation at first vaginal exam: Women who had one or more vaginal exams and experienced labor (n=1461)

Base for cohort cesarean rates: Women given dilation at first vaginal exam

p <.01 for difference in cesarean rate by dilation

Figure 19 also shows total cesarean rates for the cohorts of women who reported different degrees of cervical dilation at first vaginal exam. There was a strong linear decline in cohort cesarean rates as dilation increased, from 32% among women with a reported dilation of less than 1 centimeter to 3% in women with initial dilation of 6 but fewer than 7 centimeters ($p < .01$). Those with higher initial dilation measurements of 7 or more centimeters had a cesarean rate of 9%, six percentage points higher than those at 6 centimeters, which was still far below survey participants' total cesarean rate of 31% and even their 19% primary cesarean rate (in women without a previous cesarean).

*American College of Obstetricians and Gynecologists. (2017). reVITALize Obstetric Data Definitions. Retrieved 26 March 2018, from <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize-Obstetric-Data-Definitions>; American College of Obstetricians and Gynecologists' Committee on Obstetric Practice. (2017). Approaches to Limit Intervention During Labor and Birth. Committee Opinion, February (687). Retrieved 19 October 2017, from <https://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Approaches-to-Limit-Intervention-During-Labor-and-Birth>

“

I felt very lucky to mostly labor at home. I'm really grateful to have worked with a skilled doula.

”

“

I am an advocate of vaginal birth and because of that I hired a doula. I wanted to stay home as long as possible, as I knew when I am in the hospital, I won't have much flexibility in doing things the way I want.

”

“

I labored at home for the first 12 hours.

”

While cesarean rates at a given dilation were highest for women having their first babies, we found the same pattern of lower rates with greater dilation at first vaginal exam for women having their second or more baby (data not shown). Our results suggest that while all women may benefit from delayed admission, benefits are greatest for first-time mothers.

Women who ultimately had a vaginal birth were on average a centimeter more dilated at initial exam than those who ended up with a cesarean (3.5 versus 2.4 centimeters). First-time mothers who had a vaginal birth were on average a centimeter more dilated at initial exam (3.1 centimeters) than first-time mothers with unplanned cesareans (2.1 centimeters) ($p < .01$).

Use of Various Labor Interventions

Fetal Monitoring

Use of an electronic fetal monitor to keep track of the fetal heart tones was widespread. Approximately 84% of women who experienced labor and could recall said they had used electronic fetal monitoring, either exclusively (68%) or in conjunction with the use of a handheld device such as an electronic Doppler or fetal stethoscope (16%). Only 3% of women said they were monitored solely with a handheld device. Exclusive use of a handheld device was more common when women had a midwife (6%) as a birth attendant, but the differences were not pronounced. Women with an obstetrician as birth attendant were more likely than women with a midwife to have used a handheld device and an electronic fetal monitor ($p < .01$).

Other Labor Interventions

We included a series of questions about experience with common interventions around the time of birth, and present results here broken down by mode of birth and by type of care provider. Not shown in this section and presented elsewhere in this report are numerous other interventions related to labor induction, fetal monitoring, pain relief and operative birth (cesarean birth and assisted vaginal birth with vacuum extraction or forceps). Some interventions are "co-interventions" that are routine or more likely with other interventions (e.g., various practices to monitor, prevent or treat unintended consequences of epidural analgesia). We did not ask about many common labor interventions, as we felt that women would not necessarily be aware of some of these (for example, synthetic oxytocin given just before or after the birth as a precaution against excess bleeding, and many other medications delivered through intravenous lines).

In this section, we report use of rupture of membranes to speed labor. However, best current evidence does not support breaking membranes to speed labor, either in normally progressing labor or when labor is prolonged.*

The mode of birth comparison shows that both vaginal and cesarean births are often quite intervention intensive, perhaps especially for women who labor before cesarean birth (Figure 20). Regardless of mode of birth, a majority of women experienced one or more vaginal exams, an intravenous line in their arm and bladder catheters to remove urine. At least 40% of laboring women experienced synthetic oxytocin (Pitocin) to speed labor, and at least 34% experienced artificially ruptured membranes. Notably, both of these were *after labor had begun* and did not reflect considerable use of these practices as well for labor induction *before labor had begun*. Use of intravenous lines, synthetic oxytocin to speed labor and bladder catheters were more common in cesarean than vaginal births ($p < .01$). Women with vaginal births were more likely to have experienced artificially ruptured membranes during labor ($p < .01$).

*Smyth, R., M., D., Markham, C., & Dowswell, R. (2013). Amniotomy for shortening spontaneous labour. *Cochrane Database of Systematic Reviews*, 2013(6). doi: 10.1002/14651858.CD006167.pub4

“

I hate fetal monitoring ... such a pain, having to lay down even at intervals was awful.

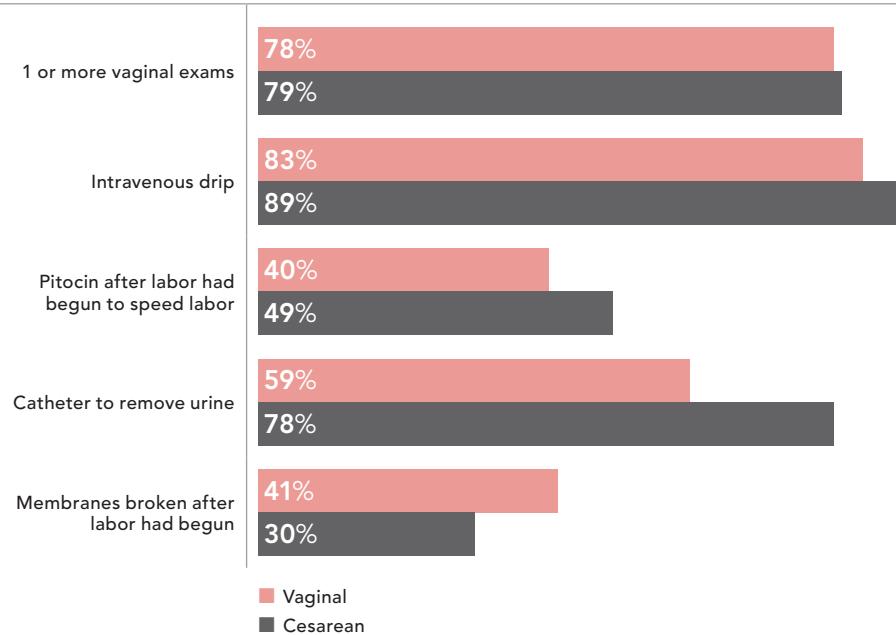
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My labor just lasted so long and I was so tired. I didn't want to get pitocin but they administered such a small amount because we needed to get the baby out as soon and as safely as possible.

”

Figure 20: Women's Experience of Selected interventions, by Mode of Birth



Base for vaginal exams: Women who experienced labor (n=2113)

Base for intravenous drip: All women (n=2525)

Base for Pitocin: Women who experienced labor (n=2115)

Base for catheter: All women (n=2524)

Base for membranes broken: Women who experienced labor and had not had membranes broken for labor induction (n=700)

p < .01 for difference in intravenous drip, Pitocin, catheter, and having membranes broken by mode of birth

Note: "Not sure" not shown.

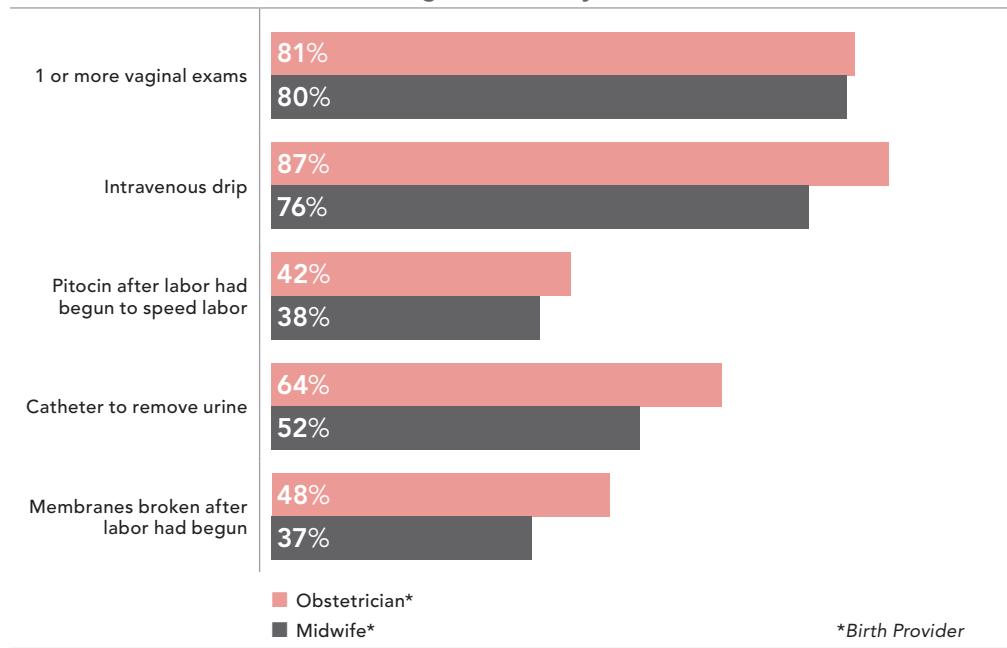


Being pressured into starting pitocin resulted in very strong contractions sooner than I was ready.



When comparing use of these interventions between women with obstetricians and with midwives as birth attendants, we limited the cases to women with a vaginal birth (Figure 21). Women with midwives were less likely to experience intravenous lines and bladder catheters ($p < .01$). Use of vaginal exams and synthetic oxytocin was not different. A majority of women in the case of both provider types experienced one or more vaginal exams, intravenous lines and a catheter to remove urine. Between 1 in 3 and 1 in 2 women experienced synthetic oxytocin (Pitocin) to speed labor and artificially ruptured membranes, again *after labor had begun* and not reflecting previously reported use of the practices for labor induction.

Figure 21: Experience of Selected Interventions Among Women With Vaginal Births, by Provider



Base for vaginal exams: Women who had a vaginal birth (n=1795)

Base for intravenous drip: Women who had a vaginal birth (n=1797)

Base for Pitocin: Women who had a vaginal birth (n=1796)

Base for catheter: Women who had a vaginal birth (n=1795)

Base for membranes broken: Women who had a vaginal birth and had not had membranes broken for labor induction (n=698)

$p < .01$ for difference in intravenous drip and catheter by provider

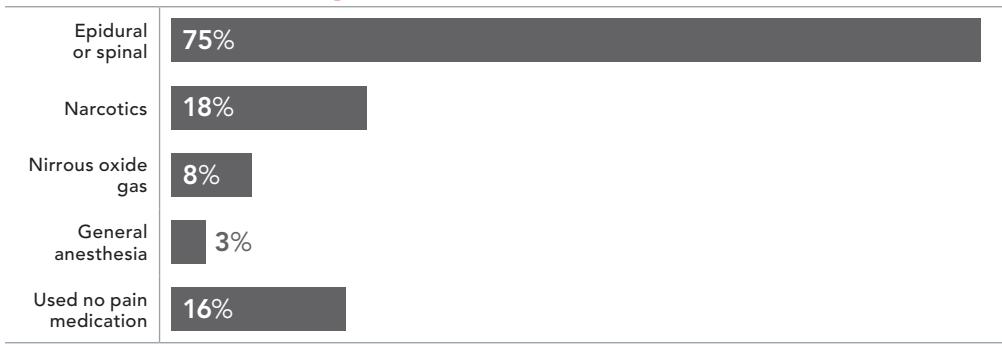
Note: "Not sure" not shown.

Labor Practices Related to Comfort and Pain Relief

Use of Pain Medication

We asked women about use of pain medications for labor and birth or for birth alone in the case of a planned cesarean, and asked them to indicate all types they had used. While 16% of all women reported using no pain medication (23% in vaginal births), about 5 out of 6 women reported using some form of pharmacologic pain relief for giving birth. By far, epidural (with the closely related spinal) analgesia predominated in both cesarean (92%) and vaginal (68%) births (75% overall). In vaginal births, 16% of women also reported using narcotics such as Demerol or Stadol, and 7% used nitrous oxide, which is making a comeback as a self-administered method that helps many women avoid the extensive impact on labor and use of co-interventions of epidural analgesia. In cesarean births, 24% also reported using a narcotic, 10% reported using general anesthesia and 10% reported using nitrous oxide. Figure 22 shows overall use of major types of pain medications.

Figure 22: Use of Pain Medications



Base: All women (n=2516)

Notes: "Other" not shown. Respondents could select more than one answer choice.
Epidurals often deliver a combination of local anesthetic and narcotic medications.

In general, differences in type of medication or in using no pain medication by payer were not large. However, women with private insurance (79%) were more likely than women with Medi-Cal (72%) to use epidural/spinal analgesia ($p < .01$), and women with Medi-Cal were twice as likely (10%) as women with private insurance (5%) to use nitrous oxide ($p < .01$).

We also looked at use of different types of pain medications, and use of no pain medication, by race/ethnicity; a clear pattern emerged. Black women were on the high end of the range for use of all types of pain medications, and lowest end of the range for using no pain medicine ($p < .01$ for differences in use of epidural analgesia and nitrous oxide by race/ethnicity). Latina women had lowest rate of use of epidural/spinal analgesia and highest rate of using no pain medicine ($p < .01$). White women and Asian and Pacific Islander women were intermediate but close to the high end for epidural/spinal and intermediate as well on use of no pain medicine (Figure 23). Among the four types of medication in this figure, women with private insurance were more likely to use epidural analgesia and less likely to use nitrous oxide than women with Medi-Cal coverage ($p < .01$ for both).

“

No matter what the woman in labor says it is assumed she will want and need an epidural.

”

“

I really appreciated they heard what I wanted. When I came in I told them I didn't want anyone asking about pain medication so that's what got me through. I wasn't tempted by them.

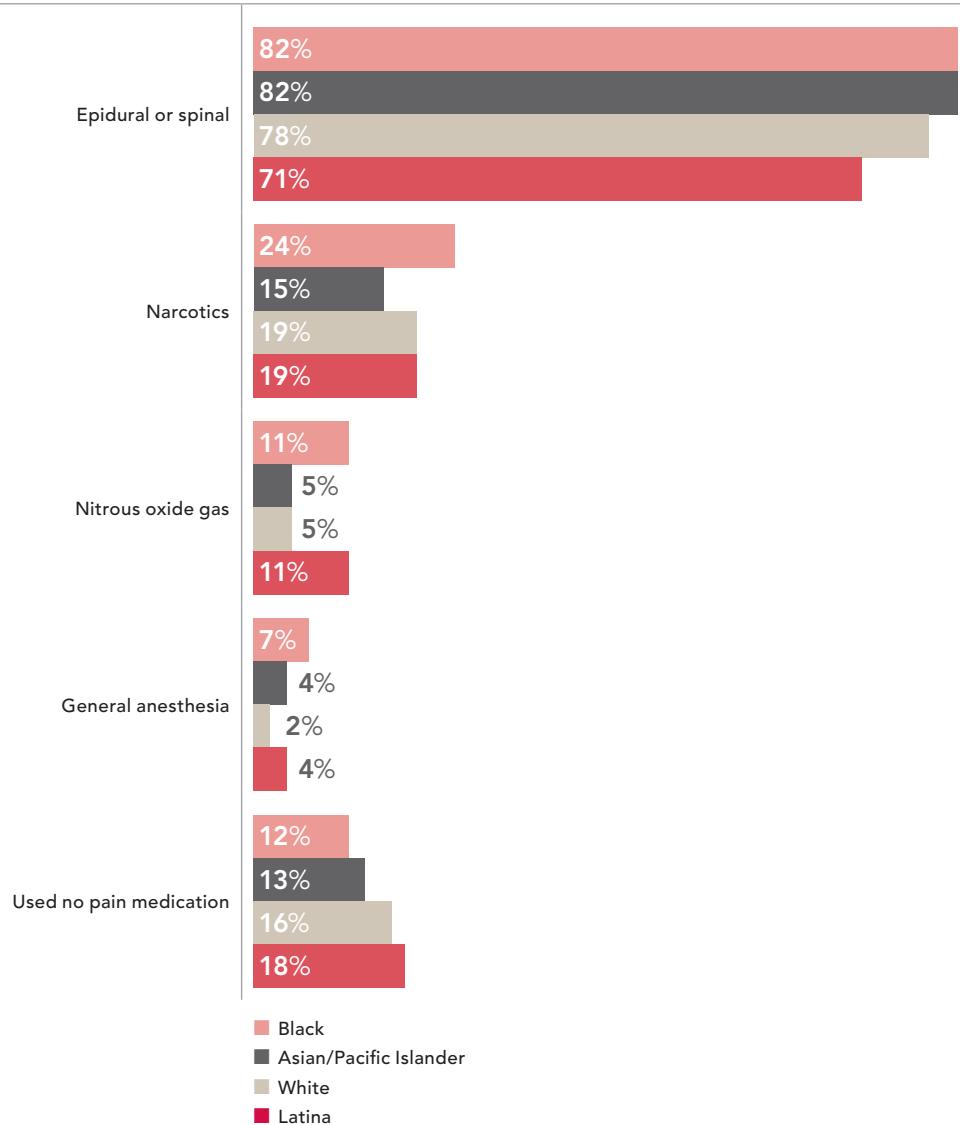
”

“

I didn't receive epidural like I asked.

”

Figure 23: Use of Pain Medications, by Race/Ethnicity



Base: All women (n=2516)

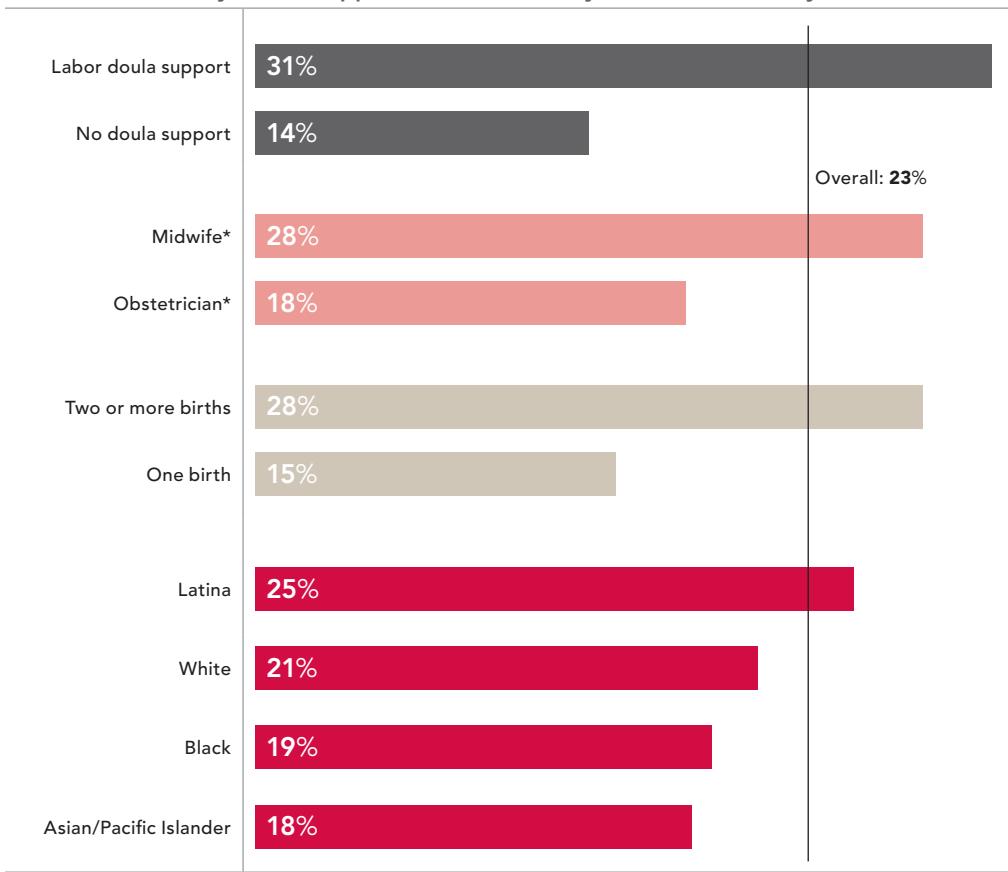
p < .01 for difference in epidural or spinal and nitrous oxide gas by race/ethnicity

Notes: "Other" not shown. Respondents could select more than one answer choice.

Epidurals often deliver a combination of local anesthetic and narcotic medications.

We looked at characteristics of women who reported not using any pain medication in their vaginal births. Those who had a midwife attend their birth (28% versus 18% with obstetrician birth attendant), were experienced mothers (28% versus 15% of first-time mothers) and were Latina (25% versus 21% White, 19% Black and 18% Asian and Pacific Islander) were more likely to give birth without pain medications than their counterparts ($p < .01$). Similarly, among women who spoke English at home, those who had support from a labor doula (31%) were more likely than those who did not (14%) to avoid use of pain medication ($p < .01$) (Figure 24). (See Chapter 1 for rationale for limiting doula analyses to English speakers.)

Figure 24: Use of No Pain Medication in Women With Vaginal Births, by Doula Support, Provider, Parity and Race/Ethnicity



*Birth provider.

Base: Women who had a vaginal birth (n=1799)

p < .01 for difference by doula, provider, parity and race/ethnicity

Notes: Doula analysis limited to survey respondents who speak English at home, as the doula role appears to have been less understood among non-English-speaking respondents. See discussion of this in Chapter 1.

Use of Drug-free Methods for Labor Pain Relief

Women who experienced labor reported using a variety of non-pharmacologic pain relief methods. Easily, the most commonly used techniques were breathing methods (44%) and position changes (43%), with no other method cited by more than 1 in 5 women. Surprisingly, just 12% of respondents used hydrotherapy (shower, tub or pool), a well-received and accessible method of comfort in labor. One-third of women (33%) indicated they had not used any drug-free techniques.

We examined use of the various drug-free methods by payer, and a clear pattern emerged. Rates of use of the following drug-free methods were higher in women with private insurance compared with women covered by Medi-Cal: mental methods (e.g., relaxation, hypnosis), hands-on methods (e.g., massage, acupressure), use of inflated balls, position changes and breathing methods ($p < .01$). Women with Medi-Cal coverage were more likely to indicate using no drug-free method at all (37%) compared with privately insured women (27%) ($p < .01$) (Figure 25). We also looked across racial/ethnic groups, and White women had the highest rate of using most methods (data not shown).

Several drug-free methods may be associated with using no pain medications. Use of hydrotherapy seemed to be strongly related, as one-third (33%) of the women with a vaginal birth who reported using a tub or shower during labor indicated they used no pharmacological pain relief, compared with 21% among women who did not. Use of mental techniques like relaxation (29% no pain medication) and hands-on methods like massage (29%) may also be related to avoiding pain medicine.

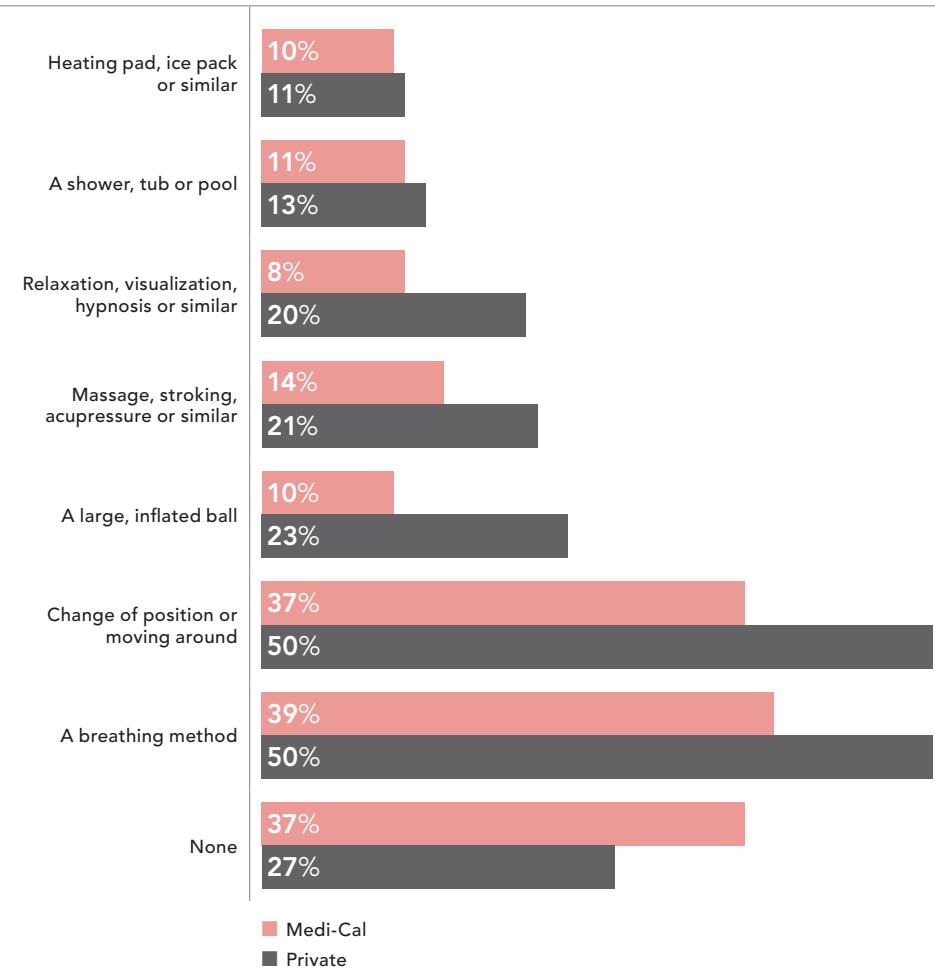
The hospital ... birthing area functions much like how I imagine a birthing center does. I was able to use an exercise ball, peanut ball, heating pad, bath tub and take a walk around the nice facilities to help with labor. The staff were of the highest caliber – very friendly, well-educated and provided excellent care with a pleasant disposition. I was able to have my friends and family in the birthing room while I labored and birthed.

I feel that they should have shown more interest in how I would have liked my labor to go. They didn't try to comfort me in any way with my idea of labor and what I wanted to do. When I did ask them if I could do certain things to help with the pain like walking around or getting in the shower, they told me no but wouldn't give me a clear explanation of why.

I would strongly recommend having a baby without any medication.

I would suggest to have others ask their nurses to find natural ways to ease pain without medication. There are options that they have that will help.

Figure 25: Use of Drug-Free Methods of Pain Relief, by Payer



Base: Women who experienced labor (n=2113)

p < .01 for difference in relaxation, visualization, hypnosis, or similar; for massage, stroking, acupressure, or similar; for a large, inflated ball; for change of position or moving around; for a breathing method; and for use of no drug-free methods, by payer

Notes: "Some other method" not shown. Use of labor doula not shown. Respondents could select more than one answer choice.

Other Labor Experiences

Freedom of Movement During Labor

Being upright and mobile during labor has no known downsides and is associated with shorter labor and decreased use of epidural analgesia and cesarean birth.* However, a substantial majority of women who experienced labor (61%) reported that once they were in labor in the hospital, they didn't walk around at all. Among respondents who spoke English at home, 50% of women who had labor doula support and 41% who did not reported doing any walking in the hospital, a comparison that was not significantly different (see Chapter 1 for the rationale for limiting doula analyses to English speakers).

“

It would have been nice to have more natural ways to deal with labor pains (tubs, balls, etc.) in the hospital. If those things were available to me I feel like I wouldn't have had to have an epidural and all the issues I ended up having because of it.

”

”

I ... wanted to have access to a tub for hydrotherapy, but the hospital didn't offer that.

”

”

I wish I was at least able to walk around the hospital or the labor ward. I think if it was possible to do that, it would have helped the labor.

”

”

I had planned to do a natural delivery without an epidural but I was strapped down in bed because of the fetal monitoring. Not being able to move around made handling labor very difficult.

*Lawrence, A., Hofmeyr, G.J., & Styles, C. (2013). Maternal positions and mobility during first stage labour. *Cochrane Database of Systematic Reviews*, 2013(10). doi: 10.1002/14651858.CD003934.pub4

Position Used When Pushing During a Vaginal Birth

A slight majority of women (51%) reported giving birth in a propped-up position (half sitting, head higher than hips), while most of the remainder (44%) gave birth flat on their backs. Latina women were more likely to give birth flat on their back (49%) than Asian and Pacific Islander (44%), White (35%) or Black (35%) women ($p < .01$). Only 6% of English-speaking and 5% of all women used some other position, such as kneeling, side-lying or hands and knees. These positions were more common among women who had a labor doula (19% among English-speaking women) or a midwife (14% among English-speaking women) or both a doula and a midwife (42% among English-speaking women) ($p < .01$), and we caution that the combination especially is based on small numbers. (Doula data limited to English speakers; see Chapter 1 for rationale.)

Episiotomy and Choice of Episiotomy

We asked women, "During your labor, did someone give you an episiotomy (cut just before birth to make the opening to your vagina bigger)?" Overall, the rate of episiotomy has been declining in the United States. We were surprised with – and question – the result, 20% among women with vaginal births, which is higher than the response to a similar question included in our national *Listening to Mothers III* Survey of births in 2011–2012, and also considerably higher than the California 2016 nationally endorsed episiotomy performance measure rate of 9%.^{*} The latter is based on hospital discharge data and excludes women who experienced shoulder dystocia, which we were unable to exclude. It is possible that this term was less understood among childbearing women in California, as there were major differences between those who took the survey in English (17%) and those who took it in Spanish (27%). Similarly, those born elsewhere (25%) and Asian and Pacific Islander women (26%) reported exceptionally high overall episiotomy rates, along with U.S.-born women who took the survey in Spanish (31%) versus U.S.-born women who took the survey in English (16%).

The variation strongly suggests differences in understanding of the question, with possible confusion among the procedure, perineal tears and repairs of either. However, as discussed in Appendix C, validation studies of reporting of episiotomy in hospital discharge data have identified undercounting. Thus, current measurement using discharge data may similarly undercount the rate of episiotomy, making it possible that the true California 2016 episiotomy rate was greater than the official rate of 9%. Personal communication with the measure developer and steward clarified that our inability to exclude shoulder dystocia would add about one percentage point.^{**} Given the reported range of undercounting, the results for those who took the survey in English (17%) and further were born in the United States (16%) are in the realm of possibility, and we encourage further efforts to clarify the true rate of episiotomy among vaginal births in California.

This procedure is widely recognized to be overused, and some high-performing practices have reported exceedingly low episiotomy rates. The national benchmark set by The Leapfrog Group is 5% or less.^{***} Limiting the responses to U.S.-born, English-speaking women, we checked if those who reported receiving an episiotomy had given birth to larger babies than those who did not, but found that the average difference in birth weight was 7 ounces. In this group, episiotomies were more likely in first-time mothers (23%) compared with mothers with three or more children (7%) ($p < .01$).

“

They asked me to switch birthing positions to accommodate my doctor. ... I thought it was weird they ask the birthing mother to move for the doctor. My body knew what to do and hands and knees it was. Doctor just had to figure it out.

”

“

My episiotomy was the worst thing about my care. I am not sure why it was done and I don't remember discussing it during my pregnancy. ... It has caused me physical problems since.

”

“

The worst thing about the care my baby and I got while in the hospital for my recent birth was that the doctor did not give me a choice about receiving an episiotomy.

”

“

I would not have another episiotomy as my recovery from that took away the enjoyment of bonding with my baby. ... I don't believe I was given enough time to stretch down there before my episiotomy was performed.

I wasn't offered advice or care for my episiotomy recovery. I had to find information online myself. I wasn't given any option or had a choice with my episiotomy either.

”

*Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Herrlich, A. (2013). *Listening to Mothers III: Pregnancy and Birth*. New York: Childbirth Connection. Retrieved 27 February 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-iii-pregnancy-and-birth-2013.pdf>; Cal Hospital Compare. (2018). *Cal Hospital Compare*. Retrieved 13 April 2018, from <http://calhospitalcompare.org/>

**M. Hoffman, personal communication, April 19, 2018.

***The Leapfrog Group. (n.d.). *Maternity care*. Retrieved 13 April 2018, from <http://www.leapfroggroup.org/ratings-reports/maternity-care>

We asked women who reported experiencing an episiotomy if they were given a choice in whether to have this procedure. Again, looking solely at U.S.-born, English-speaking women, 74% indicated that they were not given a choice, while 26% reported having had a choice. Women who were least likely to report having a choice included those who were less than 25 years old (87% not given a choice, $p < .05$) and covered by Medi-Cal (89%) ($p < .01$), compared with their counterparts.

Length of Labor

Among respondents who labored, the average length of labor (from the onset of regular contractions to birth) was reported as 13 hours with a median of 9 hours. Almost 1 in 5 women (23%) reported a length of labor of less than 5 hours, 50% reported less than 10 hours and 73% experienced a labor shorter than 15 hours. Women with an unplanned cesarean reported an average labor of 21 hours, compared with 12 hours for women with a vaginal birth. First-time mothers reported longer labors (17 hours) than experienced mothers (10 hours).

Arriving at the hospital further along in one's labor, as measured by dilation at first vaginal exam, was associated with shorter labors, though that may be influenced by some women conflating their time in the hospital with their length of labor. Among first-time mothers with a vaginal birth who were at 2 centimeters or less dilation at first vaginal exam, the median length of labor was 16 hours. For those arriving while at 4 centimeters, the median was 12 hours and for those arriving at 6 or more the median was 10 hours ($p < .01$). For first-time mothers with a cesarean, the median length of labor was 24 hours among those with initial dilation measured at 2 centimeters or less, 18 hours with dilation of 4–6 centimeters and 7 hours with dilation of 6 or more centimeters ($p < .01$).

In the Hospital After Birth

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

Early mother-baby skin-to-skin contact is a valuable practice that supports breastfeeding and maternal-newborn transitions.* A very large majority of women (87%) reported having their baby skin-to-skin for at least some period after birth, with two-thirds (67%) experiencing it for at least 30 minutes (Figure 26). The experience of skin-to-skin contact was most common among women who had experienced a vaginal birth after cesarean (99%) and least common among women with a primary (initial) cesarean birth (70%) ($p < .01$). More than 40% of women with a vaginal birth reported 1–2 hours of skin-to-skin contact, compared with 27% of women with a primary cesarean and 31% with a repeat cesarean.

“

Overall, I had a great birth experience and enjoyed my 'golden hour' of skin-to-skin.

”

“

I wish I had more time skin-to-skin with my child.

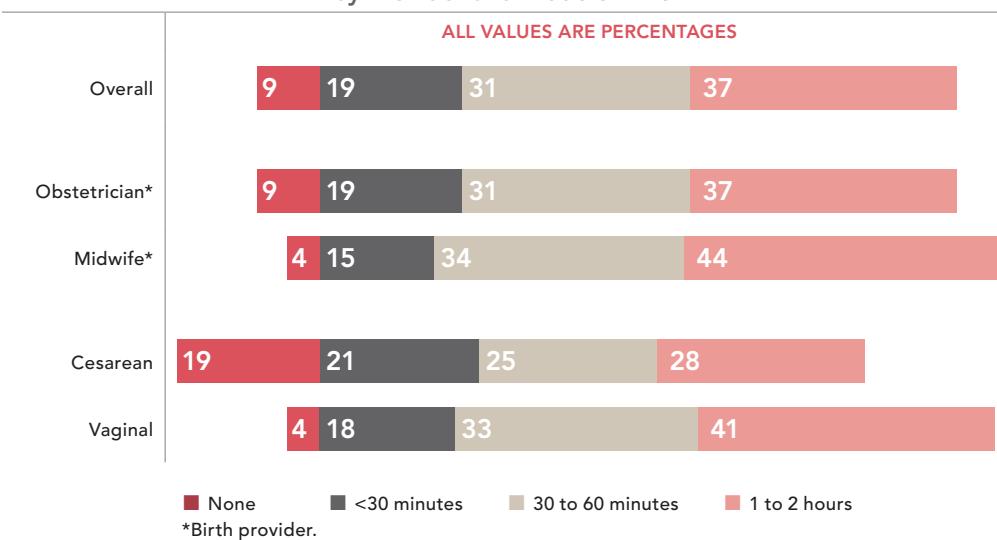
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The ability to do skin-to-skin shortly after having a C-section was priceless. I didn't get that opportunity with my first (different hospital) and I'm really grateful that skin-to-skin post C-section was the standard practice at [hospital name].

*Moore, E.R., Bergman, N., Anderson, G.C., & Medley, N. (2016). Early skin-to-skin contact for mothers and their healthy newborn babies. *Cochrane Database of Systematic Reviews*, 2016(11). doi: 10.1002/14651858.CD003519.pub4

Figure 26: Skin-Skin Contact in the Immediate Postpartum Period, by Provider and Mode of Birth



Base: All women (n=2527)

p < .01 for difference by mode of birth

p = 0.0118 for difference by provider

White women (94% any and 48% for 1–2 hours) most commonly reported skin-to-skin contact, followed by Asian and Pacific Islander women (91% any; 29% for 1–2 hours), Latina women (90% any; 34% for 1–2 hours) and Black women (87% any; 40% for 1–2 hours) (p < .01). Among women with a midwife as their birth attendant, 96% had any and 44% had 1–2 hours of skin-to-skin contact. Among women with obstetrician birth attendants, 91% had any and 37% had 1–2 hours of skin-to-skin contact (any p < .01; time distribution p = .0118). Among English speakers, both women who had labor doula support (91%) and those who did not have labor doula support (92%) were highly and about equally likely to have at least some skin-to-skin contact (see Chapter 1 for rationale for limiting labor doula analyses to English speakers).

Almost 1 woman in 7 reported that her newborn spent all (8%) or part (6%) of the baby's hospital stay in the neonatal intensive care unit (NICU). Table 2 summarizes the newborn and maternal length of stays.

Table 2. Newborn and Maternal Length of Stay, by Newborn Use of Newborn Intensive Care Unit (NICU)

	Newborn		Mother	
	Mean (days)	Median (days)	Mean (days)	Median (days)
Newborn in NICU for entire stay	21	10	6	4
Newborn in NICU for part of stay	5	3	4	3
Newborn never in NICU	2	2	3	3

Base for newborn in NICU: All women (n=2527)
 Base for newborn length of stay: All women (n=2505)
 Base for maternal length of stay: All women (n=2508)

Maternal and infant length of stays were also related to mode of birth, with women experiencing a vaginal birth having a median stay of 2 days and those with a cesarean birth staying 4 days. There was no appreciable difference in the length of stay for women with private insurance or Medi-Cal.

I had an amazing experience with a 'gentle C-section' so my baby got to do skin to skin right away in the OR.

When I was discharged from the hospital, our son had to stay in the NICU. His doctors and nurses were absolutely amazing in helping us get adjusted to life with such a tiny little person. They also made sure we felt comfortable in knowing what to do once we were able to take him home with us.

Women who have C-sections should be required to stay in the hospital for at least 3–5 days, not two days!

I wish the hospital would've offered personal emotional support services. Having an early delivery was not planned or expected. I feel like having my baby stay in the hospital almost 3 weeks started to take an emotional toll on me and my relationship with my husband.

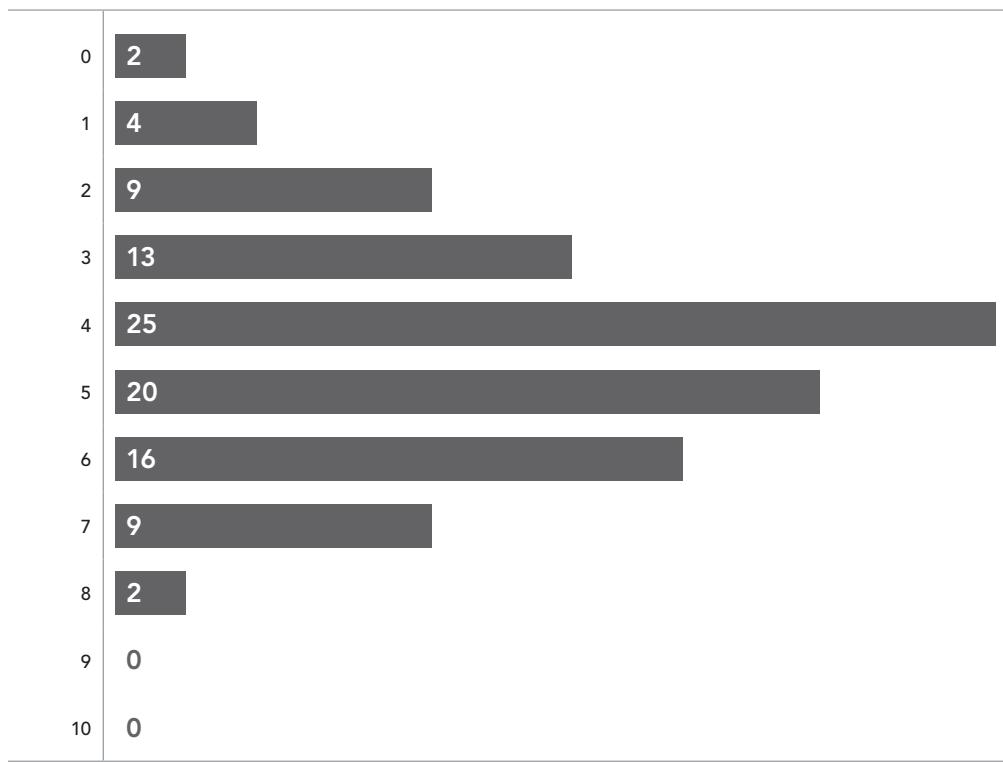
Cumulative Interventions Around the Time of Birth

In this final section, we step back from the specific intervention topics and look at the bigger picture of the constellation of intervention in several ways. First, we show that even with a highly selective list of consequential interventions around the time of birth, nearly every woman experienced many, and nearly half of women experienced five or more. Second, we look at a cascade of intervention showing cesarean rates following the four different combinations of having and not having labor induction and epidural/spinal analgesia. Third, we look at an inventory of interventions measured in tabular form. Finally, we flip the question to look at the proportion of women who had a physiologic birth, using the reVITALize definition.

Cumulative Interventions Around the Time of Birth

We developed an index of 10 consequential interventions used around the time of birth, and measured women's cumulative experience of included items. The interventions were: sweeping or stripping of membranes, artificial rupture of membranes (to try to induce labor or after labor was underway), synthetic oxytocin (Pitocin, to try to induce labor and/or to hasten established labor), bladder catheter, intravenous line, any electronic fetal monitoring, epidural analgesia for pain, narcotics for pain, vacuum or forceps, and cesarean birth. As illustrated in Figure 27, most women experienced quite a few of these interventions, with a median of four interventions per woman; 27% of women experienced at least six of them, and 47% experienced five or more.

Figure 27: Cumulative Number of Selected Interventions Experienced Around the Time of Birth



Base: All women (n=2536)

Note: Interventions include sweeping membranes, artificial rupture of membranes, synthetic oxytocin to induce and/or speed up labor, bladder catheter, intravenous line, electronic fetal monitoring, epidural for pain, narcotics for pain, vacuum or forceps, and cesarean birth.

Note: Vacuum or forceps data obtained from respondents' birth certificates.

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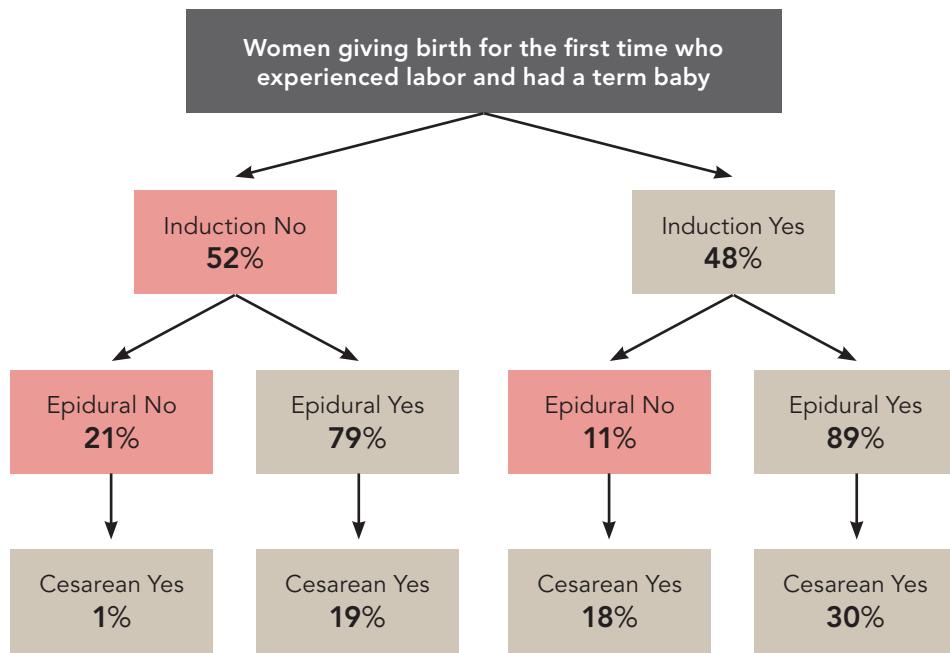
The doctor thought it was too long since my water broke [12 hours] and my labor wasn't progressing fast enough. I was given pitocin, hooked up to bunches of wires and monitors so that I couldn't move, and interrupted too regularly to really get under way with self-hypnosis. I wound up taking an epidural. There was no way to access a tub or shower for water for pain relief. I couldn't move enough to sit on an exercise ball. I wish I could have been allowed to labor more naturally, to let my body take it's time ... and to have been wire-free (they could've settled for intermittent fetal monitoring) so I could try more varied natural pain relief techniques.

”

Cascade of Intervention

Looking at the 80% of first-time mothers who experienced labor at term, we found great differences in mode of birth for those who did and did not experience labor induction and epidural/spinal analgesia. Just 1% of women in this group with neither labor induction nor epidural analgesia had a cesarean, whereas 30% with both induction and epidural/spinal analgesia had a cesarean. Women with just one of these interventions had intermediate rates of cesarean birth: epidural/spinal-only 19% and induction-only 18% ($p < .01$) (Figure 28).

Figure 28: Cascade of Intervention



Base: Women giving birth for the first time, who experienced labor and had a term baby (n=841)

$p < .01$ for difference in cesarean rate by whether had induction and epidural

Note: In this group, which included 80% of women giving birth for the first time, the overall epidural rate was 84% and overall cesarean rate was 22%.

Inventory of Measured Interventions Around the Time of Birth

Table 3 brings together the various interventions discussed in this chapter and the extent to which women and their fetuses or newborns were exposed to these practices. The table presents totals for some practices that are used for multiple purposes. For example, synthetic oxytocin (Pitocin) and artificial rupture of membranes are used to induce labor and are also used in laboring women. This is far from a complete inventory of exposures and experiences of women and their fetuses/newborns at this time, as we limited queries to those that women might reasonably be expected to know. For example, intravenous lines are a ready access point for many medications, such as those to combat hypotension or itching that can accompany epidural analgesia and high rates of use of synthetic oxytocin around the time of birth to prevent hemorrhage.

I believe the method of induction used (Pitocin) created a cascade of events that could have been detrimental to the health of myself and my son.

I felt like unnecessary intervention after intervention occurred.

[The worst thing about my childbirth experience was] all the interventions that I didn't want, like the epidural and induction.

Once [at the hospital], the whole thing is just so intense; the monitoring, the IVs, the required positions, the rapidity with which you are asked to make decisions when you are in intense physical pain. It is not a therapeutic environment. I also hated how quickly they took my baby from me to start with the weighing and measuring and vaccination and heel sticks...I mean she's been out of the womb for 10 minutes, does she really need all that stuff done right away?

Table 3. Inventory of Rates of Peripartum Interventions and Practices

Intervention	Rate among all women
Labor induction	
Attempted medical induction	40%
Attempted medical inductions with no evidence-based reason	14%*
Medically induced labor	28%–32%**
Synthetic oxytocin (Pitocin)	
To induce labor	27%
To speed up established labor	34%
To induce and/or speed up labor	38%
Breaking of membranes	
To induce labor	10%
To speed up established labor	36%
To induce and/or speed up labor	46%
Pain medications	
Epidural analgesia	75%
Narcotics	18%
Nitrous Oxide	8%
General anesthesia	3%
Use of any pain medication	81%
Cesarean section	
Primary (initial) cesarean	16%
Repeat cesarean	15%
Initial and repeat cesarean (total cesarean)	31%
Other interventions	
Intravenous drip	84%
Bladder catheter	65%
Newborn intensive care unit stay	16%
Intervention	Rate among women who experienced labor
Miscellaneous labor practices	
Early admission (<5-centimeter dilation)	76%
Any electronic fetal monitoring	84%
One or more vaginal exams	78%
Immobilization throughout labor	61%

*As discussed on page 47, this should be understood as a conservative estimate that underestimates rate of labor inductions without evidence-based indications.

**This range is due to the 10% of women with attempted induction who were "not sure" whether this procedure had in fact started their labor.

“ ”

Didn't like the feel of having a baby (natural experience) in the hospital setting. There was definitely a lot of attempt at intervention going through OB-GYN and hospital - requesting/pushing to do sweeps at 38 weeks+, induction date set 1.5 weeks after due date, OB-GYN wanted to puncture water, pitocin pushed (with threat of C-section) late in labor when progress seemed to stop.

”

Physiologic Childbirth

The reVITALize Obstetric Data Definitions Project defined Physiologic Childbirth as "Spontaneous labor and birth at term without the use of pharmacologic and/or mechanical interventions for labor stimulation or pain management throughout labor and birth. Does not apply if any of the following are used or performed: opiates/nitrous oxide, augmentation of labor, regional anesthesia analgesia except for the purpose of spontaneous laceration repair, artificial rupture of membranes, [or] episiotomy."^{*}

We calculated the physiologic childbirth rate of *Listening to Mothers in California* survey participants. All data were collected through the survey except for use of assisted vaginal birth via vacuum extraction or forceps, which was derived from respondents' birth certificates. The physiologic childbirth rate of survey participants was 4.9%, and was experienced by 124 women in our sample (unweighted count).

Whether women experienced physiologic childbirth varied within subgroups. While these results are consistent with other survey findings, we caution that they are based on small numbers. Women covered by Medi-Cal (7%) were similar to women with private insurance (6%) in their experience of physiologic childbirth. Meeting criteria for physiologic childbirth varied little by race/ethnicity: White 7%, Latina 6%, Black (5%), and Asian and Pacific Islander 5%.

Among women who spoke English at home, rates of physiologic birth varied by labor doula support (14% with, 5% without). Women with a midwife birth attendant (13%) were more likely to meet criteria for physiologic childbirth than women with an obstetrician attending her birth (4%). Finally, the combination of midwife birth attendant and labor doula may have a synergistic effect, as 37% of women with such a care team met the criteria for physiologic childbirth, though this total number of English-speaking women who had a doula and midwife ($n = 33$) reflects a very small portion of our sample. (See Chapter 1 for rationale for limiting doula analyses to women who spoke English at home.)

“

The birthing team was amazing. I loved my experience ... I was convinced I could do it and I did it. Best choice ever – recovery was so quick and smooth. They helped me in having a natural birth in a hospital setting.

”

”

The hospital staff was amazing! They allowed me to do all of the things that I wanted to do for my labor and birth. Including: no pain medications, dimmed lights, diffusing essential oils, standing/other labor positions, use a regular bathroom ... – giving encouragement and strategies.

”

”

I am a big supporter of natural birthing and none of the OBs that I have encountered know how to deal with a woman who wants to birth naturally.

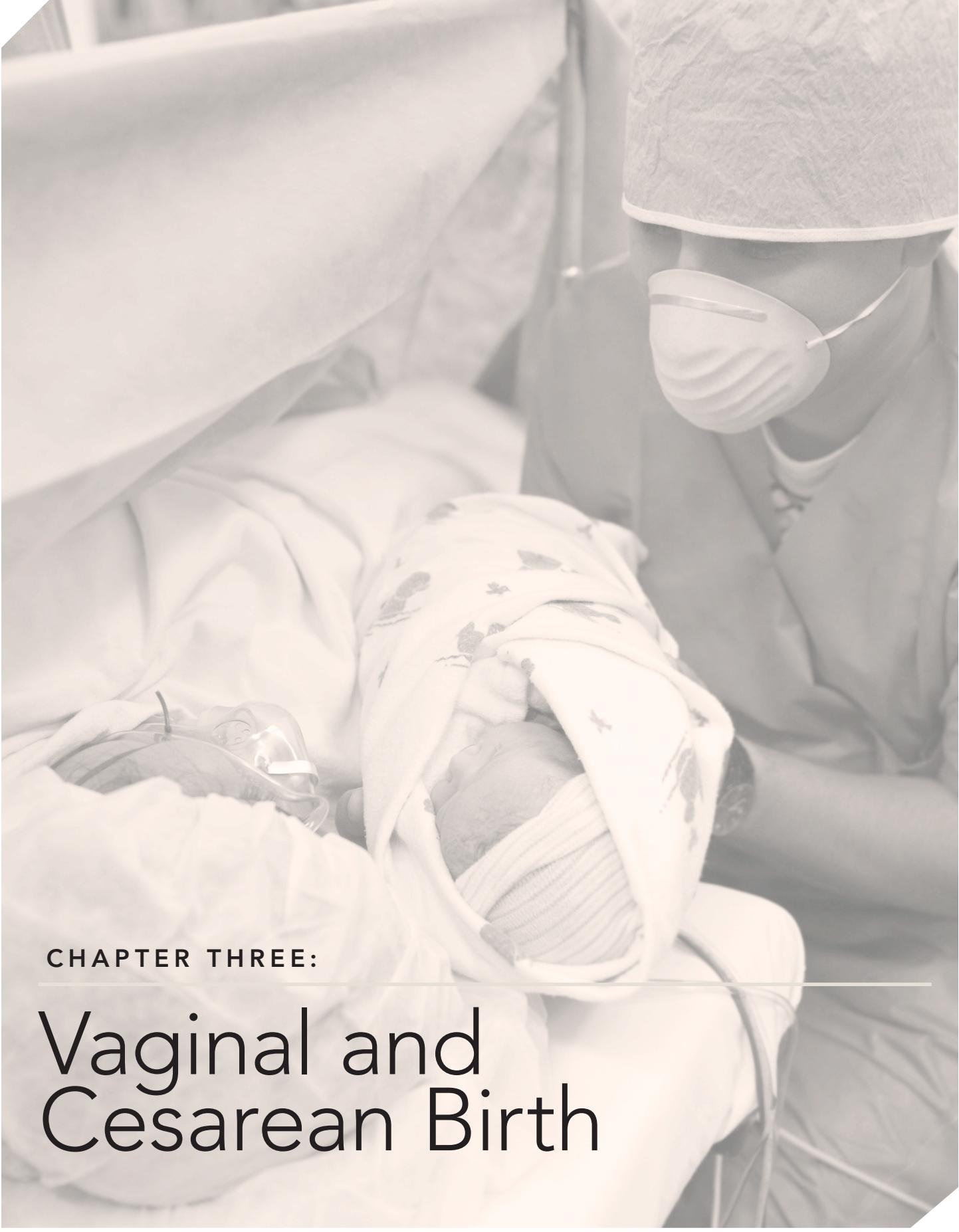
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”

I really appreciated that [hospital name] is willing to allow natural birth at their hospital and didn't interfere with what I wanted.

”

^{*}American College of Obstetricians and Gynecologists. (2017). *reVITALize Obstetric Data Definitions*. Retrieved 26 March 2018, from <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize-Obstetric-Data-Definitions>



CHAPTER THREE:

Vaginal and Cesarean Birth

Mode of Birth

We devoted considerable focus in our survey to topics relating to mode of birth, given growing national and California recognition of the overuse of cesarean birth, the associated risk and cost with safely avoidable cesarean births, and the many policy initiatives in California to reverse the trends.* To provide more appropriate care to childbearing women, it is important to understand current patterns of mode of birth, the focus of this opening section.

Sorting All Births by Mode of Birth

Table 4 places the birth of every woman in our survey in one of eight groups, depending on whether it was vaginal or cesarean and by further breakdowns. By far, the largest group is 65% of women with no previous cesarean who had a vaginal birth that was "unassisted" (i.e., with no vacuum extraction or forceps). While 17% had one or more cesareans in the past, only 2% of the total had a vaginal birth after cesarean (VBAC). Combining these groups, the proportion of unassisted vaginal births in California was 67%. Just 2% of women in our survey had an assisted vaginal birth with vacuum or forceps (data we obtained from survey participants' birth certificates), resulting in 69% of participants with any vaginal birth. Clinical practice guidelines support fewer cesareans by increasing both of the small groups with just 2% of childbearing women each: women with VBAC and women with safe, judicious assisted vaginal birth, and by increasing vaginal birth in women who have not had a previous cesarean.**

Cesarean planning status varied widely by past cesarean status. In the case of primary, or first-time, cesareans, more than 2 in 3 women reported the cesareans were unplanned and occurred during labor (11% among 16%). In the case of repeat cesareans, almost all (13% among 15%) were planned or scheduled and generally occurred before the onset of labor. The sum of first-time cesareans (in 16% of all women) and repeat cesareans (in 15% of all women) yields the total cesarean rate among our participants: 31% (Table 4).

Table 4. Sorting Births, by Mode of Birth and Further Breakdowns

		Vaginal, 69%	
		Vaginal/no previous cesarean, 67%	Vaginal birth after cesarean, 2%
Unassisted		65%	2%
Vacuum or forceps assisted		2%	0%
Total Cesarean, 31%			
		Primary (first) cesarean, 16%	Repeat cesarean, 15%
Unplanned		11%	2%
Planned		5%	13%

Base: All women (n=2529)

Overall my birth and delivery went very well. I am glad I was able to have a vaginal delivery that I was hoping for. If I could do it all over again I would not change anything.

My OB was supportive, knowledgeable, and worked extremely hard to make sure I had a vaginal birth. Also, our nurse was fantastic.

* Integrated Healthcare Association. (n.d.). *Smart Care California, Focus Area: C-Sections*. Retrieved 25 April 2018, from <https://www.aha.org/our-work/insights/smart-care-california/focus-area-c-sections>

** American College of Obstetricians and Gynecologists' Committee on Practice Bulletins – Obstetrics. (2017). Practice Bulletin No. 184: Vaginal Birth After Cesarean Delivery. *Obstetrics & Gynecology*, 130(5), e217-e233. Retrieved 10 August 2018, from <http://www.ican-online.org/batonrouge/wp-content/uploads/sites/56/2014/12/ACOG-Practice-Bulletin-184-2017.pdf>; American College of Obstetricians and Gynecologists. (2015, reaffirmed 2018). Practice Bulletin 154: Operative vaginal delivery. *Obstetrics & Gynecology*, 126(5), e56-65. Retrieved 14 April 2018, from https://journals.lww.com/greenjournal/Citation/2015/11000/Practice_Bulletin_No_154__Operative_Vaginal.50.aspx; American College of Obstetricians and Gynecologists and Society for Maternal-Fetal Medicine. (2014, reaffirmed 2016). Safe prevention of the primary cesarean delivery. *Obstetric Care Consensus*, March (1). Retrieved 19 October 2017, from <http://www.acog.org/Resources-And-Publications/Obstetric-Care-Consensus-Series/Safe-Prevention-of-the-Primary-Cesarean-Delivery>

Mind the Denominator: Variety of Cesarean Rates

Many cesarean rates are used when considering mode of birth. Table 5 further clarifies the four different population groups and denominators used in four different cesarean rates, and presents survey results for each. The **total cesarean rate** is the proportion of cesareans among **all births**. In our survey, nearly 1 woman in 3 had a cesarean, for a total cesarean rate of 31%. The **primary, or first, cesarean rate** is the proportion of cesareans among **all women who have never had a cesarean** – both those giving birth for the first time and those who have only given birth vaginally in the past. In our survey, 19% of women who had never had a cesarean had one in 2016. The **repeat cesarean rate** is the proportion of cesareans among all **women who have had one cesarean or more** in the past. In our survey, 85% of women who had had one cesarean or more again gave birth by cesarean.

Finally, the “NTSV” cesarean rate is the proportion of cesareans among low-risk first-birth women. Limiting the rate to low-risk women makes for fairer comparison, for example, across hospitals. The great majority of women whose first birth is vaginal have vaginal births in future pregnancies; thus, the focus on women giving birth for the first time. NTSV stands for a woman having her first birth (Nulliparous) and giving birth after 37 or more weeks’ gestation (Term) to a single baby (Singleton) that is born in a head-first (Vertex) position. The NTSV cesarean rate is a performance measure that is used throughout the country and extensively by Covered California and other entities in California. California leaders aim for an NTSV rate less than 23.9%, and women in our survey reported an NTSV rate of 26% in 2016. We calculated this with survey results and – for vertex presentation – participants’ birth certificates. We did not have access to participants’ discharge records to incorporate certain exclusions in the official nationally endorsed low-risk, first-birth cesarean measure. The official measure using discharge records was slightly lower, 25%, in California in 2016.

Table 5. Mind the Changing Denominator for Different Rates of Cesarean Birth

Name of rate	Rate is proportion of cesareans among	Survey Rate
Total cesarean	All births	31%
Primary cesarean	All births to women who have never had a cesarean	19%
Repeat cesarean	All births to women who have had one or more past cesareans	85%
“NTSV” cesarean*	All births to “low-risk,” first-birth women*	26%

Base for total cesarean: All women (n=2529)

Base for primary cesarean: Women with no previous cesarean (n=2082)

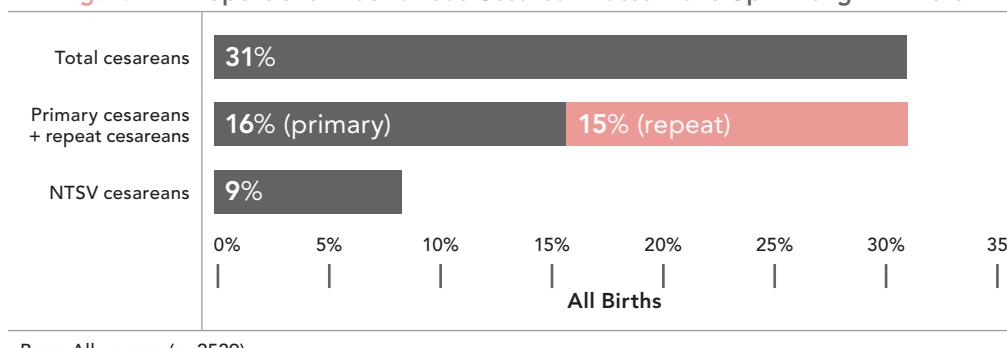
Base for repeat cesarean: Women with a previous cesarean (n=447)

Base for NTSV cesarean: Women giving birth for the first time, to a single baby in head-first position at term (n=873)

*N = “nulliparous” women who have not previously had a baby, T = “term” baby born at 37 or more weeks’ gestation, S = single baby, and V = “vertex” or baby in a head-first position. Covered California uses this nationally endorsed cesarean measure.

Figure 29 shows the proportion of all birthing women who are impacted by the four different cesarean rates. The total cesarean rate is straightforward and impacted 31% of our sample. The primary cesarean rate impacted 16%, and the repeat cesarean impacted 15%, together adding up to that total rate. While critical for policy and stakeholder direction, the NTSV cesarean rate impacted a smaller proportion of women in our study, just 9%.

Figure 29: Proportions That Various Cesarean Rates Make Up Among All Births



Total Cesarean Rate and Primary Cesarean Rate

The total cesarean rate of 31% varied by different subgroups. As shown in Figure 30, the total cesarean rate among Black women was distinctly higher than the rate within other racial/ethnic groups ($p = .05$). Women covered by Medi-Cal were more likely to have a cesarean birth (34%) than women with private insurance (28%) ($p < .01$).

Women who had an obstetrician as their prenatal care provider (32%) had a distinctly higher total cesarean rate than women who had a midwife as their prenatal provider (18%) (Figure 30) ($p < .01$). While higher-risk women using an obstetrician for prenatal care likely explain some of this 14-point difference, we also examined NTSV cesarean rates limited to low-risk, first-birth women, and there was once again a sharp distinction between those using an obstetrician (28%) and a midwife (17%) ($p < .01$) for prenatal care. Self-selection may also play a role, as women may seek out a midwife with the hope of decreasing their chances of a cesarean.

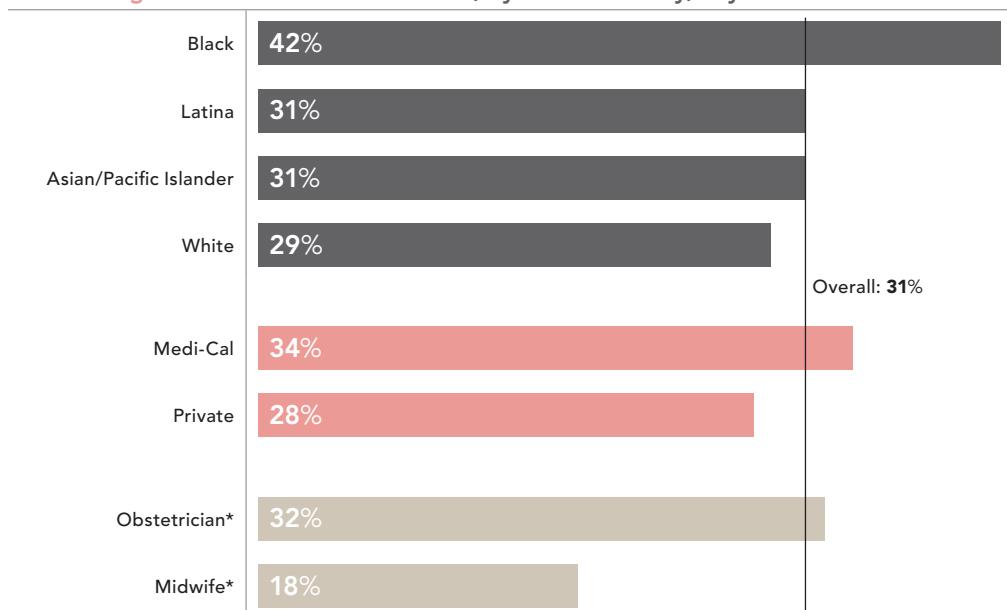
As discussed in Appendix C, any comparison between our subgroup cesarean rates and those derived from other sources must consider our survey methodology, including the basis for our numerators and our denominators. Please see Appendix C for further discussion.

“

I hated my birth experience. It was the exact birth I wanted to avoid. ... I never want to experience a C-section again.

”

Figure 30: Total Cesarean Rates, by Race/Ethnicity, Payer and Provider



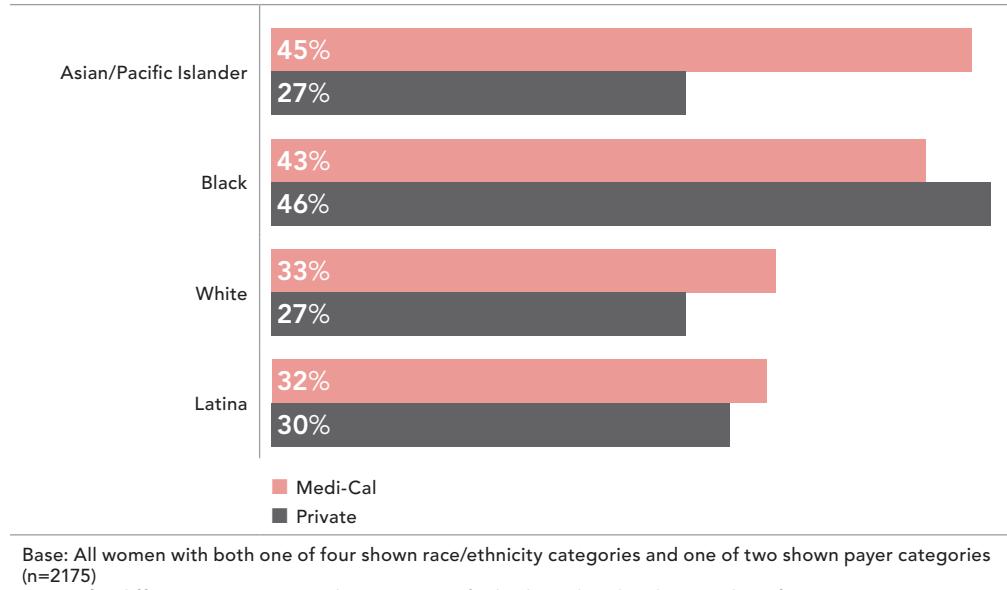
*Provider most often providing care during pregnancy.

Base: All women (n=2529)
 $p = .05$ for difference by race/ethnicity
 $p < .01$ for difference by payer and provider

Among respondents who speak English at home, 22% with labor doula support had a cesarean birth versus 31% with no labor doula support ($p = .04$) (see Chapter 1 for the rationale for limiting doula analyses to women who speak English at home).

When we combine race/ethnicity and payer (Figure 31), differences become even more pronounced. Privately insured women experienced a spread in total cesarean rates of more than 20 percentage points across four racial/ethnic groups ($p < .01$), and women covered by Medi-Cal experienced a spread of 10 percentage points ($p < .01$). Almost half (46%) of Black women with private insurance had cesarean births, a rate more than 50% higher than any other racial/ethnic group with private insurance ($p < .01$). Another striking difference by payer is among Asian and Pacific Islander women: those with Medi-Cal coverage had a total cesarean rate of 45%, more than 60% higher than those with private insurance (27%) ($p < .01$).

Figure 31: Total Cesarean Rates Across Race/Ethnicity Groups, by Payer

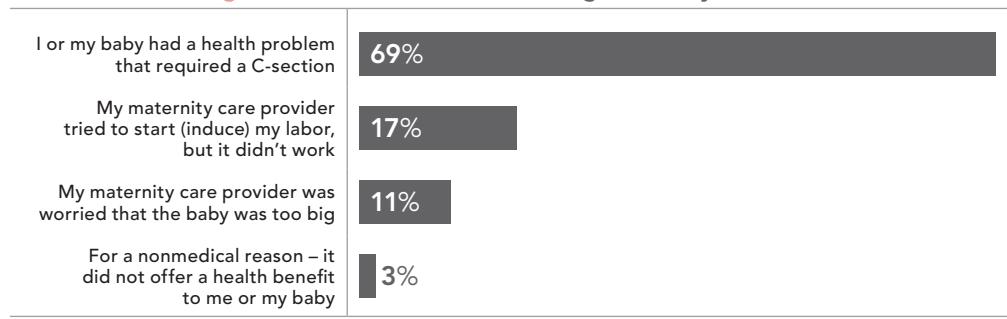


Women who reported feeling pressure from a health professional to have a cesarean had a cesarean rate triple (75%) that of women who reported they had not experienced such pressure (25%). (Further discussion of pressure to have cesarean and other interventions appears in Chapter 4.)

Main Reason for Having a Primary Cesarean

The most commonly cited reason (69%) for an initial or primary cesarean was a health problem of the woman or her baby that required a cesarean, followed by an unsuccessful labor induction (17%) and concern the baby was too big (11%). Only 3% of women indicated there was no medical reason (Figure 32).

Figure 32: Main Reason for Having a Primary Cesarean



Doctors DO encourage C-sections. ... I don't think my C-section was entirely necessary.

[The worst thing about my care was] my doctor threatening me to do a C-section if I couldn't 'figure out how to push correctly.' Also pressured me to have an episiotomy.

[The best thing about my care in the hospital was] the patience that the labor and delivery doctor had with me. He also didn't jump the gun for me to get a C-section when he could have.

Maternal Request Cesarean Remains Rare

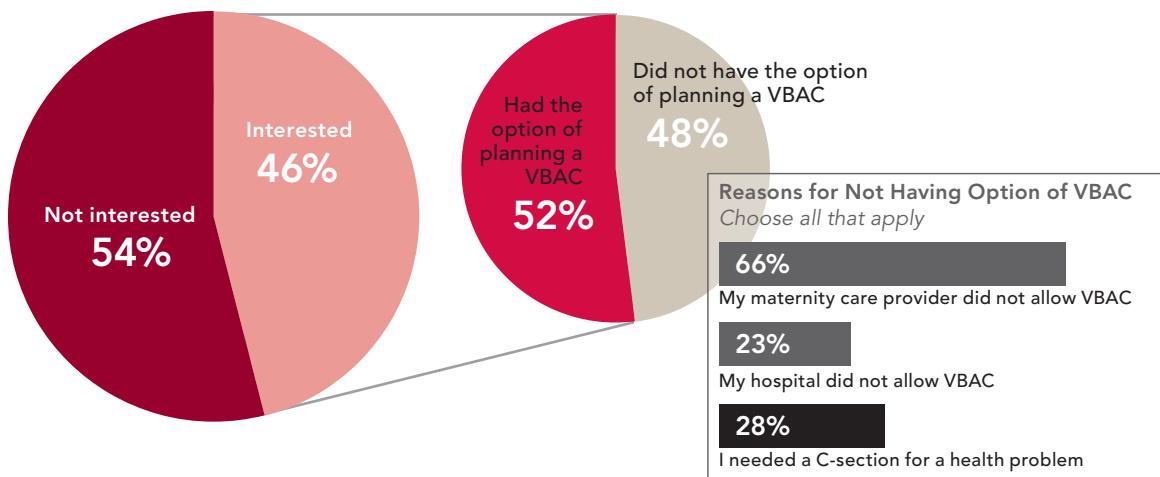
We combined responses to two questions: (1) if the woman asked about a planned primary cesarean and (2) if she understood that her primary cesarean was not for a medical reason. We have used the cross-tabulation of such questions in the past to identify maternal request primary cesareans. In this case, only 1.3% of women with a primary cesarean (5 out of 385 actual respondents) met these criteria for a maternal request primary cesarean, a figure that is consistent with our prior studies.

Mode of Birth in Women With One or More Past Cesareans

Repeat Cesareans and Interest in Vaginal Birth

Among women who had a repeat cesarean, 46% indicated they had had an interest in having a VBAC. This level of interest is notable in the environment of persistent repeat cesarean rates of nearly 9 in 10. We asked women who had an interest whether they had had the option of planning a VBAC, and almost half (48%) reported that they had not had the option. When asked about reasons for not having the option of planning a VBAC (and to "choose all that apply"), more than 6 in 10 (62%) reported that their provider and nearly 1 in 6 stated that their hospital (17%) did not allow VBAC, while 39% identified a need for a cesarean for their recent birth (Figure 33).

Figure 33: Interest in VBAC and Option of VBAC



Base: Among women with a repeat cesarean, whether was interested in VBAC (n=331)

Base: Among women with repeat cesarean who were interested in VBAC, whether had option (n=155)

Base: Among women with repeat cesarean who were interested in VBAC and did not have the option, reason(s) for not having option (n=71)

Notes: Respondents could select more than one answer choice for "Why didn't you have the option of planning a VBAC?"

Among women who indicated an interest in a VBAC but ended up with a repeat cesarean, 32% reported that they experienced at least some time in labor.

“

I felt rushed to deliver or else have a C-section.

”

”

The hospital I would be delivering at would not let me have a vaginal birth because I had a previous C-section.

”

”

I didn't like how I was forced to have another C-section when I was attempting a VBAC.

”

“

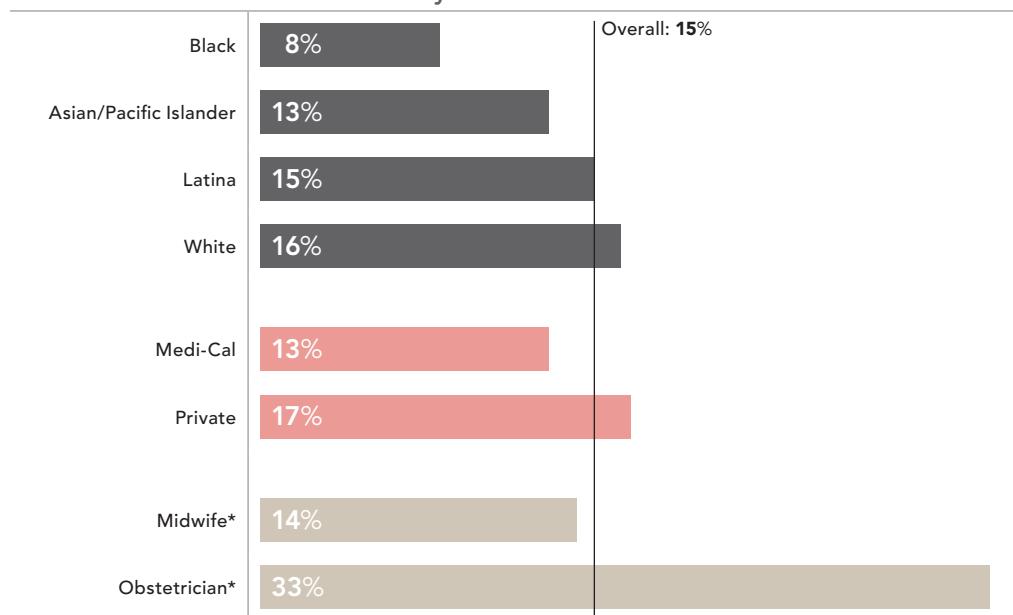
No one really believed I could achieve a VBAC and kept giving me all the reasons why it wouldn't work even though they 'supported my choice.'

”

Characteristics of Women with VBAC

About 1 in 6 pregnant women in California (17%) approached their most recent birth having had at least one prior cesarean. Among those, just 1 in 7 (15%) had a VBAC, while 85% had a repeat cesarean. VBAC rates varied by subgroups. Across racial/ethnic groups, VBAC rates ranged from just 8% among Black women to 16% among White women (16%) ($p < .01$). Women with Medi-Cal coverage had a lower rate of VBAC (13%) than women with private insurance (17% rate) ($p < .01$). We found large differences in VBAC rates between women who primarily had an obstetrician (14%) and those who primarily had a midwife (33%) for prenatal care ($p < .02$). This may reflect a commitment of many midwives to support planned VBAC and of women with an interest in VBAC who choose midwifery care, as well as greater need for cesarean in women with obstetrical care (Figure 34).

Figure 34: Vaginal Birth After Cesarean (VBAC) Rates, by Race/Ethnicity, Payer and Provider



*Provider most often providing care during pregnancy.

Base: All women (n=2529)

$p < .01$ for difference by race/ethnicity and payer

$p < .02$ for difference by provider

We asked survey participants whether they had experienced any pressure from a health care professional to have a cesarean. Women who reported that they had experienced pressure to have a cesarean were less likely to have a VBAC (12%) than women who did not experience pressure (15%) ($p < .01$). Women who primarily spoke Spanish in their homes (19%) were more likely than those who spoke English (12%) to have a VBAC ($p < .01$).

Main Reason for Having a Repeat Cesarean

We asked women who had had a repeat cesarean to identify the reason for having a cesarean that best applied to their situation. For more than 6 in 10 (62%), the reason was the fact of a past cesarean without a medical indication. Approximately 15% said that she or her baby had had a health problem calling for a cesarean in the present birth, and about 1 in 5 (18%) said it was a combination of both past cesarean and present health issue. For 2%, there had been no health benefit, and the cesarean was for a nonmedical reason (Figure 35.)

“

[The best thing about my care was] that we were heard and that they respected my wishes and they pretty much did everything I said – because ultimately, I wanted a VBAC and I was able to fight for it.

”

“

I was very supported in my decision to have a drug-free VBAC, both from the midwife I was seeing and when I saw any OB-GYNs during my pregnancy. All of the labor and delivery staff ... were very helpful and friendly, and I pretty much had the birth that I had wanted to have.

”

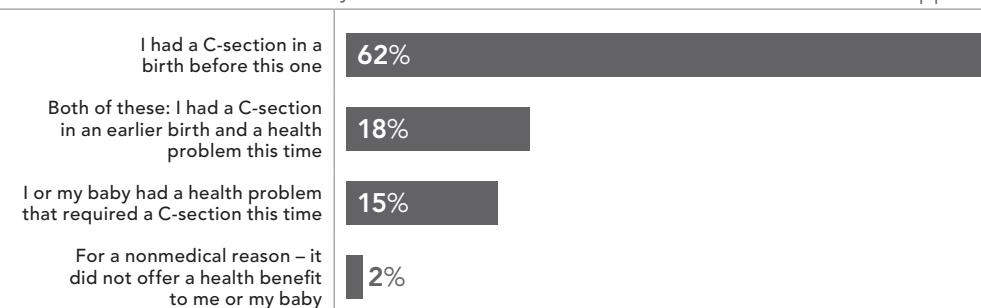
“

I had a lot of support during delivery which I believe helped me deliver vaginally after a C-section.

”

Figure 35: Main Reason for Having a Repeat Cesarean

What was the main reason for your recent C-section? Choose the reason that best applies.

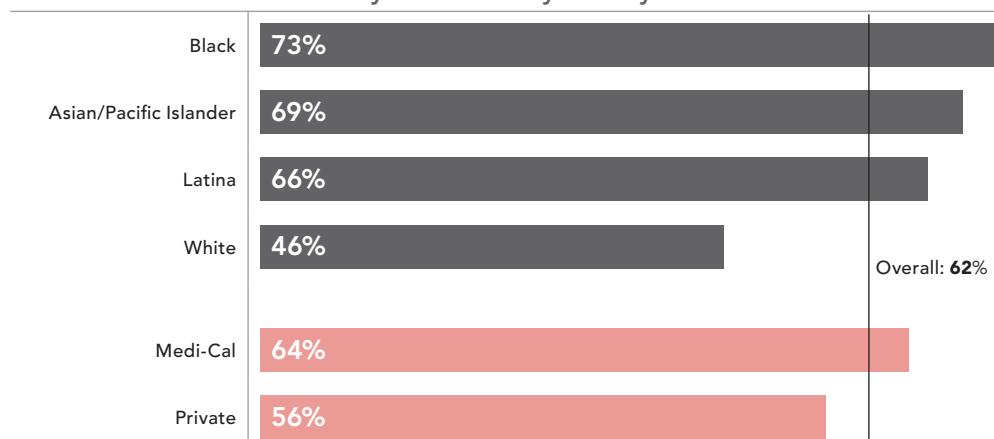


Base: Women who had a repeat cesarean (n=334)

Note: "Some other reason" not shown.

Looking by subgroups at women who identified previous cesarean as the main indication for their recent, repeat cesarean reveals a greater likelihood that White women and women with private insurance would have a reason for their recent cesarean that was not simply the fact of a prior cesarean. In the greatest spread across racial/ethnic groups, 73% of Black women reported that the fact of a previous cesarean was the main reason for their recent cesarean, in comparison with 46% of White women ($p < .01$). Previous cesarean was the main indication for 64% of women with Medi-Cal coverage versus 54% of women with private insurance (Figure 36).

Figure 36: Main Reason for Repeat Cesarean was Previous Cesarean, by Race/Ethnicity and Payer



Base: Women whose previous cesarean was main reason for repeat cesarean (n=210)
 $p < .01$ for difference by race/ethnicity

Understanding Decision-Making About Birth Options After One or Two Cesareans

We repeated a sequence of questions from our last national *Listening to Mothers* survey designed to understand clinical decision-making processes. These were adapted with permission for maternity care following extensive research investigating 10 other clinical scenarios.* We asked women with one or two past cesareans a screener question to identify those asked this sequence: had she spoken in pregnancy with a maternity care provider about scheduling another cesarean because of her past cesarean(s)? The screener thus identified those who considered options of waiting for labor or planning another cesarean. We limited this to one or two past cesareans as guidance and evidence support offering VBAC and information about it to most women with one or two past cesareans.

*Zikmund-Fisher, B.J., Couper, M.P., Singer, E., Ubel, P.A., Ziniel, S., Fowler, F.J., Levin, C.A., & Fagerlin, A. (2010). Deficits and variations in patients' experience with making 9 common medical decisions: the DECISIONS Survey. *Medical Decision Making*, 30(5 suppl), 855-955.



I didn't like how I was forced to have another C-section when I was attempting a VBAC.



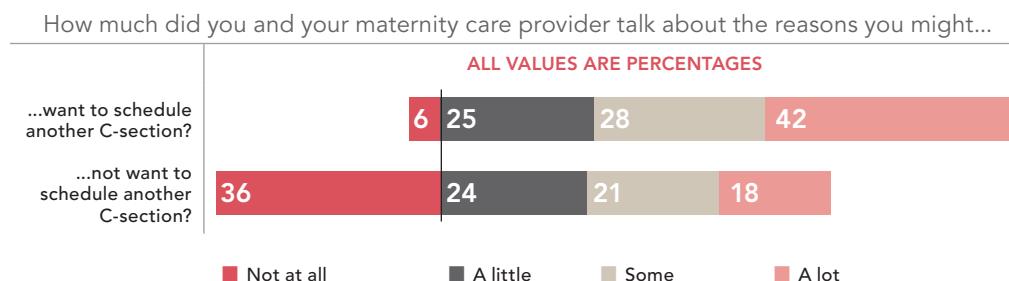
Table 6 summarizes results of decision-making processes for this group. These questions were asked of about 3 in 4 women among those with one or two past cesareans who said they had discussed the possibility of having an intervention – a repeat cesarean – with their maternity care provider (74%).

Table 6. Decision-Making Processes and Care Outcomes for Birth Options After One or Two Cesareans

Survey Question Sequence	Results	Base
During your recent pregnancy, did you ever talk with your maternity care provider about scheduling another C-section because of your past C-section[s] (% yes)?	74%	n=402
How much did you and your maternity care provider talk about the reasons you <u>might want</u> (% "some" or "a lot") to have a repeat cesarean?	69%	n=285
How much did you and your maternity care provider talk about the reasons you <u>might not want</u> (% "some" or "a lot") to have a repeat cesarean?	40%	n=283
Did your maternity care provider explain that there were choices (% yes)?	68%	n=285
Did your maternity care provider express an opinion about whether or not you should have a repeat cesarean (% giving an opinion)?	74%	n=281
Did your maternity care provider think you should or should <u>not</u> have (% should have repeat cesarean among those who expressed opinion)?	88%	n=281
Did your maternity care provider ask you whether or not you <u>wanted</u> to schedule a repeat cesarean (% yes)?	76%	n=282
Who made the final decision whether or not to have the repeat cesarean (% I did/% provider did/% shared decision)?	34%/22%/45%	n=282
Outcome of Care, by Whether Discussion Occurred	VBAC Rate	
Among women who discussed option of a repeat cesarean with their provider	11%	n=286
Among women who did <u>not</u> discuss option of a repeat cesarean with their provider	30%	n=116

We asked the women how much they had discussed both reasons why they *might* want to have a repeat cesarean and reasons why they *might not* want to have a repeat cesarean. Their responses, shown in Figure 37, suggest that the information was overall skewed in favor of the procedure. For example, more than 1 in 3 (36%) had no discussion at all about why they might not want to schedule another cesarean, versus 6% who had no discussion about why they might want to schedule another cesarean. At the other end of the spectrum, 42% had a lot of discussion about why to have the procedure versus 18% who had a lot of discussion about why not to have the procedure. Virtually all providers (94%) spoke at least "a little" about reasons for a cesarean, compared with 64% who spoke at least "a little" about reasons not to have a cesarean ($p < .01$ for amount of discussion for and against another cesarean).

Figure 37: Amount of Discussion about Repeat Cesareans



Base for discussion of reasons to schedule: Women who talked with provider about scheduling repeat cesarean because of past cesareans (n=285)

Base for discussion of reasons not to schedule: Women who talked with provider about scheduling repeat cesarean because of past cesareans (n=283)

$p < .01$ for difference in amount of discussion by whether to schedule another C-section

“

I did not want to ever get another C-section. They are very painful afterwards and the scar never truly heals. ... I did feel pressure from the doctors to have another a C-section, even though the ultimate decision was up to me. I did not care what the doctors said, I was NOT, and do mean NOT, going to have another C-section. I had my baby through a vaginal birth.

”

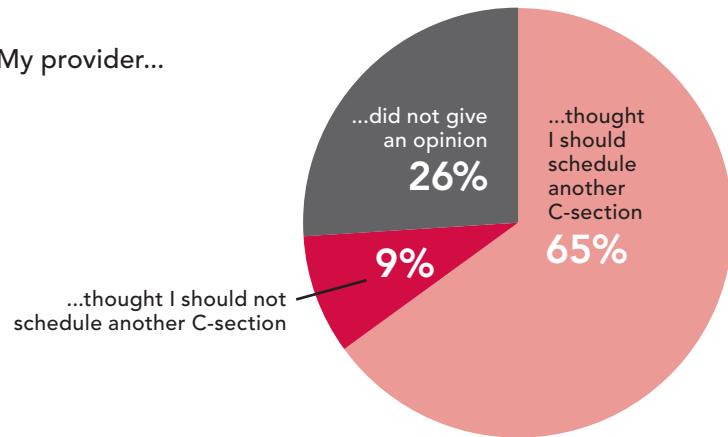
“

To have a VBAC was my OB's suggestion, and even though i wanted this, she made me feel like it was a real possibility. ... I love my OB and her support.

”

Moreover, almost one-third of respondents (32%) indicated that the discussion was not framed as a matter of choice. We further asked whether their care provider had made a recommendation about whether or not to have a repeat cesarean, and about 3 in 4 women (74%) reported that their provider had made a recommendation. We then asked women who had been given a recommendation, what it was, and providers favored a repeat cesarean by more than 7 to 1 (65% to 9%) (Figure 38).

Figure 38: Recommendation About Repeat Cesarean Decision

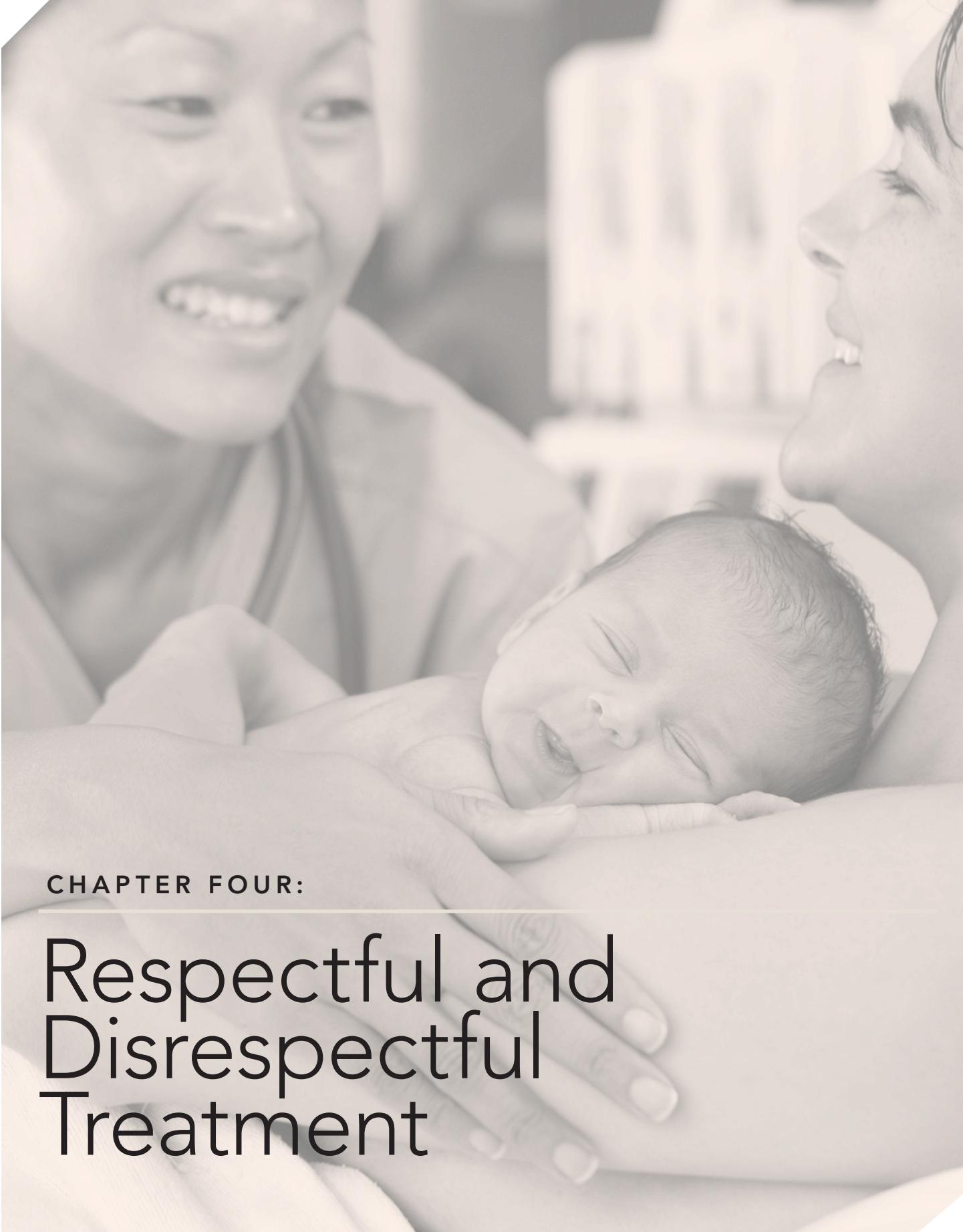


Base: Women who talked with provider about scheduling repeat cesarean because of past cesareans (n=281)

We looked at actual mode of birth, and found that the VBAC rate among women who had had these discussions was 11%, whereas the VBAC rate among women who said they had not had such a discussion was 30% ($p < .01$). Finally, we asked women who had made the decision, and found that a plurality (45%) felt it was a joint decision, followed by 34% who felt it had been their own decision. Just 22% identified their provider as the main decision-maker. Given both skewed information and skewed recommendations, women with previous cesareans may erroneously feel that they are making informed decisions about how to give birth.

This look at decision-making discussions helps to understand why just 2% of all births in our study were VBACs. Further analysis of results from this question sequence in our national *Listening to Mothers III* survey is available.*

*Declercq, E.R., Cheng, E.R., & Sakala, C. (2018). Does maternity care decision-making conform to shared decision-making standards for repeat cesarean and induction after suspected macrosomia? *Birth*, 45(3), in press.



CHAPTER FOUR:

Respectful and Disrespectful Treatment

Respectful and Disrespectful Treatment

Globally, there is increased concern with the extent of disrespectful treatment of childbearing women, and recognition that no country is immune from this. Concerns include whether childbearing women are treated with dignity, are free from discrimination, receive high-quality information, have their preferences honored, and do not experience physical or emotional mistreatment. Some of these concerns arise in previous chapters, for example, that many women did not have a choice of their prenatal care provider (Chapter 1), that most women with an episiotomy did not have a say in whether to have that procedure (Chapter 2) and that women with one or two past cesareans received imbalanced information about birth options in their recent pregnancy (Chapter 3).

This chapter reports on several additional items included in our survey to investigate respectful and disrespectful treatment of childbearing women.

I loved giving birth. I felt like the nurses and midwife respected my choices and wanted to take good care of me and my baby. The midwife really took her time stitching up my tear, and carefully explained what she was doing after the baby was born. They protected my 'golden hour' with my daughter.

Perceived Bias in Care

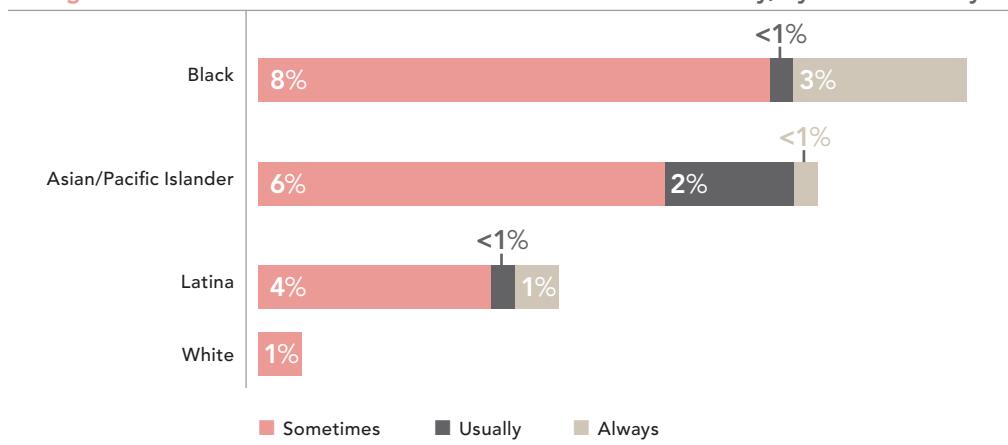
We asked women, "During your recent hospital stay when you had your baby, how often were you treated unfairly because of your race or ethnicity?" We also repeated the question in terms of the language a woman spoke and type of health insurance she had or because she didn't have health insurance. A very large majority of respondents (95–96%) indicated that they had not experienced such a behavior during their hospital stay. However, when broken out by subgroups, some differences emerge.

Bias Related to Race and Ethnicity

While only 4% of women overall reported being treated unfairly because of their race or ethnicity during their hospital stay, part of that small portion was driven by less than 1% of White women reporting such treatment. A total of 11% of Black women reported being unfairly treated based on their race or ethnicity, while 8% of Asian and Pacific Islander women and 5% of Latinas identified experiencing unfair treatment as a result of their race or ethnicity. White women had a clear advantage with none reporting "usually" or "always" ($p < .01$) (Figure 39).

They didn't respect our religion or our religious practices at all.

Figure 39: Perceived Unfair Treatment Due to Race or Ethnicity, by Race/Ethnicity



Base: All women (n=2502)
 $p < .01$ for difference by race/ethnicity
Notes: "Never" not shown.

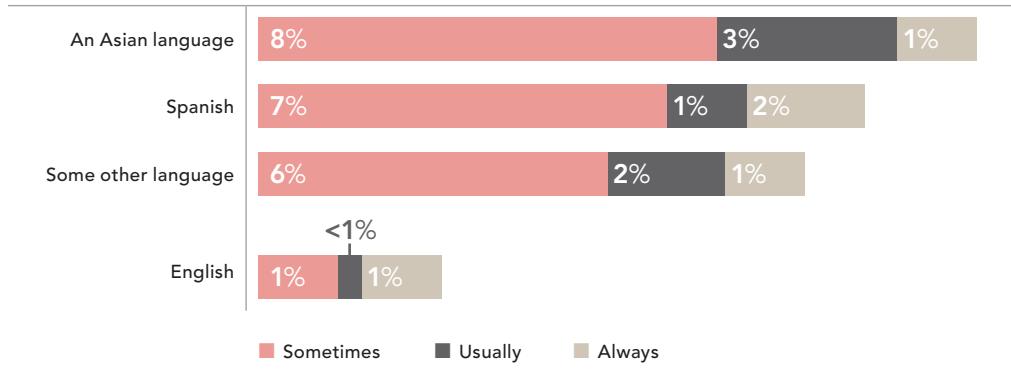
[The worst part of our childbirth experience was] the racial comments that they would make to my husband.

Women giving birth should be treated with respect no matter their skin color.

Bias Related to Language

To explore perceived bias related to language spoken, we grouped respondents by their reports about the primary language spoken at home. Approximately 13% of women who spoke an Asian language and 10% of women who primarily spoke Spanish reported being treated unfairly during their hospital stay because of their language, followed by 9% of women who selected "some other language." English speakers rarely cited a problem (2%) ($p < .01$) (Figure 40).

Figure 40: Perceived Unfair Treatment Due to Language, by Language



Base: All women (n=2507)

$p < .01$ for difference by language

Notes: Languages are those usually spoken at home.

"Never" not shown.

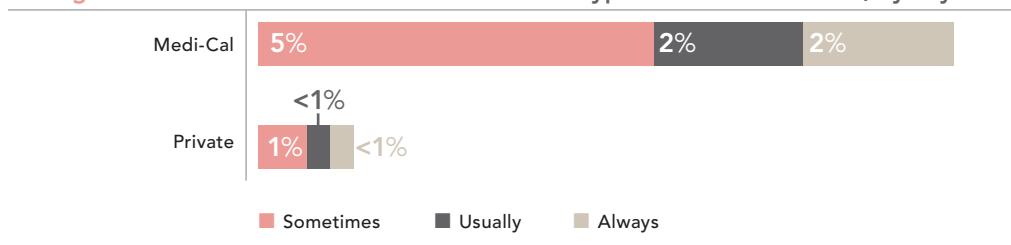
"Speak English and Spanish equally at home" not shown.

We offered versions of the survey in English and Spanish and with English- and Spanish-speaking interviewers, so we heard from Spanish speakers who might not be able to communicate in English in health care settings. The largest perceived bias – those who spoke an Asian language at home – is striking because these survey respondents were able to participate in English. This raises the question of whether the concern associated with Asian-language speakers would have been greater had we been able to include speakers of Asian languages who could not participate in English.

Bias Related to Insurance

Women with Medi-Cal coverage were far more likely than women with private insurance (9% versus 1%) to say that they had experienced unfair treatment in the hospital because of the type of insurance they had or lack of insurance ($p < .01$). Expressing nearly as much concern as Medi-Cal beneficiaries, and greater rates of "always" and "usually" experiencing insurance-related bias, were women who were unable to more precisely describe their insurance source (not shown). Too few women reported being uninsured to analyze them as a subgroup in this case (Figure 41).

Figure 41: Perceived Unfair Treatment Due to Type of Health Insurance, by Payer



Base: All women (n=2501)

$p < .01$ for difference by payer

Notes: "Never" not shown.

"Uninsured" not shown due to inadequate number of respondents for analysis.

The worst thing was that there were nurses that didn't speak Spanish and I couldn't communicate with them.

The nurses kind of get annoyed because one doesn't speak English and that makes one feel uncomfortable.

Since we don't speak English they don't take good care of us.

They were just rude about my insurance.

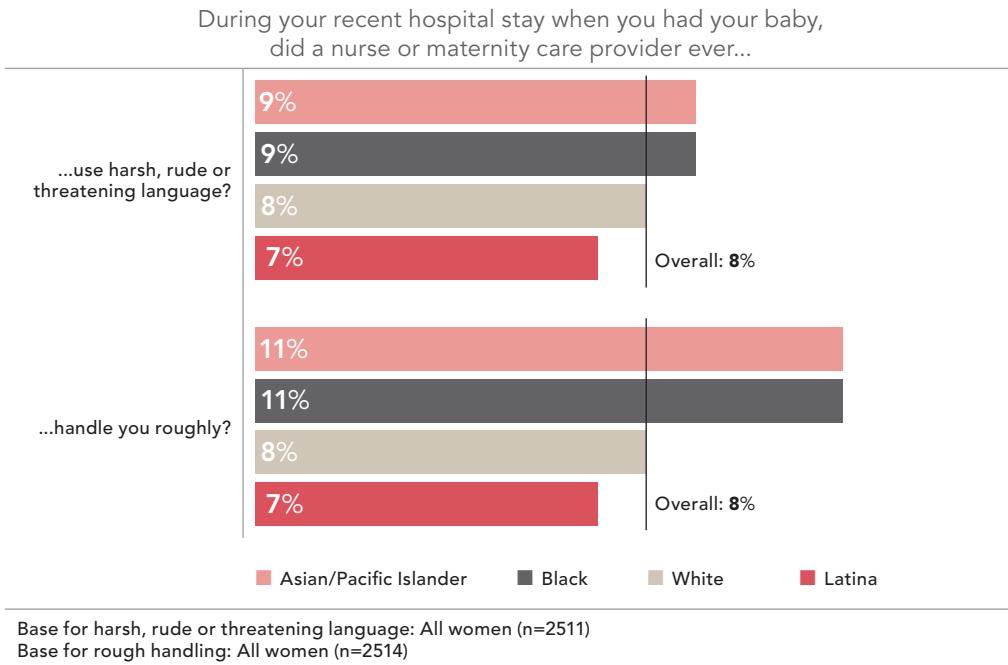
With my first child I had Medi-Cal and with my third child I had private PPO insurance. Quality of care and doctors' interest in patient was different.

Hospitals are judgmental against people on Medi-Cal and not married and have multiple children.

Harsh Language and Rough Handling

Overall, 8% of women reported that a nurse or maternity care provider used harsh, rude or threatening language during the hospital stay for childbirth, while 8% reported experiencing rough handling from a maternity care provider or nurse at this time. In general, there was little variation when we broke the “harsh language” question down by race/ethnicity, language, natality, payment source, age and parity. However, there was some variation in reporting of “rough handling.” Figure 42 shows the results for the two questions broken down by race/ethnicity. A small proportion (4%) of women reported experiencing both forms of ill treatment. The rate was slightly higher for Black women (7%) and for Asian-language speakers (6%) ($p < .01$) than White women or Latinas.

Figure 42: Experience of Harsh Language and Rough Handling, by Race/Ethnicity



At the NICU one of the nurses was very rude and didn't want to teach me new things. She was too busy with other babies and never got another nurse to help me.

The OB wasn't my original. It was some random lady I didn't know and was extremely rude.

The vaginal exams were very rough and painful.

One nurse I had was extremely rude and callous towards me and was very rough while checking my cervix.

The doctor who delivered the baby was cold and did not communicate well with me. At one point she said something like, 'I'm going to numb her up,' then started jabbing me with needles without asking me. During pushing as I yelled in pain, she actually told me to be quiet. Definitely not a good experience.

Some nurses were pushy, rude and forceful.

When I was talking to my anesthesiologist, he was very rude and he basically told me I couldn't have an epidural because I was too fat.

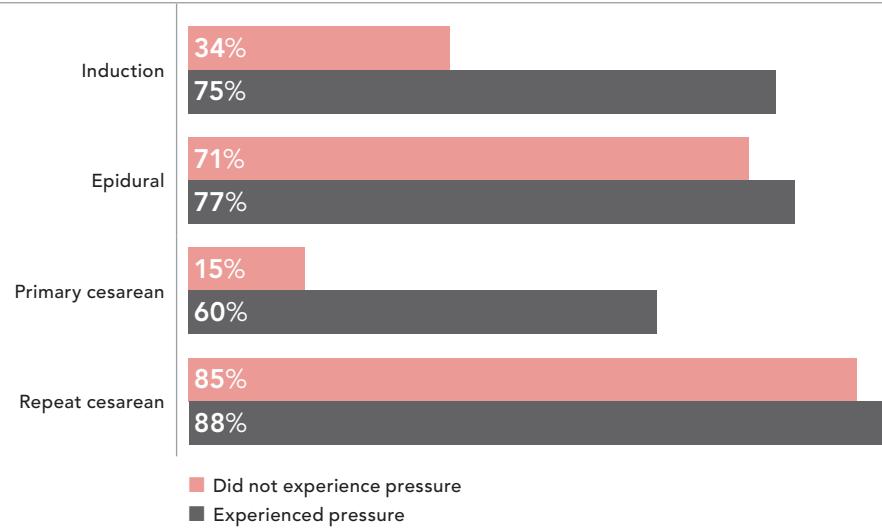
Perceived Pressure to Have Interventions

Given a large majority of women indicated a wish to avoid unneeded childbirth interventions (Chapter 2) and parallel growing concern among maternity-related clinical professional societies and policy makers about the extent of overused procedures, we asked women whether they had experienced pressure to have several consequential interventions: labor induction, epidural analgesia and cesarean birth. A limitation is that we are unable to judge whether a recommended procedure would likely provide a benefit in individual cases.

Survey respondents reported experiencing pressure from health professionals to have interventions. Overall, 14% of women experienced pressure to have their labor induced, and 12% of women who labored experienced pressure to have an epidural (we excluded women with planned cesareans from the epidural analysis, as epidural is considered an optimal form of analgesia for this group). More than 1 in 10 women (11%) experienced pressure to have a cesarean, although this varied considerably depending on whether she had had a previous cesarean. Among women with no previous cesarean, 9% experienced pressure to have a cesarean, while among women with a previous cesarean, 24% experienced pressure to have a cesarean.

Rates of intervention varied for women who did and did not experience pressure. Overall, 40% of survey respondents experienced attempted labor induction. However, this varied greatly by whether the women reported experiencing pressure from a health professional to have this procedure (34% with no pressure, 75% with pressure) ($p < .01$) (Figure 43). Overall, 75% of women who labored had an epidural. However, this varied by whether women reported experiencing pressure (71% with no pressure, 77% with pressure). Among all respondents, 31% had cesareans, and this varied as well by pressure experience (25% with no pressure, 75% with pressure) ($p < .01$). Among women with no prior cesarean, the variation was greater (15% with no pressure, 60% with pressure). Among women with one or more past cesareans, both those with no pressure (85%) and those with pressure (88%) were highly likely to have a cesarean.

Figure 43: Rate of Intervention, by Whether Experienced Pressure



Base for induction: All women (n=2489)

Base for epidural: Women who experienced labor (n=2087)

Base for primary cesarean: Women without a previous cesarean (n=2052)

Base for repeat cesarean: Women with a previous cesarean (n=437)

$p < .01$ for difference in rate of induction by whether experienced pressure

$p < .01$ for difference in rate of primary cesarean by whether experienced pressure

“

The worst thing is I felt like I was being pressured into decisions.

”

“

Out of my three pregnancies, two were without pain management and it's the best thing I could've done. My first I was kind of pressured by the anesthesiologist and he was kind of rude; not knowing what I was expecting from labor, I took it. The one thing I could say is listen to your body, and breathe through the pain.

”

“

I didn't appreciate the pressure to get the epidural or not given the option to labor down.

”

“

I didn't like how my doctor was trying to pressure me into a C-section and getting my tubes tied.

”

“

I was not encouraged to walk around during labor by nursing staff. I wanted to wait as long as possible before getting the epidural but the nursing staff kept urging me to get it as soon as I had contractions. I felt relief when I was allowed to move around yet they discouraged it, instead pushing me towards getting the epidural.

“

Well, from my point of view it was one of the best hospitals. They had patience with me despite those 15 hours that I was in labor. They didn't pressure me to have a C-section.

“

I didn't like that they pressured me to have a C-section when I clearly wanted a natural birth. ... I didn't like that they kept on telling me if I don't get a C-section then my baby will die. ... I feel like they played with my birth experience. Every time I look at my scar I'm reminded of what they did to me.

“

Great experiences with [hospital name]. Very competent and caring prenatal care and labor and delivery nurses. Never sensed I'd be pushed to do something (interventions) I didn't want.

Respectful Care: Autonomy, Support and Communication

We asked women about three forms of respectful care that women should expect to receive from hospital staff while giving birth: (1) whether staff encouraged them to make decisions about how their birth would progress, (2) supported them well and (3) communicated well. Overall, respondents were quite favorable about their care, with 76% to 92% agreeing strongly or agreeing somewhat that they had experienced such care. In the results that follow, we focus on the "disagree" responses as well as the "neither agree nor disagree" responses, as not being able to definitively agree that care had been respectful.

Encouraged Decisions About Childbirth Progress

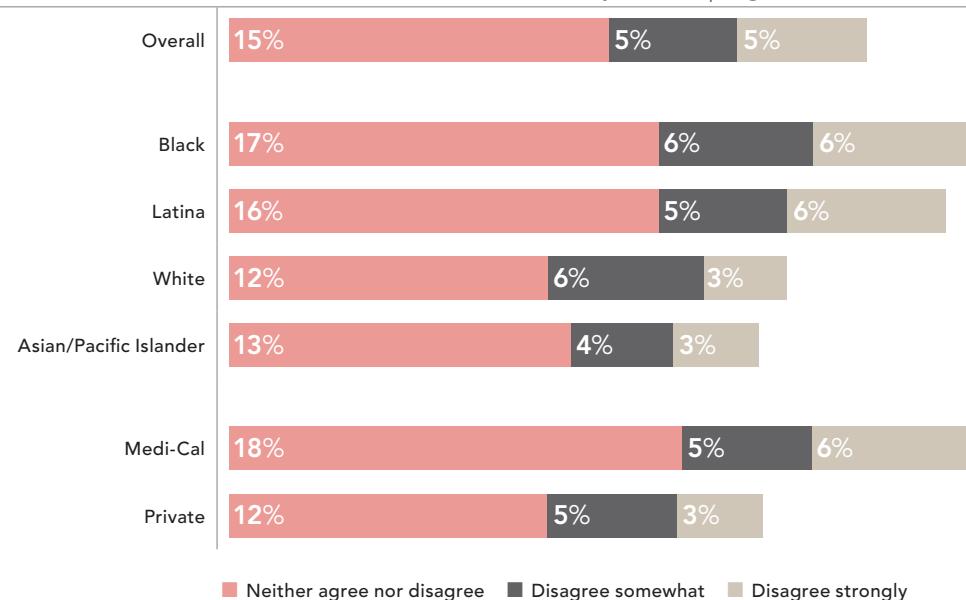
Overall, about 3 in 4 respondents agreed that the delivery room staff encouraged them to make decisions about how they wanted their birth to progress. Shown below are those who could neither agree nor disagree, disagreed somewhat and disagreed strongly. In significance testing, Medi-Cal beneficiaries had less decision-making autonomy than women with private insurance ($p < .01$) (Figure 44).

“

Staff gave all the support I requested, but did not push any unnecessary interventions, tests, etc. They trusted me to direct how my labor would progress and didn't argue when I insisted to be admitted (less dilated than typical). The sense was that they trusted I 'knew what I was doing' as a second-time mom.

Figure 44: Decision Autonomy, by Race/Ethnicity and Payer

How much do you agree with the following statements about your recent experience of labor and birth? The delivery room staff encouraged me to make decisions about how I wanted my birth to progress.



Base: Women who experienced labor (n=2067)

p < .01 for difference by payer

Notes: "Agree strongly" and "Agree somewhat" not shown.

“

I felt like I was able to have my labor progress the way I wanted, without anyone telling me what I should do. I got support when I asked for specific things, and even got help from a nurse on a good position as I was pushing.

”

Felt Well Supported

Overall, about 9 in 10 respondents agreed that they felt well supported by the staff during their labor and birth. Shown here are those who could neither agree nor disagree, disagreed somewhat and disagreed strongly, overall by race/ethnicity and payer subgroups (Figure 45). Despite the visual variation, numbers are small and subgroups showed no significant differences.

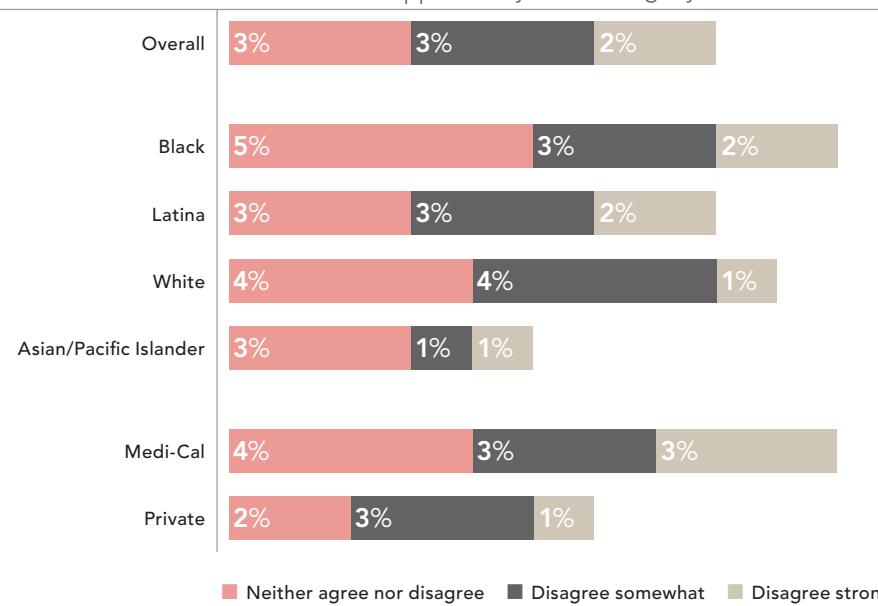
“

The nurse ... was so amazing. ... She motivated me the whole time, wholeheartedly cared for me every step of the way, with passion and love. ... I am so happy and honored she pushed me through it like she was my second mom or something ... because I did it all natural all by myself.

”

Figure 45: Experience of Support, by Race/Ethnicity and Payer

How much do you agree with the following statements about your recent experience of labor and birth? I felt well supported by staff during my labor and birth.



■ Neither agree nor disagree ■ Disagree somewhat ■ Disagree strongly

Base: Women who experienced labor (n=2067)

Notes: "Agree strongly" and "Agree somewhat" not shown.

Experienced Good Communication

Overall, about 9 in 10 respondents either agreed strongly or agreed somewhat that the staff communicated well with them during labor. Shown here are those who could neither agree nor disagree, disagreed somewhat and disagreed strongly, overall and by race/ethnicity and payer subgroups. Medi-Cal beneficiaries rated communication worse than women with private insurance ($p < .01$) (Figure 46).

My nurse during labor was so nice and understanding! She made me feel relaxed and encouraged. I felt like everything was okay. She was positive and coached me through pushing.

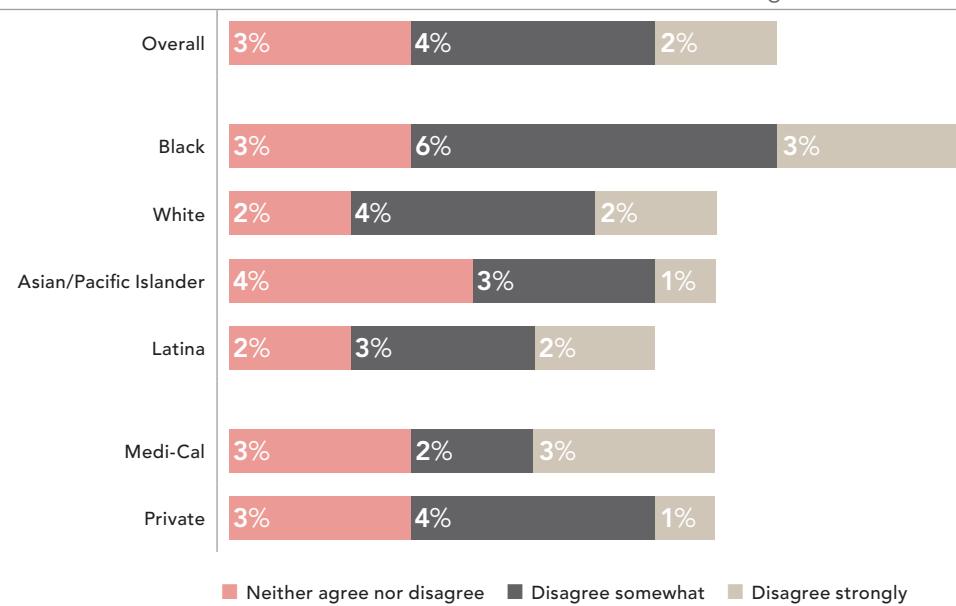
We are a queer family and my partner is transgender, even though we saw staff reading our birth plan that stated I was Mom and [partner name] was Dad, they still referred to my husband as 'she.'

I was glad that I was informed ahead of time what to expect when my baby was born since I was six weeks early. I was told that they would need to make sure that the baby was stable and I could not hold him and that he may need to stay in the NICU. Knowing that gave me time to emotionally and mentally prepare.

Almost nobody spoke Spanish and that stressed me a little. Well I found communication was hard.

Figure 46: Experience of Good Communication, by Race/Ethnicity and Payer

How much do you agree with the following statements about your recent experience of labor and birth? The staff communicated well with me during labor.



Base: Women who experienced labor (n=2067)

p < .01 for difference by payer

Notes: "Agree strongly" and "Agree somewhat" not shown.

“

Nurses and midwife as well as my OB-GYN doctor always provided me with extra information to feel comfortable about every step they had to take or do.

”

“

I had a horrid OB that broke my water and inserted monitor and catheters without telling me. ... I did not get skin-to-skin time and could not breastfeed until hours before I was discharged. It was a horrible birth experience.

”

“

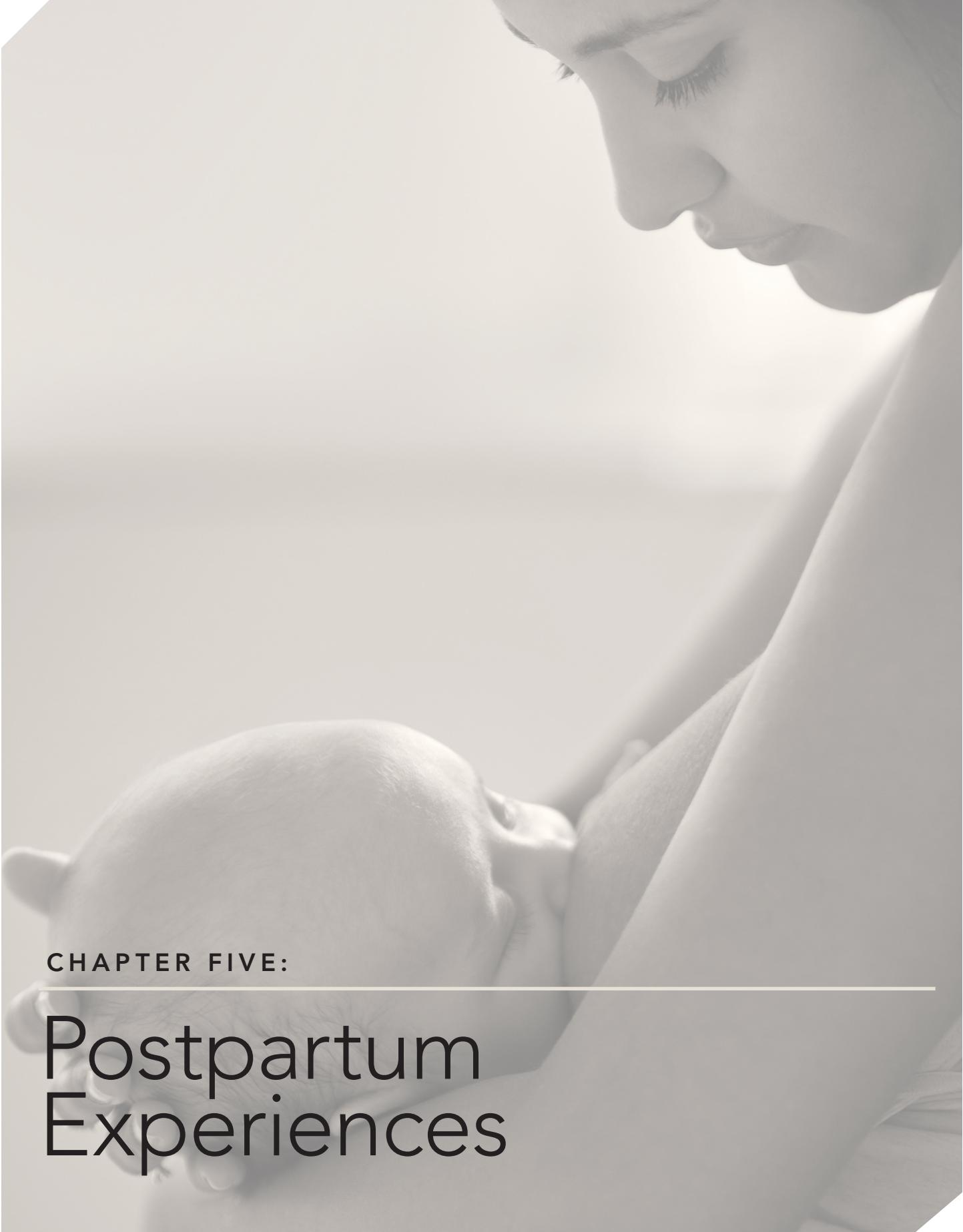
[The best part was] clear communication on expectations, outcomes, and care.

”

“

[The worst part was] miscommunication and not having time for me to discuss my opinions.

”



CHAPTER FIVE:

Postpartum Experiences

Postpartum Experiences

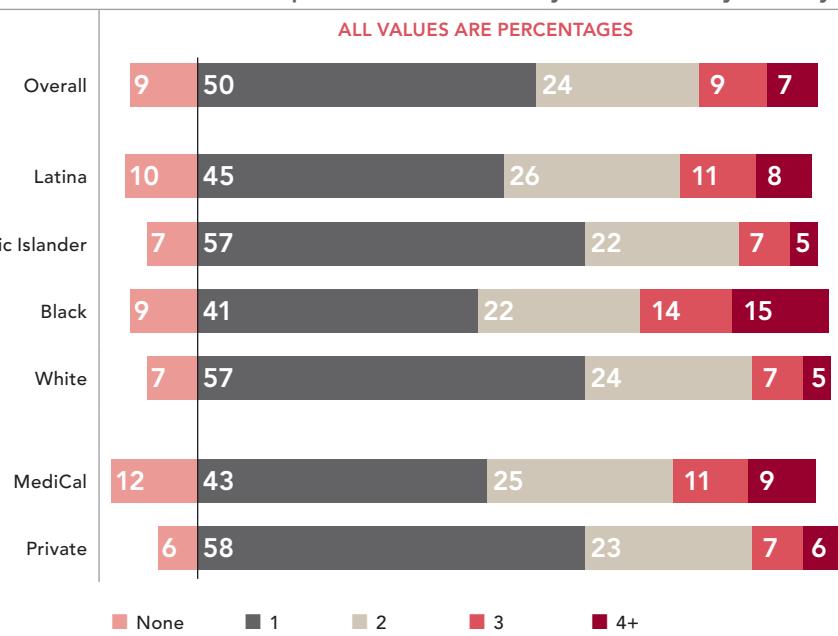
Overall, the crucial postpartum and newborn period receives inadequate attention from the health care system, with respect to public policies such as paid leave and breastfeeding support, and in terms of our understanding of the experiences of women and families at this time. In this chapter, we touch on a variety of issues relative to this period that we were able to include in our survey. Regarding postpartum maternal mental health, please see the following chapter, which is based on validated depression and anxiety screeners and their combined composite (PHQ-4) that survey participants completed with reference to both pregnancy and the postpartum period.

Postpartum Office Visits

Number of Postpartum Office Visits

Most women (91%) reported having at least one postpartum visit in the first 8 weeks after the birth. Half (50%) had one visit in that time, while approximately 1 in 4 (24%) had two visits and another 16% had three or more visits. We found significant differences by race/ethnicity and payer (Figure 47).

Figure 47: Number of Maternal Postpartum Office Visits, by Race/Ethnicity and Payer



Base: All women (n=2444)

p < .01 for difference by race/ethnicity and payer

Having No Postpartum Office Visit

Approximately 9% of the women surveyed reported having had no postpartum visit. We examined this group of women by race/ethnicity and payer and found differences in both cases ($p < .01$) (Figure 47). Not having had a visit was also strongly related to income; women with income below the poverty level (13%) were much more likely to report not having had a visit than women at 300% or higher of the poverty level (4%) ($p < .01$). Women below the poverty level were also more likely to have four or more visits (10%), compared to women with incomes at 300% or higher of the poverty level (5%) ($p < .01$).

I know it's hardest in the beginning with the baby, but it's challenging and definitely not impossible to do. Plus when you see the little one smile, everything just seems so worth it.

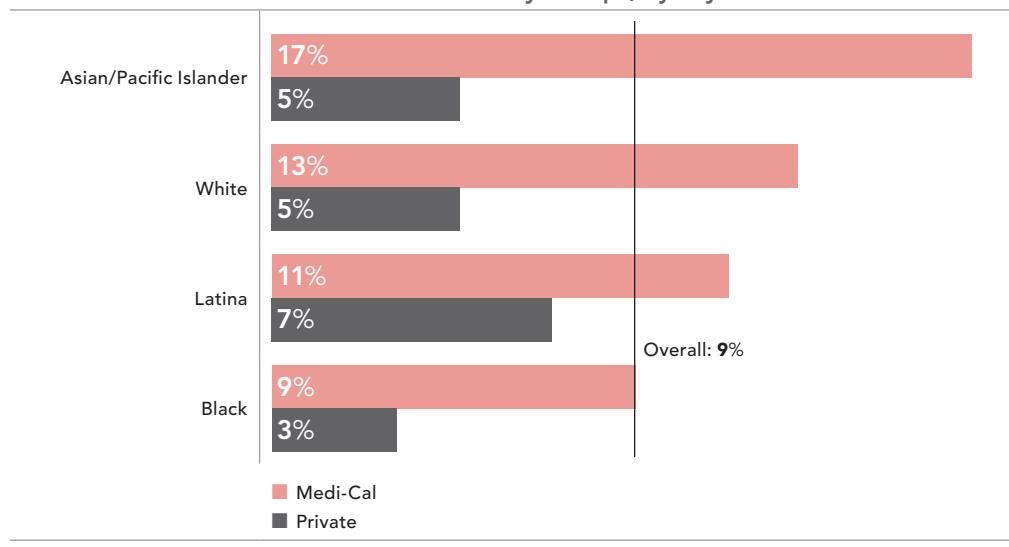
It seems like a lot of time between the delivery and the postpartum visit. I would think the visit to the doctor would be a little sooner. One month and a half is a lot.

There needs to be more follow-up care for women (after giving birth). It should be standard protocol for nurses to go visit you at your home (postpartum). This is standard practice in Europe. There needs to be more follow-up care from the OB-GYN as well. Even some phone calls from the OB-GYN would have been nice to check in on me after going home from the hospital.

I think it's great that they have a mother well check at 6 weeks. ... I think it would be a good idea to encourage another one or even a few during the first year.

Across all four race/ethnicity groups shown in Figure 48, women with Medi-Cal coverage were more likely than women with private insurance to have no postpartum visit ($p < .01$).

Figure 48: Women With No Postpartum Visit Across Race/Ethnicity Groups, by Payer

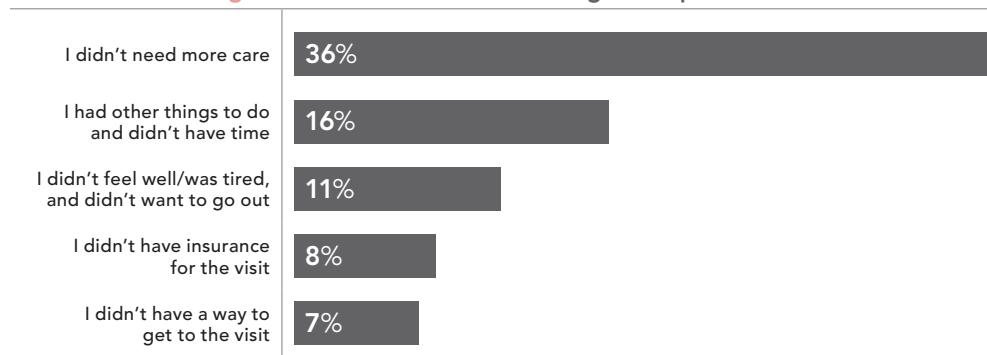


Base: All women (n=2444)

It is a major concern that nearly 1 woman in 10 had no postpartum visit at this important time of physical, emotional and social transition, and growing professional emphasis on the importance of postpartum care. However, this figure is well below widely quoted rates for women with no postpartum visit that are based on claims data. Our results, which align closely with other survey-based results, are likely to be much closer to actual practice, as claims data undercount postpartum visits due to widespread use of billing codes that encompass a broader range of services, and a health care plan performance measure excludes visits in the initial weeks after the birth.

We asked the subset of women without a postpartum visit the reason for not seeing a maternity care provider in the postpartum period; Figure 49 summarizes their responses. Women cited the fact that they felt they didn't need more care (36%), followed by lack of time (16%), not feeling well or feeling tired and didn't want to go (11%), a lack of insurance coverage (8%) and transportation issues (7%).

Figure 49: Reasons for Not Having a Postpartum Visit



Base: Women who did not have any postpartum office visits for themselves (n=201)
Note: "Other" not shown.

“

I didn't know that I had to make a doctor's appointment. When you have just had a baby you never think about making a doctor's appointment.

”

“

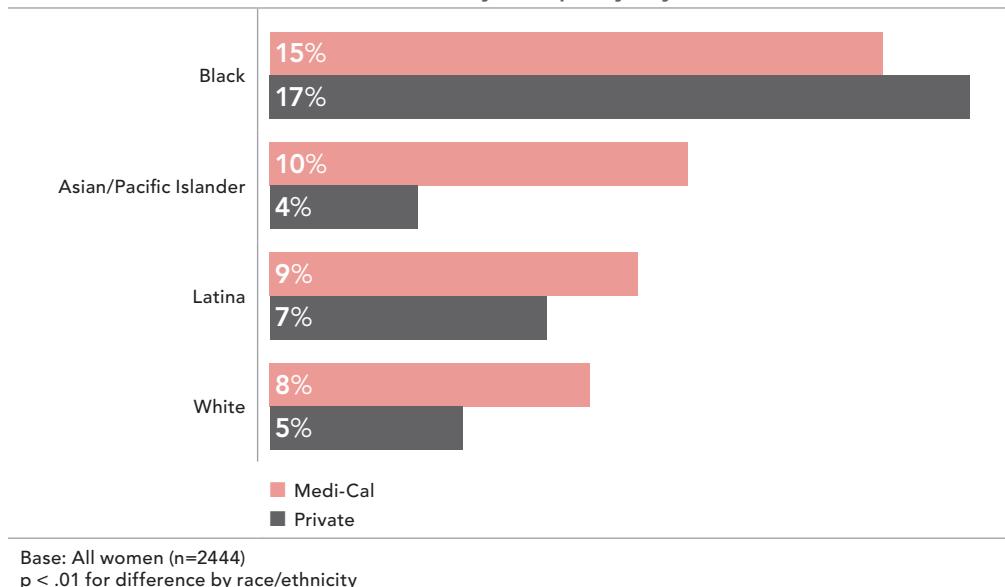
I had to work and they weren't open weekends. I couldn't afford to take time off.

”

Having Many Postpartum Visits

When examined by race/ethnicity, Black women were most likely to have four or more postpartum visits ($p < .01$), whether they were covered by Medi-Cal or had private insurance (Figure 50). This may indicate a higher burden of health challenges at this time.

Figure 50: Women With Four or More Postpartum Visits Across Race/Ethnicity Groups, by Payer



Base: All women (n=2444)

$p < .01$ for difference by race/ethnicity

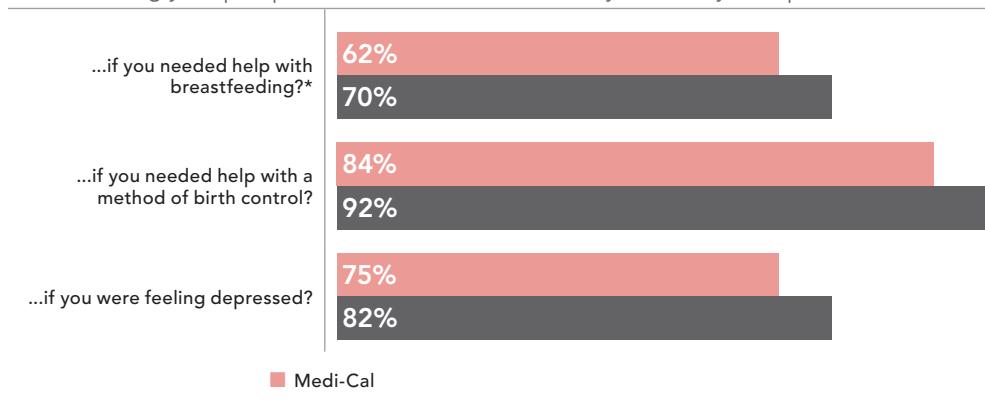
Overall I had a great birthing experience but I was shocked by how little support the OBGYN office and doctors provided about everything beyond the childbirth process itself.

Topics Discussed During Postpartum Office Visits

We asked women if their providers discussed some key topics with them during their postpartum visits: breastfeeding, birth control and feelings of depression. When we examined the likelihood of discussing these issues by demographic characteristics, there were not notable differences by race/ethnicity or income (not shown), but overall women with Medi-Cal were consistently about 8 percentage points less likely than those with private insurance to report having had such a discussion with their provider ($p < .01$) (Figure 51).

Figure 51: Coverage of Postpartum Topics

During your postpartum office visit/visits did any maternity care provider ask...



* Only asked of women who were breastfeeding at 1 week.

Base for breastfeeding: Women who had a postpartum visit and were breastfeeding at one week (n=2021)

Base for birth control: Women who had a postpartum visit (n=2210)

Base for feeling depressed: Women who had a postpartum visit (n=2206)

$p < .01$ for difference by payer

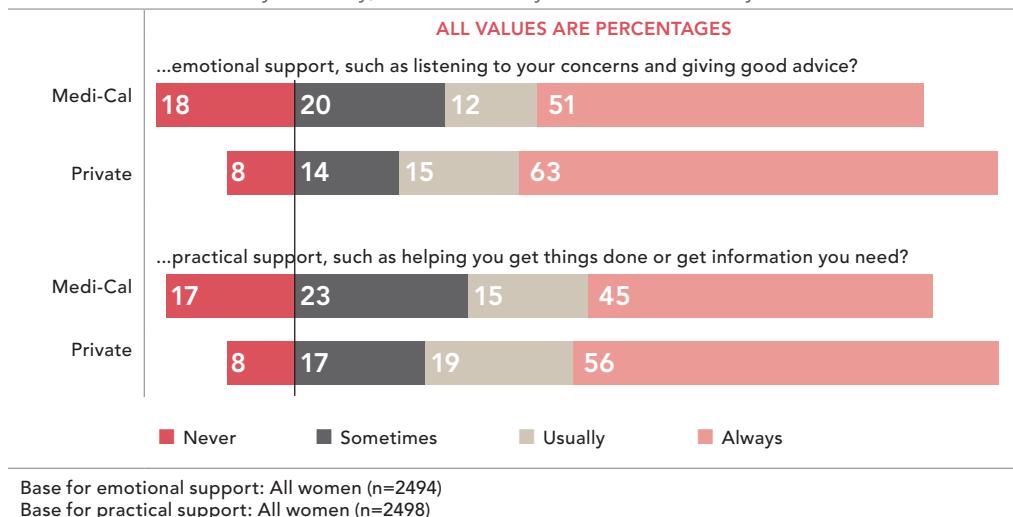
[The worst thing about my care was their] not providing the birth control I wanted due to religious purposes.

Access to Emotional and Practical Support

We asked about access to two types of support "since the birth of your baby": (1) emotional support such as listening to concerns and giving good advice, and (2) practical support such as help getting things done or finding information. A majority of mothers (56%) reported they always felt like they had emotional support, with another 14% saying they usually did. Almost half of mothers (49%) said they always had practical support. Mothers who reported they "always" got emotional support were more likely to report they had private insurance (63%), were White (64%) or Black (62%), had incomes at 300% or more of the poverty level (65%) and were married (59%) (all $p < .01$). Always having practical support varied less and was generally most common among the same groups, specifically those with private insurance (56%), who were White (55%) and had incomes at or above 400% above the poverty level (56%) (all $p < .01$). As shown in Figure 52, Medi-Cal beneficiaries overall were less likely to have access to both emotional and practical support than women with private insurance, and more than twice as likely as women with private insurance to say that they never have someone to turn to for both types of support ($p < .01$).

Figure 52: Postpartum Emotional and Practical Support, by Payer

Since the birth of your baby, how often do you have someone you can turn to for...



Returning to or Starting New Paid Work

Women participated in the survey from 2 to 11 months after giving birth. By the time they took the survey, 43% of respondents had returned to or begun new paid work, either full time (29%) or part time (15%). An additional 22% reported they would be back at a paid job or starting a new paid job in the next few months, while slightly more than one-third (35%) planned to stay home with their baby. We found a clear relationship between currently working a paid job and family size. Women who had recently had a fourth birth were notably less likely to be doing paid work (Figure 53), with 53% saying they planned to stay home, compared with 29% of women with one child ($p < .01$). Women who had just had a third child were intermediate in terms of current employment.

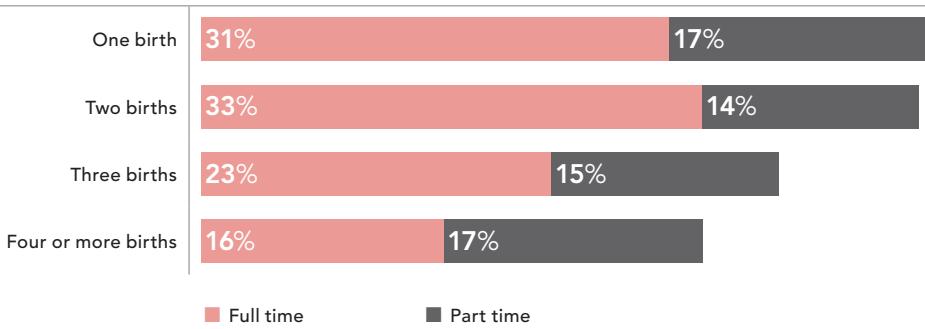
I felt like care was good during my pregnancy and during birthing but support to new mothers is very limited. It makes it very difficult to be a good mom. It's a stressful and lonely time if you do not have money or family close.

I would say, just at the beginning when I had him, the first three months, I was kind of overwhelmed. I would really have liked it if my doctor had ... given me a few numbers to someone to talk to to give advice.

The lack of help after giving birth was stressful. Prenatal care was good, frequent, consistent. Afterwards, besides appointments for vaccines, you are all alone and on your own.

Mothers need more time off from work to take care of children. It is recommended to [breast] feed your child for a year; but our government does not support and there is no job or income security for women and fathers to take care of their own child.

Figure 53: Currently Have Paid Job, by Parity



Base: All women (n=2475)

p < .01 for difference by parity

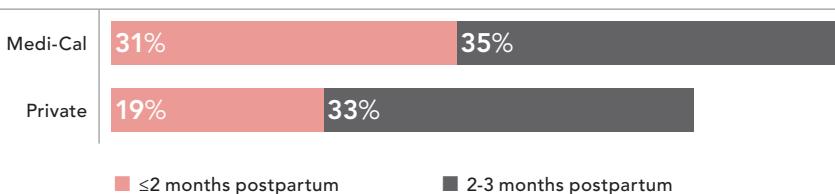
Working a paid job was also strongly related to income level, with only 30% of women below the poverty level working for pay compared with 65% of those women at 400% of the poverty level ($p < .01$). This likely reflects the strong inverse relationship between family size and income, with 21% of women living below the poverty level having four or more children, compared with 1% of women at 400% of the poverty level.

Length of Time Home With the Baby

We also examined how long women were able to stay home with their babies and tend to their own health needs before returning to or starting paid work. One-fourth (24%) of women who were doing paid work at the time of the survey began such work within 2 months of their birth, another third (34%) by 3 months, and another quarter (24%) by 4 months. Thus, within 4 months of the birth, 82% of women with a paid job at the time of the survey had resumed or started employment. These represent a third (34%) of all mothers, whether they returned to work or not.

Women with Medi-Cal coverage returned to or started paid jobs more quickly than those with private insurance ($p < .01$) (Figure 54). Likewise, when we examined the relationship between income level and time at home before starting paid work, we found that women reporting incomes below the poverty level were employed more quickly (63% within 3 months) than women with incomes at 400% or above the poverty level (46% within 3 months). While women below the poverty level were less likely to take on paid work, those who did took on paid work more quickly than women with higher incomes.

Figure 54: Currently Have Paid Job, by Payer and by When Returned To or Started Job



Base: All women (n=2475)

p < .01 for difference by payer

Cost of delivery even with the insurance is soooo expensive. I wanted to spend more time with the baby, but had to go back to work to make money.

I wish I can spend more time with my kids at home with pay while on maternity leave. I feel like the baby was too young to be left with a day care. The first year is essential and we should be allowed to stay home or have the option to work from home.

Women need longer maternity leave. Going back to work with a new baby is extremely hard.

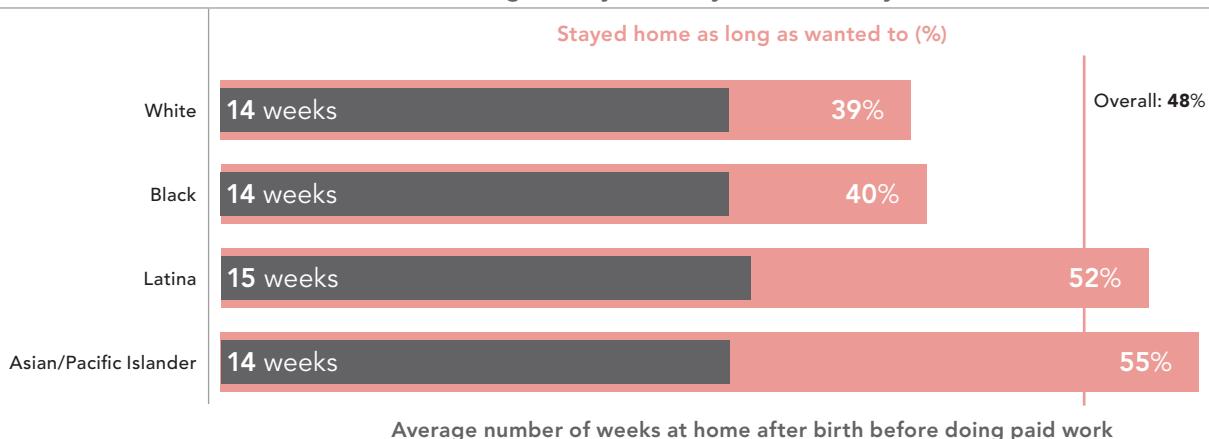
Twelve weeks is not enough time for a mother to care for her new baby and herself before returning to work. More needs to be done for mothers who feel alone.

New moms really need at least 4 months with baby at home. Six weeks is not nearly enough!

Whether Women Stayed Home as Long as They Wanted

Among women who were working a paid job, fewer than half (48%) reported that they were able to stay home as long as they wanted. Women who reported they stayed home as long as they wanted remained home on average 1 week longer (14.7 weeks) than those who said that they did not (13.8 weeks). While there was little difference in how long women from different racial/ethnic groups stayed home (Figure 55), there was a marked difference in the perception of whether they stayed home as long as they wanted, with Asian and Pacific Islander and Latina women much more likely to respond more positively than Black and White women ($p < .01$).

Figure 55: Length of Time at Home After Birth and Whether Women Stayed Home as Long as They Liked, by Race/Ethnicity



Base: Women who returned to or started a new paid job, part-time or full-time, by time of survey (n=1074)
 $p < .01$ for difference in whether stayed home as long as wanted by race/ethnicity

Women's Experience With Breast Milk Feeding

Infant Feeding Intention and Feeding Practice 1 Week Postpartum

As they approached the end of their pregnancy, about two-thirds of women (67%) intended to exclusively breastfeed their babies, 28% planned to mix breast milk and formula feeding, and 5% planned to use formula alone. Compared with intention, there was a drop-off in the actual proportion exclusively breastfeeding 1 week after the birth, with corresponding increases in mixed and exclusive formula feeding.

Table 7 breaks down changes between intended feeding as women neared the end of their pregnancies and actual feeding at 1 week. About one-fourth of women who intended to exclusively breastfeed were either only feeding their baby formula (3%) or using both breast and formula feeding (21%). About 1 in 11 women who intended to formula feed was exclusively breastfeeding at 1 week. Approximately 39% of those who intended to both breast and formula feed were exclusively breastfeeding at 1 week.

“

I live in [city name], California, a great community for pregnancy resources and breastfeeding support.

”

“

I would have loved to have more postpartum care and breastfeeding help.

”

Table 7. Actual Feeding at 1 Week, by Feeding Intention in Late Pregnancy

Late Pregnancy Intention	Feeding at 1 Week		
	Feeding breast milk only	Feeding both breast milk and formula	Feeding formula only
Intended to feed breast milk only	76%	21%	3%
Intended to feed both breast milk and formula	39%	52%	10%
Intended to feed formula only	9%	12%	80%

Base: All women (n=2525)

Hospital Staff Support for Breastfeeding

Women reported that the hospital staff was generally strongly supportive (84%) or somewhat supportive (12%) of breastfeeding. Table 8 shows the relationship between staff support and fulfillment of feeding intention (i.e., intention in late pregnancy to breastfeed and whether breastfed at 1 week). In cases where women reported the staff was supportive, 97% of women who intended to breastfeed were either exclusively breastfeeding (76%) or mixed feeding (21%) at 1 week. In the relatively small number of cases where mothers who intended to exclusively breastfeed reported staff *discouraged* breastfeeding, only 35% of women who intended to exclusively breastfeed were doing so at 1 week, and 27% were exclusively using formula.

Table 8. Staff Support and Fulfillment of Intention to Exclusively Breastfeed

Late Pregnancy Intention	Staff Support of Breastfeeding		
	Strongly or somewhat supported	Neither supported nor discouraged	Strongly or somewhat discouraged
Intended to feed breast milk only	76%	71%	35%
Intended to feed both breast milk and formula	21%	23%	37%
Intended to feed formula only	3%	6%	27%

Base: All women (n=2522)

We asked if women had felt pressure from a health professional to breastfeed, and 27% of women reported that they did. However, we caution that there may have been some misunderstanding of the intent of the question. When we examined responses relative to how much nurses and hospital staff supported breastfeeding, 28% of women who felt staff supported breastfeeding also felt they were pressured, and 33% of the women who felt the staff discouraged breastfeeding also reported experiencing pressure (though the latter involved small numbers since hospital staff was overwhelmingly supportive of breastfeeding). Women who said staff *neither supported nor discouraged* breastfeeding were least likely to report feeling pressured (16%).

The best thing [about our hospital care] was the constant encouragement and motivation by the nurses in the NICU. ... I loved that even though our baby was so small they very rapidly encouraged us to try breastfeeding.

I had a particularly difficult time getting started with breastfeeding and the hospital staff and services were very supportive and encouraging in assisting me.

The nurses didn't help me with breastfeeding at all. They said if baby was hungry he would eat. Well that was not the case and my son lost 10% of his weight before leaving the hospital.

Lactation specialists were great and had a lot of experience. They kept calling to make sure breastfeeding was going ok.

[The worst part of the hospital experience was] pressure to breastfeed! Nurses make you feel like you are doing something terrible if you choose to give your baby formula. We can choose how to feed our own child.

[The worst part of the hospital experience was] being pressured to formula feed before my milk came in.

There is immense pressure about breastfeeding and not enough support for new moms to handle low milk supply and not feeling guilty about supplementing with formula when needed.

Thus, some respondents may have interpreted the question to mean pressure either to breastfeed or not to breastfeed rather than an exclusive focus on encouraging it. We also received an open-ended comment that "pressure from care providers can be positive or negative." It is also possible that some respondents did not read carefully and reported whether they had felt pressure from any source to breastfeed, a common topic of discussion groups, blogs and other forums for childbearing women.

We also note major differences in responses to this question by language spoken in the home. Just 13% of women who spoke Spanish at home reported they had experienced pressure to breastfeed versus 32% English, 32% Asian languages, 25% English and Spanish equally and 24% other ($p < .01$).

Table 8, above, suggests that few women may have received inappropriate pressure from hospital staff, as just 3% of women who planned as they came to the end of their pregnancy to exclusively formula feed reported that the staff strongly or somewhat supported breastfeeding, in contrast to reports of 76% of women who planned to exclusively breastfeed and 21% who planned mixed feeding.

Exclusive Breast Milk Feeding at 1 Week, by Subgroups

Overall, 62% of women reported exclusively breastfeeding their babies 1 week after birth. Figure 56 shows some variation in exclusive breastfeeding at 1 week, by race/ethnicity and payer. White women were distinctly more likely (74%) to be exclusively breastfeeding than any other racial/ethnic group ($p < .01$). Women with private insurance (67%) reported higher rates than women covered by Medi-Cal (59%) ($p < .01$).

Figure 56: Exclusive Breast Milk Feeding at 1 Week, by Race/Ethnicity and Payer



Base: All women (n=2525)

$p < .01$ for difference by race/ethnicity and payer

Figure 57 shows further variation in exclusive breastfeeding at 1 week, by type of birth attendant and mode of birth. Women who had a midwife as birth attendant (75%) were more likely to be exclusively breastfeeding than women who had an obstetrician as birth attendant (61%) ($p < .01$). Exclusive breastfeeding at 1 week also varied by mode of birth, ranging from women who had a vaginal birth after cesarean (VBAC) (77%), followed by vaginal birth (not VBAC), repeat cesarean and women who had a primary cesarean (54%) ($p < .01$).

“

When my baby and I arrived into our room [the nurses] asked if they could give her formula?? Luckily I had breastfed before and knew how to get started from all the wonderful resources from the other hospital for my first birth, so I refused.

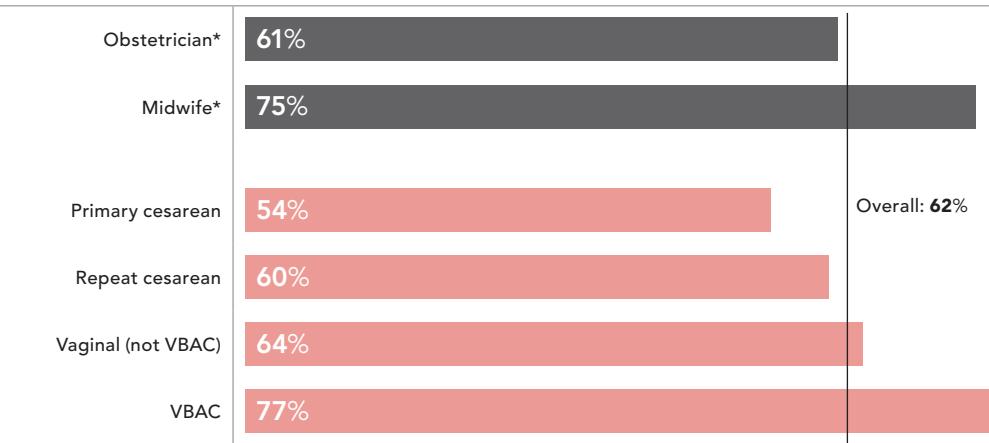
”

“

A doctor in the NICU ordered the nurse to feed my baby formula without my consent and it messed up my plans for exclusive breastfeeding.

”

Figure 57: Exclusive Breast Milk Feeding at 1 Week, by Provider and Mode of Birth



*Birth provider

Base: All women (n=2525)

p < .01 for difference by provider and mode of birth

“

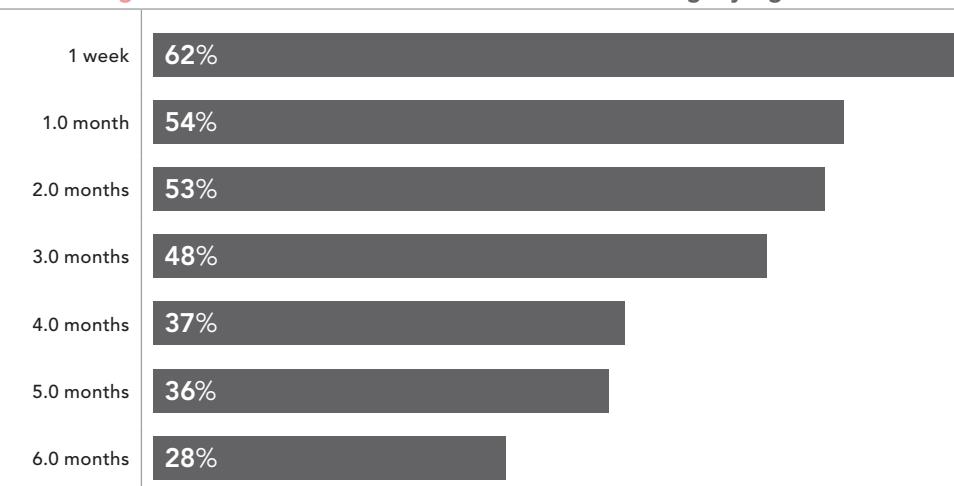
I exclusively breastfed my first four babies and the only reason this baby is doing some formula is because of my heart condition. (He can't nurse for a few hours after I take my medicine.)

”

Exclusive Breast Milk Feeding to at Least 6 Months

Leading health professional organizations recommend exclusive breast milk feeding to at least 6 months.* Figure 58 illustrates patterns of exclusive breast milk feeding over the first 6 months after birth among respondents who participated in the survey 6 or more months after giving birth. In this group, 62% were exclusively feeding breast milk at 1 week, declining to 54% at 1 month. Fewer than 3 in 10 (28%) who had given birth at least 6 months before completing the survey met the consensus professional recommendation for exclusive breast milk feeding to about 6 months. However, there was broad variation in meeting this standard by race/ethnicity and by payer. The former spread ranged from 21% among Black women to 37% among White women ($p < .01$). About 1 woman in 4 (24%) covered by Medi-Cal met this standard, in comparison with slightly more than 1 in 3 (34%) with private insurance ($p < .01$) (Figure 59).

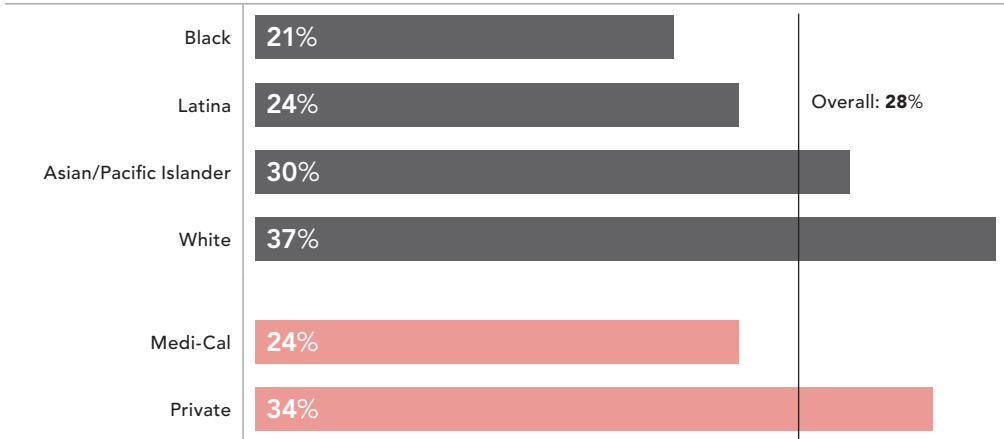
Figure 58: Duration of Exclusive Breast Milk Feeding, by Age of Infant



Base: Women who responded 6 or more months after giving birth (n=713)

*Chantry, C.J., Eglash, A., & Labbok, M. (2015). ABM position on breastfeeding – revised 2015. *Breastfeeding Medicine*, 10(9), 407-411. Retrieved 1 May 2018, from <http://www.bfmed.org/assets/DOCUMENTS/abm-position-breastfeeding.pdf>

Figure 59: Exclusive Breast Milk Feeding for 6 Months, by Race/Ethnicity and Payer



Base: Women who responded six or months after giving birth (n=713)
p < .01 for difference by race/ethnicity and payer

Patterns of Infant Feeding Over Time

Table 9 describes patterns of infant feeding over the first 8 months, showing a general trend of decline in feeding any breast milk, and increasing feeding of any formula and any solid food. We chose not to report feeding patterns at 9 or more months, as respondents during the final months of our survey were fewer in number and may not be representative of our overall target population. (As the survey tracked different cohorts who participated at varying time periods since giving birth versus one group over the full period, the table includes some increases in measured rates of any breast milk feeding and a decrease in measured rate of any solid food.)

Table 9. Infant Feeding Patterns Over the First 8 Months

	Months of Age						
	2	3	4	5	6	7	8
Any breast milk	78%	61%	66%	59%	58%	54%	46%
Any formula	51%	64%	58%	64%	67%	70%	73%
Any solid food	3%	3%	22%	51%	83%	92%	93%

Base: All women (n=2516)

Satisfaction With Duration of Breastfeeding

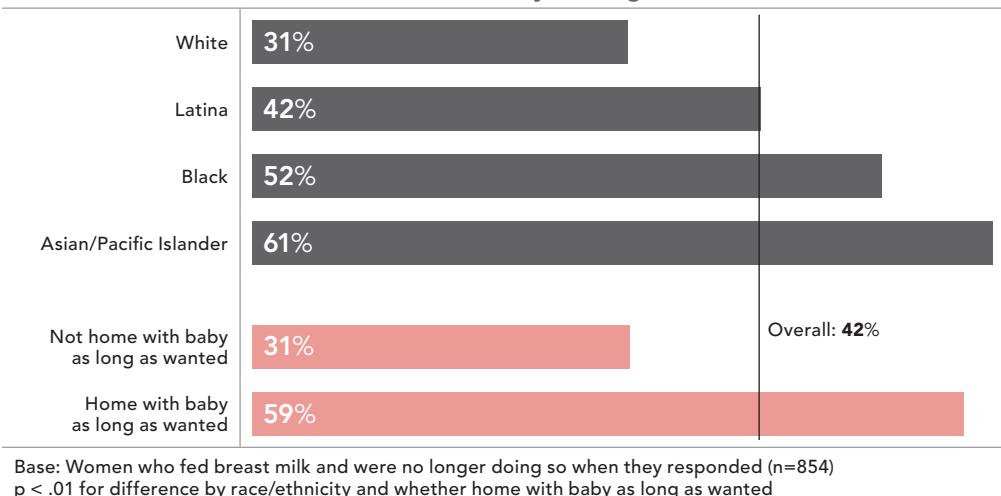
We asked women who had partially or exclusively fed breast milk at 1 week and were not doing so at the time of the survey whether they had breastfed as long as they wanted. Overall, 42% in this group were satisfied with the duration of breastfeeding. Figure 60 presents their responses, broken down by both race/ethnicity and whether they had been able to stay home with their baby as long as they wanted. There was a large spread across racial/ethnic groups, with White women least likely (31%) and Asian and Pacific Islander women most likely (61%) to say they had breastfed as long as they wanted ($p < .01$). Those who said that they had been able to stay home with their baby as long as they wanted were almost twice as likely (59%) to say they had breastfed as long as they wanted compared with those who had not been able to stay home as long as they liked (31%) ($p < .01$).

“

My biggest regret is not breastfeeding longer. I would recommend it to all mothers and I wish, as a first time mother, I would've gotten more help.

”

Figure 60: Fed Breast Milk as Long as Wanted, by Race/Ethnicity and Whether Home With Baby as Long as Wanted



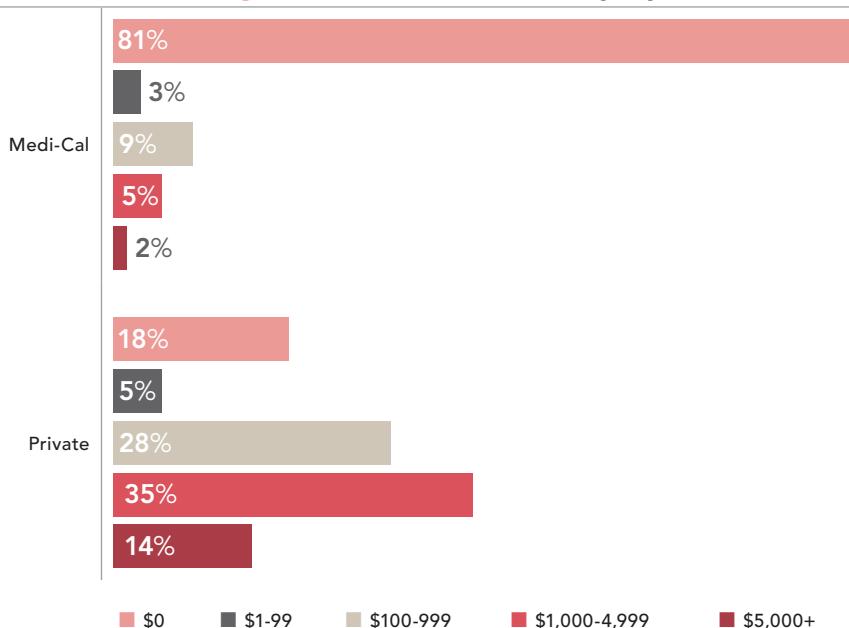
Base: Women who fed breast milk and were no longer doing so when they responded (n=854)
p < .01 for difference by race/ethnicity and whether home with baby as long as wanted

We also looked at whether women with any breastfeeding at 1 week had been able to breastfeed as long as they wanted, by mode of birth and parity. Women with a primary cesarean appeared less likely to have breastfed as long as they liked (34%), in comparison with other mode of birth groups (44% each), though the differences were not statistically significant. Satisfaction with duration of breastfeeding increased with the number of births: first (36%), second (42%), third (49%) and fourth (52%).

Out-of-Pocket Costs of Maternity Care

Figure 61 shows out-of-pocket costs for maternity care provider and hospital fees, by payer. Four in five women with Medi-Cal coverage reported paying nothing. More than 1 in 3 women with private insurance paid from \$1,000 up to \$5,000 in out-of-pocket costs, and 1 in 7 paid more than \$5,000 (p < .01). The average out-of-pocket cost for women with Medi-Cal was \$383, versus \$2,305 for women with private insurance (p < .01).

Figure 61: Out-of-Pocket Costs, by Payer



Base: All women (n=2103)
p < .01 for difference by payer

“

I am dreading my bill. The hospital has charged my insurance company \$80,000. :(

”

“

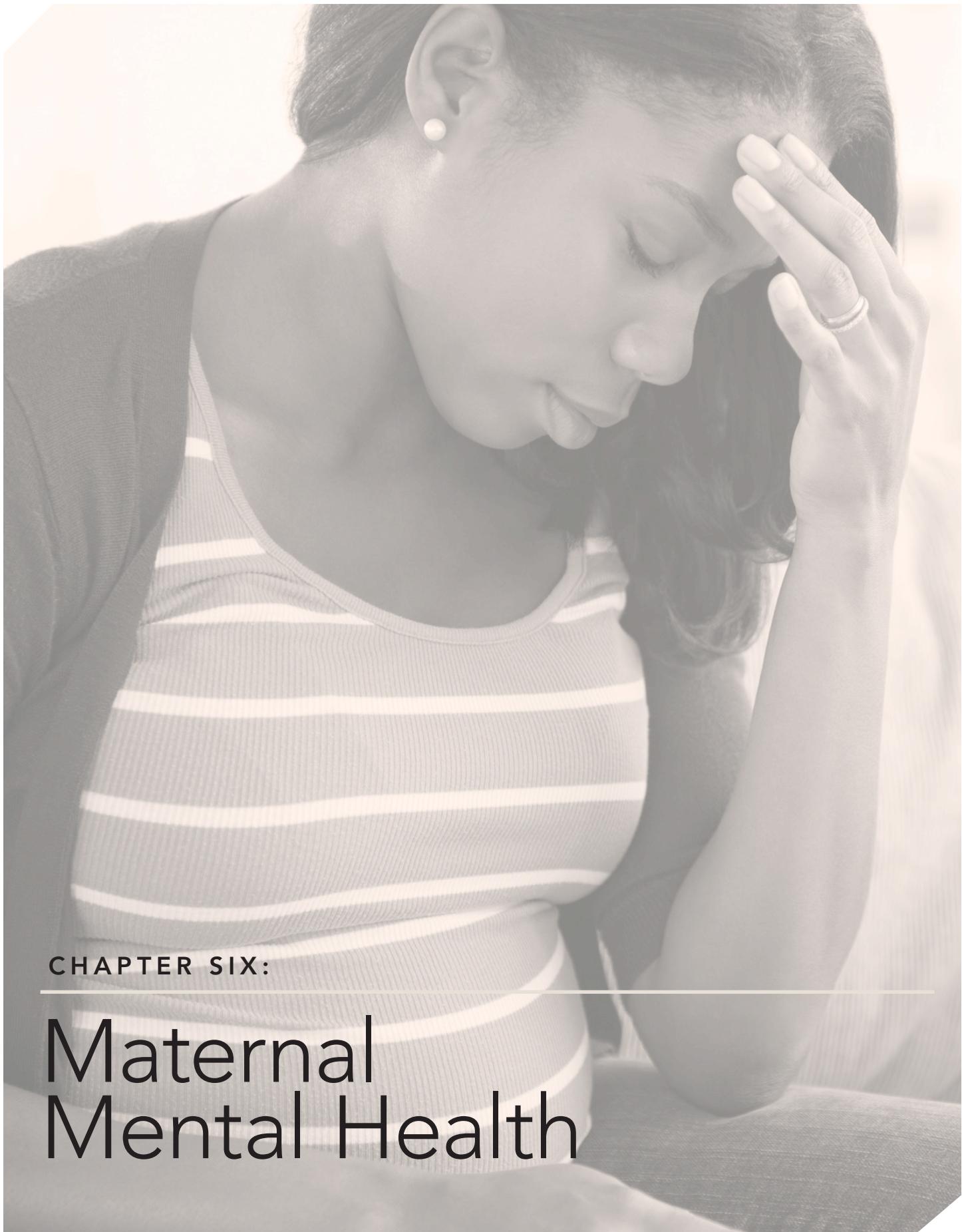
We are struggling financially after a tough year last year. It feels impossible to catch up. And we are still figuring out how to pay our hospital bill, despite having had insurance. We got it reduced by half, but can barely pull together payments of \$50/month that the admin office set up with us. It makes me wonder if we can afford to have another child.

”

“

The woman who came in to collect the \$2,500 payment before we left with my son gave me a panic attack. I had no idea I would have a bill that high with insurance or that they would come into the hospital room of a woman who had just given birth to demand payment before she leaves. She literally asked if I would be paying by cash, check, or credit and just stood there waiting for my answer.

”



CHAPTER SIX:

Maternal Mental Health

Maternal Mental Health

Depression and anxiety are common mental health conditions with potential for considerable impairment not only in the general population, but also in pregnant and postpartum women and other subpopulations. We examined the extent to which survey participants experienced symptoms for these two conditions, during pregnancy and in the postpartum period, and whether they obtained counseling or treatment for mental or emotional health.

PHQ-4 Background*

PHQ-4 Development, and Use Within Survey

We included the Patient Health Questionnaire for Depression and Anxiety (PHQ-4) in our survey questionnaire. This consists of two subscales, each with two questions to assess depression and anxiety, respectively. These “ultra-brief” screeners have been separately validated as a two-question Patient Health Questionnaire (PHQ-2) screener and a two-question General Anxiety Disorder (GAD-2) screener, and validated in combination as PHQ-4. The PHQ-2, the GAD-2 and the more recent PHQ-4 are respected tools that are widely used in clinical practice. In clinical settings, a positive screen for depression or anxiety is generally followed by either referral for direct clinical assessment by a qualified mental health professional or use of a more extensive screening tool. While not diagnostic of depression and anxiety, they have been shown to be closely related to formal diagnoses and to be highly correlated with other well-established functional status instruments. Depression and anxiety can independently affect functionality and can occur together. The composite PHQ-4 is considered to be a marker of psychological distress. It has been studied in the general population and in many distinctive populations, but we are not aware of previous studies of PHQ-4 in childbearing women.

PHQ-4 identifies symptoms of anxiety and depression in the 2 weeks before administration of the instrument. We contacted our study participants in the postpartum period and asked the four questions in two contexts: “during your recent pregnancy” and “in the past 2 weeks” with reference to the time of completing the survey. We positioned the pregnancy questions earlier in the questionnaire with other questions about pregnancy, and questions about “the past 2 weeks” later among questions about postpartum views and experiences. Survey participants completed questionnaires when their index babies were from 2 to 11 months old.

PHQ-4 Content and Scoring

Table 10 reproduces the PHQ-4 questions. Response choices were “never,” “sometimes,” “usually” and “always.” These responses are scored 0 to 3, with possible score for each subscale of 0 to 6. Scores of 3 and higher are considered a positive screen and an indication of the presence of symptoms for each subscale.

When used as a composite with potential scores ranging from 0 to 12, developers recommend the following gradations of potential severity of psychological distress: 0 to 2 – normal, 3 to 5 – mild, 6 to 8 – moderate and 9 to 12 – severe. In a primary care population, increasing levels of severity were associated with substantial declines in functioning on all six subscales of the Short Form General Health Survey (SF-20): mental health, social functioning, general health perception, role functioning, bodily pain and physical functioning.

*Kroenke, K., Spitzer, R.L., Williams, J.B.W., & Löwe, B. (2009). An Ultra-Brief Screening Scale for Anxiety and Depression: The PHQ-4. *Psychosomatics*, 50(6), 613–621. Retrieved 2 April 2018, from [http://www.psychosomaticsjournal.com/article/S0033-3182\(09\)70864-3/fulltext](http://www.psychosomaticsjournal.com/article/S0033-3182(09)70864-3/fulltext)

“

In the future I would like to have more information about how to help prevent postpartum depression.

”

“

There was no discussion of the possibility of postpartum depression following birth and how to deal with it.

”

Table 10. PHQ-4 Psychological Distress Composite and Anxiety and Distress Subscales

PHQ-4 Marker for psychological distress	GAD-2 Screener for anxiety	"During [time period], how often were you bothered by feeling nervous, anxious or on edge?"
	PHQ-2 Screener for depression	"During [time period], how often were you bothered by not being able to stop or control worrying?"
	PHQ-2 Screener for depression	"During [time period], how often were you bothered by feeling down, depressed or hopeless?"

Positive Screens for Anxiety and Depression

Prenatal and Postpartum Scores on GAD-2 and PHQ-2

When asked to recall their feelings during pregnancy, 21% of survey participants met the screening criteria for anxiety, and 11% met screening criteria for depression. Rates of positive screens for both conditions were lower when postpartum women were asked to respond to the four questions with respect to the 2 weeks prior to the survey: 9% for anxiety and 7% for depression (Table 11).

Table 11. Proportion of Women Who Screened Positive for Anxiety and for Depression, Recalling During Pregnancy and in the Most Recent 2 Postpartum Weeks

	Positive screen for anxiety*	Positive screen for depression*
During pregnancy (recall)	21%	11%
During the last 2 weeks (postpartum)	9%	7%

* Scored 3+ on a scale of 0 to 6 on GAD-2 for anxiety and on PHQ-2 for depression.
Base: All women (n=2519)

While we cannot definitively explain the decline in positive screens and symptoms between pregnancy and in the two postpartum weeks before responding to the survey for both conditions, plausible reasons for future investigation include one or more of the following:

- Measurement: different impact on responses to "over the last 2 weeks" and "during your recent pregnancy" when asked in the same survey, including the possibility that responses to questions about pregnancy are filtered through a respondent's present situation.
- Natural history: true decline over time, with postpartum survey completion occurring up to 11 months after birth, including the possibility that any anxiety about the birth process and whether the baby would be born healthy would primarily occur in the prenatal period.
- Intervention: effect of counseling or treatment, which respondents experienced at higher rates in the postpartum period than during pregnancy at all elevated levels of distress.
- Intervention: effect of postpartum use of medications for anxiety and/or depression that women may not have felt comfortable taking during pregnancy.
- Possible protective effect of breastfeeding against maternal mood disorders.*

*Figueiredo, B., Dias, C.C., Brandão, S., Canário, C., & Nunes-Costa, R. (2013). Breastfeeding and postpartum depression: state of the art review. *Jornal de Pediatria*, 89(4), 332-338. Retrieved 31 May 2018, from <https://www.sciencedirect.com/science/article/pii/S0021755713000892?via%3Dihub>; Kendall-Tackett, K. (2015). A new paradigm for depression in new mothers: the central role of inflammation and how breastfeeding and anti-inflammatory treatments protect maternal mental health. *International Breastfeeding Journal*, 2(6). Retrieved 31 May 2018 from <https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/1746-4358-2-6>

There is lots of emphasis on being pregnant after the age of 37. At times, the concern adds unnecessary stress on the mother. ... The radiologist added undue worry. I have friends around the same age who have experienced tremendous stress brought about by overly concerned practitioners.

“

“

After giving birth, I was full of anxiety. They should have someone to comfort women feeling that way.

“

“

It would be important to bring more awareness to postpartum depression and increase screening and monitoring.

“

“

More attention needs to be paid to 'postpartum depression' and anxiety disorders after birth.

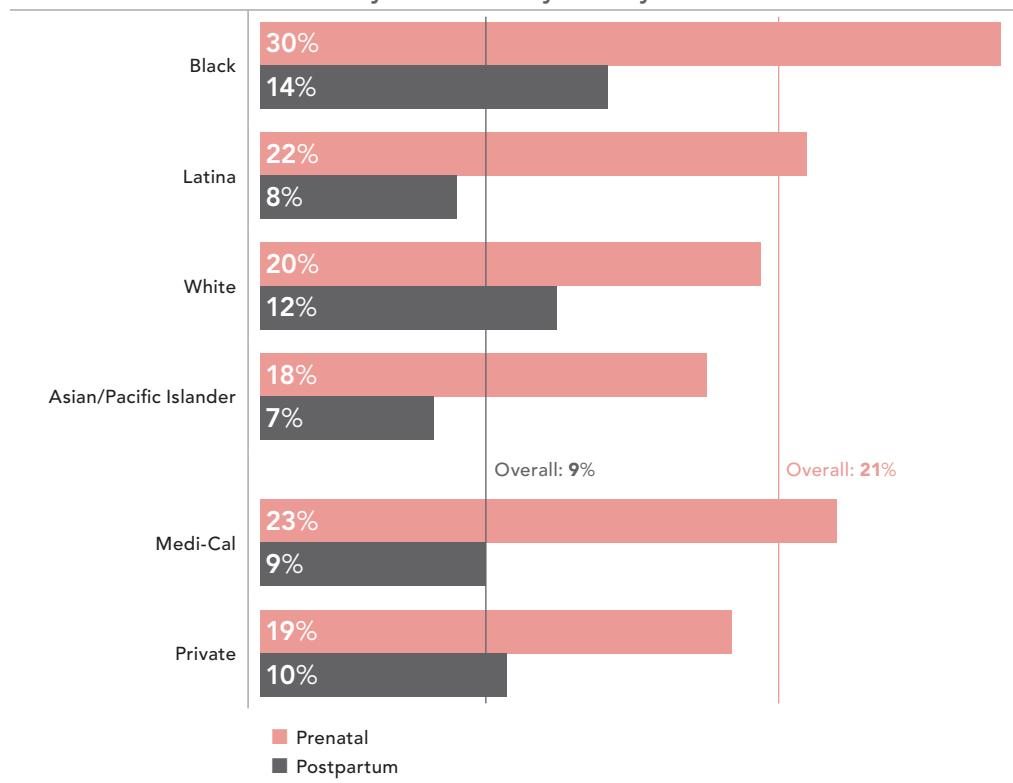
“

Subgroup Variation in Positive Screens for Anxiety and Depression

Figures 62 and 63 show subgroup differences in the proportion of women screening positive for the two conditions and two time periods.

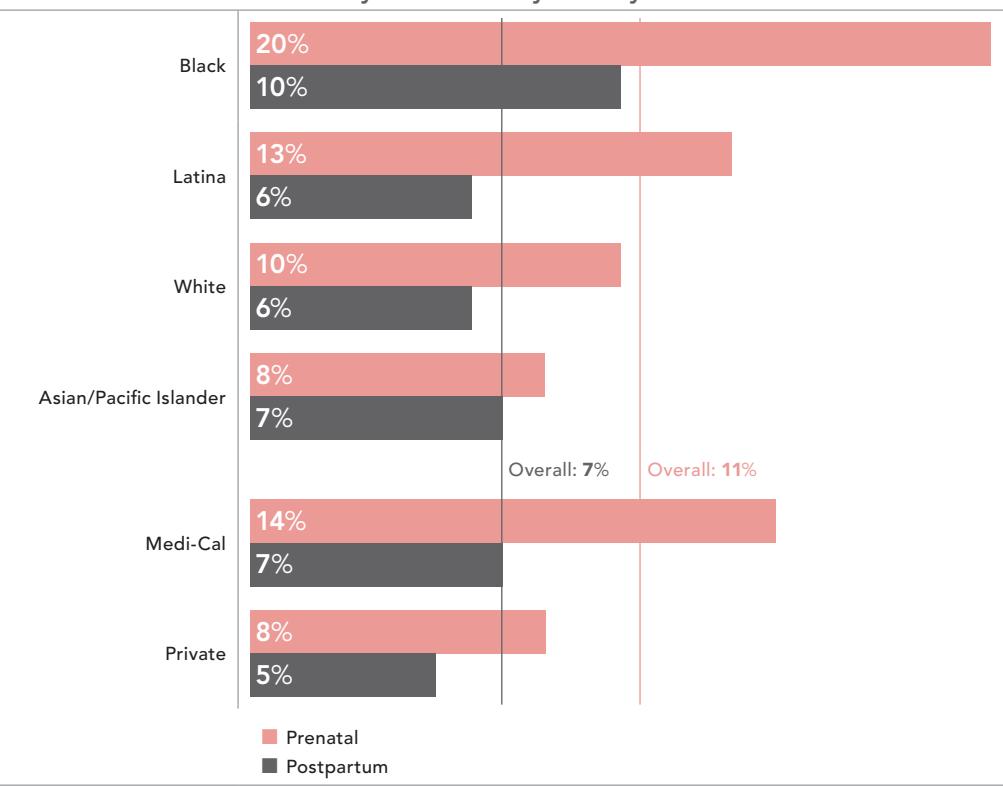
For prenatal depression, a notably higher proportion of Black women met the screening cutoff than other racial/ethnic groups ($p < .01$). For depression during pregnancy, women with Medi-Cal coverage were more likely to screen positive than women with private insurance ($p < .01$).

Figure 62: Prenatal and Postpartum Positive Screens for Anxiety Using GAD-2, by Race/Ethnicity and Payer



Base: All women (n=2519)

Figure 63: Prenatal and Postpartum Positive Screens for Depression Using PHQ-2, by Race/Ethnicity and Payer



Base: All women (n=2519)

p < .01 for difference in prenatal depression by race/ethnicity and payer

Relationship Between Depression and Anxiety, During Pregnancy and in the Postpartum Period

Table 12 indicates a strong relationship between positive screens for depression and anxiety in the prenatal period. Only 4% of women who did not meet the screening cutoff for prenatal anxiety met the criteria for prenatal depression, while almost 2 in 5 (38%) who met the anxiety screening criteria also met the screening criteria for depression risk.

Table 12. Depression Screens by Anxiety Screens in the Prenatal Period

	Negative for anxiety	Positive for anxiety*
Negative for depression	96%	62%
Positive for depression*	4%	38%

* Scored 3+ on a scale of 0 to 6 on GAD-2 for anxiety and on PHQ-2 for depression.

Base: All women (n=2519)

As shown in Table 13, a similar relationship exists between screening scores on the depression and anxiety scales in the postpartum period, with only 2% of women meeting the depression criteria when they did not meet the anxiety criteria. More than half of women who met the postpartum anxiety risk screening criteria also met the depression criteria.

“After birth, I cried for weeks. I felt so down I had no support from my OB doctor. I didn't get to see her after 6 weeks. It would be nice if there was more support for new mommies.”

”

“At 6 months, I recognize that I am going through some depression and anxiety. I have made a personal plan to help bring me back. ... If I don't see progress within the week I will make an appointment... I wonder how many other women out there are silent about these feelings like myself, but who do NOT have a plan for themselves and feel embarrassed about making an appointment.”

”

Table 13. Depression Screens by Anxiety Screens in the Postpartum Period

	Negative for anxiety	Positive for anxiety*
Negative for depression	98%	47%
Positive for depression*	2%	53%

* Scored 3+ on a scale of 0 to 6 on GAD-2 for anxiety and on PHQ-2 for depression.
Base: All women (n=2510)

Relationship Between Prenatal and Postpartum Anxiety and Between Prenatal and Postpartum Depression

There is also a strong relationship between screening scores for both anxiety and depression during the different time periods. Once again, it is important to recognize that the questions on prenatal and postpartum mental health were both administered to women in the postpartum period when they were asked to recall their feelings prenatally, so some of the overlap may be related to women viewing their prenatal moods through their current experiences.

In terms of the relationship between prenatal and postpartum anxiety, a woman who screened positive for anxiety in the prenatal period was more than five times as likely (27% compared to 5%) to have symptoms of anxiety in the postpartum period than women without anxiety symptoms prenatally (Table 14).

Table 14. Postpartum Screens by Prenatal Screens for Anxiety

Postpartum	Prenatal	
	Negative for anxiety	Positive for anxiety*
Negative for anxiety	95%	73%
Positive for anxiety*	5%	27%

* Scored 3+ on a scale of 0 to 6 on GAD-2 for anxiety.
Base: All women (n=2519)

In terms of depression, the difference is quite pronounced, with 31% of women meeting the prenatal criteria also screening positive for depression in the postpartum assessment, compared with only 3% of women who did not meet the criteria for prenatal depression (Table 15).

Table 15. Postpartum Screens by Prenatal Screens for Depression

Postpartum	Prenatal	
	Negative for depression	Positive for depression*
Negative for depression	97%	69%
Positive for depression*	3%	31%

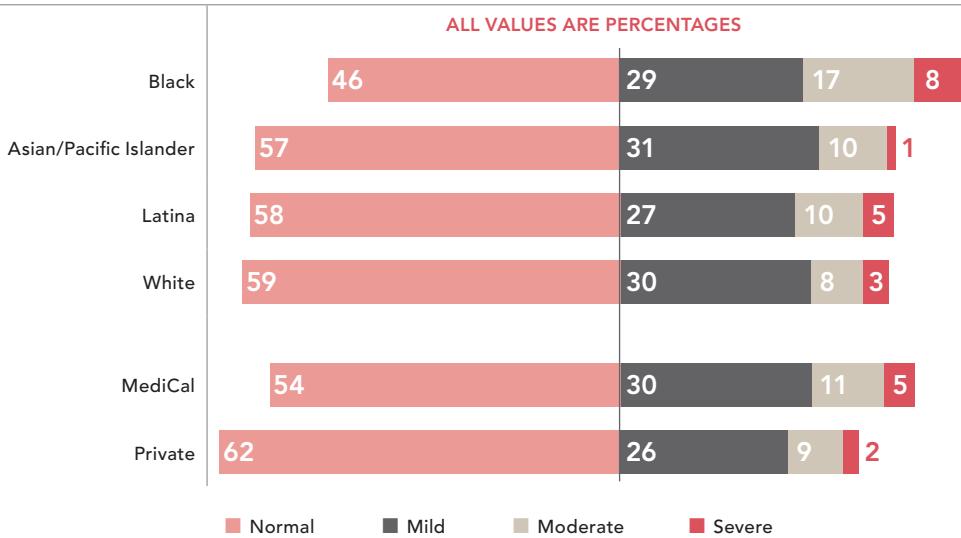
* Scored 3+ on a scale of 0 to 6 on PHQ-2 for depression.
Base: All women (n=2518)

Psychological Distress Symptom Severity

The composite PHQ-4 scale can be used as a marker for severity of psychological distress. Prenatally, 4% of all survey participants met screening criteria for severe psychological distress. An additional 10% were in the moderate range, and 28% were in the mild range. The remaining 58% were in the normal range.

When looking at subgroups, Black women were particularly affected in comparison with other racial/ethnic groups, with more than 1 in 4 Black women scoring in the severe or moderate range for psychological distress during pregnancy ($p < .01$). Likewise, women with Medi-Cal scored as having more severe and moderate psychological distress prenatally than women with private insurance ($p < .01$) (Figure 64).

Figure 64: Levels of Prenatal Psychological Distress, by Race/Ethnicity and Payer



Base: All women (n=2505)

$p < .01$ for difference by race/ethnicity and payer

In the postpartum period, 2% of survey participants scored at the level of severe psychological distress, while another 5% were in the moderate range and 19% were in the mild range. Three-quarters (75%) were in the normal range.

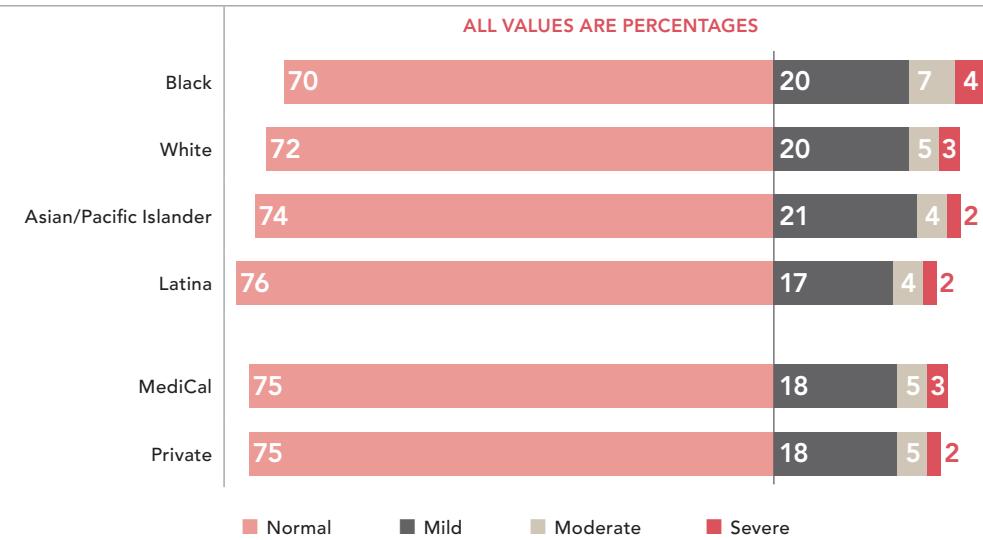
Subgroup differences in the postpartum period were not statistically significantly different, though 11% of Black women scored as having moderate (7%) or severe (4%) levels of distress (Figure 65).

“

There has to be more of an emphasis on postnatal care and catching early signs of postpartum depression, anxiety, and a mother's lack of connection to her baby. It is sad that there is not enough of a discussion or research on postpartum depression and a lack of normalizing this illness. More women would come forward, in my opinion, if it was normalized and spoken of immediately after the birth of a child.

”

Figure 65: Levels of Postpartum Psychological Distress, by Race/Ethnicity and Payer



Base: All women (n=2503)

Consulting a Professional for Mental Health Support

We asked all women if they had received any counseling or treatment for their emotional or mental well-being during their pregnancy or in the postpartum period. One in nine (11%) reported she had gotten help during pregnancy, while 13% reported receiving postpartum support. There was a strong interrelationship between the two, with 70% of women who received prenatal help also receiving support in the postpartum period, while only 5% of women who did not receive prenatal support reported getting help postpartum.

There was a strong relationship between meeting the screening criteria for anxiety or depression and reported support from a professional. For women meeting the screening criteria for either anxiety or depression during pregnancy, the reported level of receiving help was twice that of those not meeting the criteria. For women in the postpartum period, the chances were more than three times higher that those meeting the screening criteria were receiving help. *Nonetheless, among women with positive anxiety or depression screens during pregnancy, only about 1 in 5 reported receiving help; and among women with positive screens in the postpartum period, only about 1 in 3 reported receiving help.* About 1 woman in 10 reported that she had received counseling for emotional or mental well-being while not screening positive for these conditions (Table 16).

Table 16. Proportion of Women Reporting Receiving Counseling or Treatment for Emotional or Mental Well-Being

	Prenatal			
	Anxiety		Depression	
	No	Yes*	No	Yes*
Got prenatal counseling	9%	19%	10%	21%
Postpartum				
	Anxiety		Depression	
	No	Yes*	No	Yes*
Got postpartum counseling	10%	36%	11%	34%

* Scored 3+ on a scale of 0 to 6 on GAD-2 for anxiety and on PHQ-2 for depression.

Base: All women (n=2502)

“

Since having experienced postpartum depression I have come to discover that many of my friends have had the same experience. I would have been able to get treatment much sooner if it had been discussed sooner in the hospital.

”

“

There needs to be more measures taken to prevent PPD and places for mothers to go for help without feeling stigmatized for it.

”

Figure 66 depicts the proportion of women screening positive for the two conditions who did not and did receive counseling or treatment for emotional or mental well-being, during pregnancy and since giving birth. As noted, about 1 in 5 received such help during pregnancy, and about 1 in 3 since giving birth, with the great majority therefore not getting such help.

Figure 66: Receiving Counseling or Treatment for Emotional or Mental Well-Being, Among Those Screening Positive for Anxiety or Depression

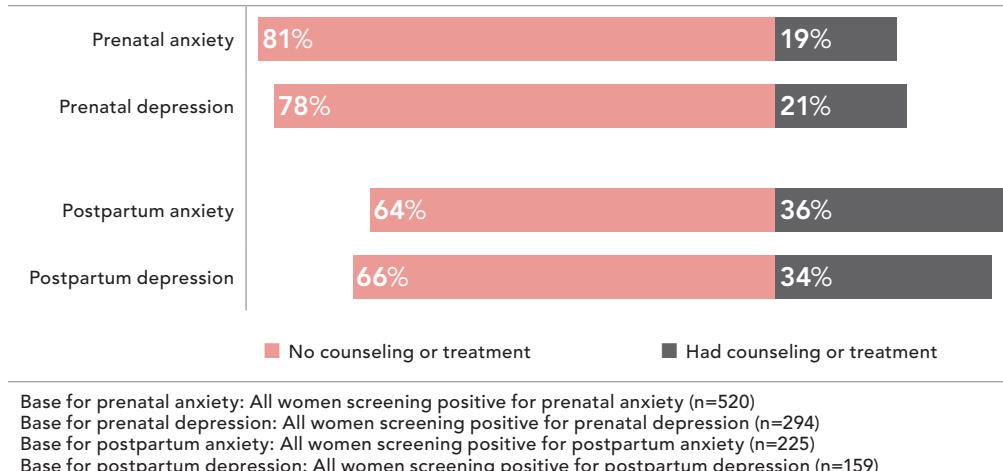
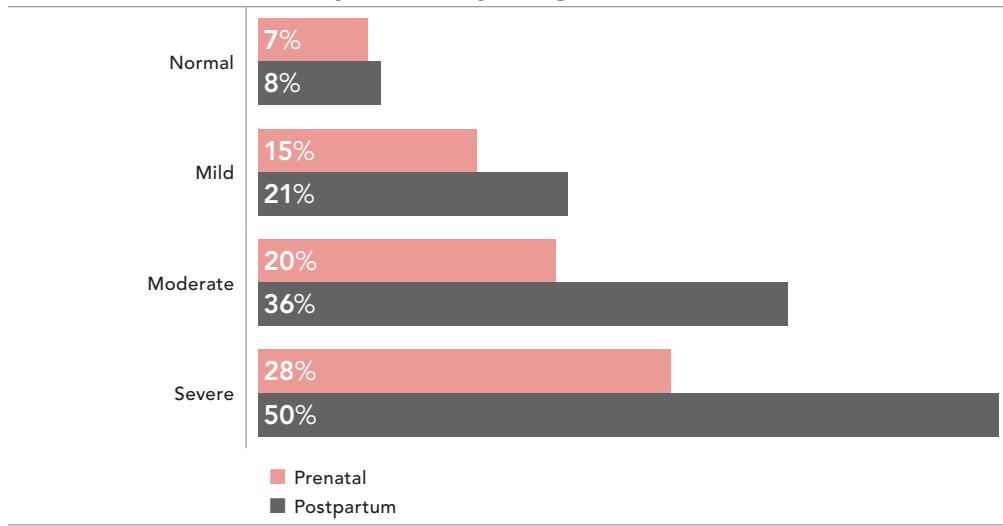


Figure 67 shows the proportion of women receiving counseling or treatment at each PHQ-4 level of severity of psychological distress, both during pregnancy and since giving birth. For both time periods, women's use of such services increased as the severity of distress increased ($p < .01$ in each case). At each level of severity, a greater proportion got help postpartum compared with during pregnancy. A small proportion of women (7% prenatal; 8% postpartum) with normal levels of psychological distress received such help, and the percentage receiving help only rose to as high as 28% during pregnancy and 50% postpartum for women reporting a severe level of psychological distress.

Figure 67: Receiving Counseling or Treatment, Prenatal and Postpartum, by Level of Psychological Distress



“

I was feeling bad. ... I was crying and a nurse came in and saw me and they did a questionnaire to know if I was going through post-partum depression.

”

While receiving prenatal or postpartum counseling was not significantly related to type of insurance (14% for private; 12% Medi-Cal), there were differences across racial/ethnic groups in terms of postpartum counseling, with White women (17%) most likely to report counseling followed by Black women (15%), Latinas (11%) and Asian and Pacific Islander women (9%) ($p < .01$).

Using Medication for Anxiety and Depression

We asked women if they were taking any medications for anxiety or depression at the time of the survey, and 5% reported that they were. This varied strongly by the postpartum mental health as measured by PHQ-4 severity categories, with only 2% in the normal range taking medication compared with 45% who were in the severe range ($p < .01$). Likewise, those who met the screening criteria for postpartum anxiety (25%) or depression (27%) were far more likely to be taking medication than those who did not meet the screening criteria for either problem (3% each) ($p < .01$). As noted above, while those who most clearly met the screening criteria for a mental health problem were far more likely to be taking medications, fewer than half of those women in the most severe category of the PHQ-4 were on medications for their problems. When asked if their medication was for anxiety or depression, a majority (60%) of those taking medication reported it was for both.

Not surprisingly, there was a strong relationship between women getting professional help and women taking medications. More than 1 in 4 (27%) of women receiving postpartum counseling reported taking medications compared with only 1% among women not in counseling. A demographic pattern similar to that for receipt of counseling was seen in terms of taking medications, with a non-significant difference in medication use by types of insurance coverage (private 6%; Medi-Cal 4%) and larger differences across racial/ethnic groups, with White women most likely to take medication (10%) compared to Black women (4%), Latina women (3%) and Asian and Pacific Islander women (2%) ($p < .01$).

Social Support and Psychological Distress

In Chapter 5, we discussed respondents' reports of their access to sources of emotional and practical support since giving birth. There was a clear relationship between receiving such support and PHQ-4 level of severity of psychological distress. Among those in the "normal" category, 62% of the women reported receiving emotional support "always." The rate of receiving such support "always" dropped across PHQ-4 categories, with 41% in the "mild" severity category, 38% in the "moderate" severity category and 25% in the "severe" category reporting they always had emotional support ($p < .01$). A similar pattern was seen in terms of practical support. Combining the emotional and practical support variables, we found 54% of respondents who reported always receiving both emotional and practical support were in the "normal" PHQ-4 category, while less than 1% in the "severe" category reported always receiving both types of support ($p < .01$).

Overall, it appears that very large proportions of childbearing women who were facing apparent mental health challenges were not receiving standard forms of treatment and also had limited sources of emotional and practical support.

“

New moms need to feel more supported when they are dealing with postpartum depression.

”



Conclusion

Conclusion

Many stakeholders in California and across the nation are deeply committed to improving maternity care and the well-being of childbearing women and infants. *Listening to Mothers in California* is a unique source of information about the experiences, outcomes and views of childbearing women, providing a window on many topics that are otherwise unavailable for this population at the state level.

Survey results, presented in this report and through a wealth of related documents,* point to a broad policy and practice mandate. Care that most childbearing women want but frequently do not receive is also high-value, evidence-based care that makes wise use of limited resources. All stakeholders must prioritize transforming our maternity care system in this direction. Similarly, after giving birth too many women experienced challenges with adequate time with their babies, breastfeeding, social support and mental health. We must stop failing to meet the needs of childbearing women at a time when they, their infants and families are especially vulnerable.

Beyond overall concerns for childbearing women and their infants lie deeply disturbing disparities by race/ethnicity – most consistently affecting Black women – and by payer, with Medi-Cal beneficiaries disproportionately facing challenges relative to women with private insurance. These inequities compound the harm and failure. Survey results are a call to action.

Listening to Mothers in California results highlight opportunities to close gaps between what women want and what they are experiencing. Notably, the great majority wanted to avoid unneeded interventions around the time of birth, yet experienced high rates of intervention, including the 1 respondent in 3 who gave birth by cesarean. Of special concern was the extent to which women reported experiencing pressure from a health professional to have several types of consequential interventions and the association of pressure with getting the intervention. Relatively few experienced “physiologic childbirth” without major interventions, according to the definition endorsed by leading professional organizations.** A timely new consensus blueprint for advancing high-value maternity care through physiologic childbearing can guide stakeholders in better meeting women’s preferences and improving care.***

We also found gaps between care and preferences when asking about interest in several high-value care arrangements should women have a future birth. Women identified far greater interest in use of midwifery care and labor doula support than actual use in their 2016 births. And while our survey was limited to hospital births, respondents expressed far greater interest in future use of birth center care and home birth than statewide use of these forms of care in 2016.

Our results further identify opportunities to close gaps between best evidence and professional guidance on the one hand and common patterns of care on the other. For example, survey items measured low use of practices promoted in a recent toolkit**** that

“Giving birth is so beautiful, scary, life changing, and emotional.”

“I’m so happy you’re calling and getting this feedback and I hope this survey does make a change in the maternity care women receive and gives the mothers a voice to be heard to be able to advocate for the kind of childbirth they want to have.”

“Just do what you know what’s right. You don’t always have to listen to anyone. It’s your decision at the end of the day.”

* Find the companion digital report and related facts sheets, issue briefs, videos, infographic, chartpack and other documents at NationalPartnership.org/LTMCA. Find all public project documents apart from the digital report at chcf.org/listening-to-mothers-CA.

** American College of Obstetricians and Gynecologists. (2017). *reVITALize Obstetric Data Definitions*. Retrieved 26 March 2018, from <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize-Obstetric-Data-Definitions>

*** Avery, M.D., Bell, A.D., et al. (2018). *Blueprint for Advancing High-Value Maternity Care Through Physiologic Childbearing*. Washington, DC: National Partnership for Women & Families. Retrieved 14 July 2018, from www.NationalPartnership.org/Blueprint

**** Smith, H., Peterson, N., Lagrew, D., & Main, E. (2016). *Toolkit to Support Vaginal Birth and Reduce Primary Cesareans: A Quality Improvement Toolkit*. California Maternal Quality Care Collaborative. Stanford, CA: California Maternal Quality Care Collaborative. Retrieved 19 October 2017, from <https://www.cmqcc.org/VBirthToolkit>

is being used in many California hospitals to support intended vaginal birth, and identified the low rate of vaginal birth after cesarean, which is not receiving commensurate policy and professional attention.

Survey results identify opportunities to incorporate shared decision-making and high-quality, up-to-date decision aids into maternity care. A validated question sequence applied to one common situation, mode of birth for women with one or two past cesareans, found that current patterns of decision-making align poorly with standards of shared decision-making. Results suggest that, overall, women were steered toward repeat cesarean birth and were not provided with resources to enable informed decisions about this matter.

The survey also identified knowledge gaps among women and the importance of providing better information to enable them to make wise fundamental choices of care provider and birth setting. While a heartening proportion of respondents found and used comparative quality information to make these decisions, the great majority was not aware of the extent of quality variation. There are rich opportunities for further building the skills and knowledge of childbearing women, providing access to better provider-level quality data, providing help navigating this information and making a search for comparative quality information a standard part of the early pregnancy experience. Relatedly, too many women, especially Medi-Cal beneficiaries, reported not having access to a choice of prenatal care provider.

While postpartum depression is widely recognized as a challenge for childbearing women, we found that many respondents also screened positive for anxiety and that more women appeared to experience symptoms of these conditions during pregnancy than in the postpartum period, based on a respected screening tool for psychological distress with subscales for anxiety and depression. We found that even in the most extreme case of "severe" psychological distress, most women were not receiving the most conventional types of help, counseling and medication.

We also looked at how women were faring in the postpartum period from several other perspectives. Most women who were doing paid work felt that they had not had enough time at home with their babies. Most who had breastfed but were not breastfeeding at the time of the survey felt that they had not fed breast milk as long as they liked – and these two findings are interrelated. Fewer than 3 mothers in 10 met the consensus standard for exclusive breastfeeding to 6 months. Too many never or just sometimes had sources of emotional and practical support since the birth of their babies. Finally, we documented significant out-of-pocket costs for many women with private insurance.

Cutting across all of the issues, survey results also sharpen our understanding of racial/ethnic disparities and present many opportunities to advance health equity. While we identified instances in which each of the commonly cited racial/ethnic groupings fared worst, time and again, results suggest that Black women face the greatest challenges, have the greatest need for better care and most desire access to supportive forms of maternal care. By oversampling Black women, we increased our ability to shed light on the views and experiences of this segment of the childbearing population. Survey results identify many areas where we can and must improve.

Survey results highlight disproportionate challenges facing Medi-Cal beneficiaries. These are multi-factorial, relating to the more vulnerable life circumstances of this group and its care patterns. Through data linkage, we identified women in our survey with a claim for their 2016 childbirth covered by Medi-Cal. The survey thus presents a unique opportunity for an in-depth look at childbearing women covered by Medi-Cal and the care they receive, with gold standard identification of this population and experiences, outcomes and views reported by women themselves. The survey found some advantages in care patterns favoring women with Medi-Cal coverage, others favoring women with private insurance and overall many opportunities for all health insurance providers and plans to drive improvement.

Altogether, *Listening to Mothers in California* results suggest a need for widespread care transformation to reliably deliver optimal maternal and newborn care. Such transformation could occur through such mechanisms as delivery and payment reform and quality improvement initiatives, performance measurement and accountability, consumer engagement, attention to health professions education and the composition and distribution of the health professions workforce, and research to fill gaps in knowledge. Through these levers, and through stronger paid leave, breastfeeding, mental health and other social policies and programs, we can help ensure that childbearing women and newborns have the care and supports and attain the positive outcomes that they deserve.

Appendix A: Listening to Mothers in California Survey Methodology

Listening to Mothers in California joins a series of national *Listening to Mothers* surveys carried out since 2002 to better understand experiences and perspectives of childbearing women. The state-level survey provided an opportunity for a sample drawn systematically from state birth certificates allowing us to identify a specific response rate for the survey. Other *Listening to Mothers* innovations for the California survey include availability of questionnaire and outreach materials in Spanish as well as English; outreach via mail and text message in addition to email and telephone; option of participating via smartphone and tablet as well as laptop, desktop and telephone interview; investigator access to survey participant birth certificate information; abstraction and merging of additional variables from the Medi-Cal (California's Medicaid) claims database; and data weighting using the 2016 Birth Statistical Master File.

Listening to Mothers investigators at the National Partnership for Women & Families and the Boston University School of Public Health collaborated with investigators at the University of California, San Francisco (UCSF) Center on Social Disparities in Health and the Quantum Market Research, Inc. survey research firm to develop and carry out *Listening to Mothers in California*. The California Health Care Foundation and the Yellow Chair Foundation co-funded the survey.

Institutional Review Board (IRB) and Related Approvals

The Committee for the Protection of Human Subjects (CPHS) of California's Office of Statewide Health Planning and Development is the IRB of record. CPHS designated the project as low-risk to human subjects, and approved it and subsequent protocol amendments. The UCSF IRB also approved the project. The California Department of Public Health (CDPH) Vital Statistics Advisory Committee approved access to birth certificate data for sampling, for contacting sampled women, for weighting the data and for conducting analyses. CDPH provided the requested items. The CDPH California Biobank Program approved and provided access to supplementary contact information for sampled women from the Genetic Disease Screening Program. The Data and Research Committee of the Department of Health Care Services approved and provided access to supplementary contact information for sampled women in the Management Information System/Decision Support System (MIS/DSS) Warehouse, identified Medi-Cal beneficiaries as sampled women with paid claims for their 2016 childbirths and provided several additional analysis variables for Medi-Cal beneficiaries.

Survey Questionnaire and Outreach Materials

The survey questionnaire included some new items and many continuing items from earlier *Listening to Mothers* surveys, including items that were condensed and adapted for mobile-first display on smartphones. Topics covered the prenatal through postpartum and infant periods, with a focus on maternity care experiences and perspectives and women's postpartum outcomes. Multiple items were included to investigate funders' interests: medicalization including overuse of cesarean birth, midwifery care, and maternal mental health, with examination of experiences and views across racial/ethnic groupings, source of childbirth payment (Medi-Cal, private) and other breakdowns. Three open-ended questions were asked of all survey participants to obtain complementary experiences and views in the women's own words. The final questionnaire was trimmed to take approximately 30 minutes when completed with a telephone interviewer in English.

Participants were recruited using up to four invitation and reminder mailings, which included distinctive envelopes and two inserts: invitation cover letters incorporating elements of informed consent and cards providing information about how to access the survey online

via any device using a unique code that was provided. The card also indicated how to reach a telephone interviewer and learn more about the project. Investigators offered sampled women gift cards to a choice of retail stores to thank them for completing the survey.

Using a variety of potentially engaging photographs of women and babies, the questionnaire and outreach materials were pilot tested and refined through a series of one-on-one interviews and focus groups in various locations around the state with women from diverse backgrounds who had recently given birth.

A sociologist and bilingual native speaker of Spanish translated the questionnaire and outreach materials from English into Spanish. A maternal and child health consultant, also a bilingual native speaker of Spanish, then back-translated the questionnaire from Spanish to English independent of the original English to identify issues in need of reconciliation. We repeated the processes of pilot testing and refinement of the Spanish-language project materials with Spanish-speaking women who had recently given birth. The questionnaire is available in both languages, along with other project materials, at NationalPartnership.org/LTMCA and chcf.org/listening-to-mothers-CA.

The survey was programmed using Qualtrics survey research software. Upon entry via a dedicated URL, online respondents could choose to participate in English or Spanish, and were required to provide the unique code included in the mailing insert card. A brief initial screener further verified eligibility.

Eligibility Criteria

Eligible participants were women 18 years or older; with a residential address in California (excluding suspected birth tourism addresses used temporarily by women from other countries); who gave birth in a California hospital to a singleton baby between September 1, 2016, and December 15, 2016; whose babies were living with them at the time of the first survey contact; who were not incarcerated, mentally incapable of taking the survey or in a rehabilitation facility; who were living in the United States at the time of the first survey mailing; and who could complete the survey in English or Spanish.

The rationale for these exclusions was as follows: ethical concerns about surveying minors or women whose babies were deceased, in foster care, etc.; ability to reach and survey sampled women; exclusion of distinctive populations with too few survey participants to produce meaningful results (multiples, out-of-hospital births and various reasons for women not residing with their babies); logistical challenges of questionnaire development and programming for these special cases; and lack of resources for extending to other languages.

Determination of eligibility occurred at two separate points: prior to sampling (eliminating birth certificates of known ineligible participants) and at the beginning of the questionnaire during a brief eligibility screen. The eligibility of individual women who could not be reached or who declined participation is unknown.

Sample Design and Birth Certificate Sample

Our sampling design reflected eligibility criteria to the extent available through birth certificate items and included strata based on birth certificate information for region of the state based on residential ZIP code, race/ethnicity, mode of birth and attendant at birth.

We limited the California birth certificate file for sampling to include only women with a birth from September 1, 2016, through December 15, 2016 (with plans to weight our data to all 12 months of 2016). The following situations indicating ineligibility for the survey were detectable from the birth certificates, and these birth certificates were removed prior to sampling:

- Mothers less than 18 years old.
- Women who were not residents of California at the time of birth, according to residential address on birth certificate. Births to suspected birth tourism addresses (where residents

of other countries are known to temporarily stay for the purpose of giving birth in the United States) and a small number of births where the maternal address was unavailable were also excluded (a usable address was necessary for mailing survey invitation letters).

- Women whose births occurred out of hospital (primarily home births or births in freestanding birth centers).
- Women with birth certificates indicating the infant had died.
- Women who had a twin, triplet or higher-order birth.

A stratified random sample was drawn from the pool of eligible births to women defined by the following strata: Black women with vaginal births after cesarean (VBACs), all other women with VBACs, women in Northern California who had a midwife as a birth attendant, women in Northern California who did not have a midwife, women in Southern California who had a midwife and women in Southern California who did not have a midwife. Black women, women who had a midwife as the birth attendant and women who had a VBAC were oversampled to increase the confidence in any conclusions about these relatively small groups in data analysis and reporting. The final sample of women we aimed to reach consisted of 4,796 women.

Online and Phone Interviewing

The field period ranged from February 22, 2017, through August 15, 2017. Invitational mailings were sent during the initial field weeks to addresses obtained from birth certificates, with two follow-up reminder mailings to nonrespondents. Respondents could complete the questionnaire in English or Spanish, either online or on the phone with an interviewer. They could work through the questionnaire in one or more sessions and switch between modes and devices. Most women who responded to the mailings chose to participate online, versus with an interviewer. As online responses to mailings tapered off, interviewers attempted to contact both nonrespondents and those who had partially completed the survey online, using information from birth certificates and other supplementary sources, such as the Genetic Disease Screening Program, the MIS/DSS Warehouse and various online search engines.

The process of contacting sampled women included up to four mailings, as well as multiple phone calls, emails and text messages to the extent these methods of contact were available. To encourage nonrespondents to participate over time and recognize the scarcity of women's discretionary time due to care of their baby, any other children, return to paid work or other responsibilities, the value of offered thank-you gift cards increased from \$15 to \$30 to \$50 to – via a fourth and final mailing – \$75 over the course of the field period. We experienced some delays in receipt of supplementary contact information, and some batches of contact information were only available near the end of our field period when many potential participants had presumably resumed paid work, had moved or were otherwise lost to follow-up.

A total of 2,539 women completed the survey: 34% on their own with a device, 28% by phone with an interviewer and 39% hybrid, generally by starting on a device and finishing with an interviewer. About 4 in 5 (81%) elected to use the English version and 1 in 5 (19%) chose the Spanish version.

Response Rate

Our response rate calculation was based on methods of the American Association of Public Opinion Research (AAPOR). Using their "Response Rate 2" methods, which exclude sampled participants found to be ineligible during the field period, our response rate was 54%. Examples of ineligibility discovered during the field period were as follows: baby not living with mother or respondent not living in the United States at time of outreach, and respondent unable to participate in English or Spanish. Using AAPOR's "Response Rate 4," which further estimates and excludes the proportion of sampled women of unknown

eligibility who were ineligible, our response rate was 55%. (Full calculation details are available upon request.)

Medi-Cal Data Linkage, Abstraction and Merge

The Data and Research Committee (DRC) of the Department of Health Care Services approved our request for analysis variables from the MIS/DSS Warehouse, which contains Medi-Cal claims data. In light of the many options for insurance coverage in California in 2016, including many employer-based options, Covered California plans, Medi-Cal managed care plans and fee-for-service Medi-Cal, the gold standard for Medi-Cal beneficiary was a sampled woman with a claim covered by Medi-Cal for her 2016 vaginal or cesarean birth. For further analysis, the DRC also provided Aid Code and Aid Code Category identifying the basis for eligibility and the Program/Plan Code identifying the mode of Medi-Cal participation, whether through fee for service or a managed care plan. In February 2018, the DRC identified Medi-Cal covered 2016 childbirth claims for 1,231 women who had completed our survey, for a Medi-Cal coverage rate of 48% (47% weighted). Medi-Cal beneficiary status and other analysis variables provided for Medi-Cal beneficiaries were merged into our dataset. The present report includes no analyses using the additional variables relating to eligibility and type of Medi-Cal participation. Further analyses are planned with that information.

Data Processing

Quantum Market Research, Inc. provided survey data without respondents' personal information to investigators at UCSF for processing. Data were cleaned, formatted, labeled and merged with birth certificate data for the sampled women using a unique ID created at the time of sampling. Variables with write-in response options were recoded, as needed. Constructed variables were created from some survey items for variables such as family income in relation to poverty, insurance and race/ethnicity.

The open-ended items asked of all survey participants were de-identified (e.g., all names of hospitals, clinicians and towns were removed) and the maternal and child health consultant who participated in questionnaire translation translated the open-ended Spanish responses into English. These translated responses were merged into the file of open-ended responses.

Weighting

To make the survey results as representative as possible of women meeting inclusion criteria who gave birth to live-born infants during the 12 months of 2016, responses of the women in the survey were weighted to reflect the distribution of eligible women with live births in 2016. Each woman who responded to the survey was assigned a weight, which stands for the number of mothers in California like herself that she represents. Weights were calculated using birth certificate records for sampled women and the final 2016 California birth data (Birth Statistical Master File), excluding births to women who would have been excluded from the sampling frame: those under age 18, those who were not residents of California, and the small number who had twins or other multiples or out-of-hospital births. Sampling weights were created to account for the stratified sample design, oversampling of specific groups, nonresponse among the women who were sampled and non-coverage of women who could not be sampled because their births were not in the sampling frame time period (births from September 2016 through December 15, 2016). Although the survey data were weighted to the entire birthing population, minus these few exclusions, the survey was only administered in English and Spanish and results may not be generalizable to women who speak other languages.

Birth certificates do not allow us to know the exact proportion of women ineligible for our study for reasons that are not tracked through birth certificate items, including those unable to participate in English or Spanish. Despite our exclusions, our weighted results are remarkably similar to statewide results in the 2016 Birth Statistical Master File on a broad range of variables, as shown in a table in Appendix B.

Appendix B: Demographic Overview of Survey Participants

Table 16 presents a demographic overview of survey participants in several forms and in comparison with similar statewide and national populations of women who gave birth in 2016.

The first column lists a series of data items and subgroups for comparative purposes. The next column describes the proportion in each subgroup within the California statewide 2016 Birth Statistical Master File, for women 18 and older with single births. The third column is derived from weighted birth certificates of survey respondents. The fourth column presents unweighted survey data from respondents, reflecting in part that we oversampled Black women and women with midwifery-attended births. This is followed by weighted survey data from respondents. The final column presents national 2016 birth certificate data for women 18 and older with single babies.

Of note in the table is the strong alignment across statewide data, respondents' birth certificate data and respondents' weighted survey data. The table also shows the distinctive attributes of birthing women in California in comparison with the nation as a whole. For example, California has fewer White and Black women and more Latina and Asian and Pacific Islander women and women born in other countries.

Due to the array of health insurance options in California, including many Medicaid managed care and Covered California plans, we preferred claims data as the gold standard for identifying Medi-Cal beneficiaries and collaborated with the Department of Health Care Services (DHCS) on linkage and abstraction. Survey analyses of Medi-Cal beneficiaries describe survey participants with paid childbirth claims in the DHCS MIS/DSS Warehouse by February 2018 for their 2016 birth.

Table 17. Demographic Overview of Survey Participants Using Birth Certificates and Survey Responses, and Comparison With Statewide and Federal Birth Certificate Data, 2016

	Singleton hospital births to women 18+, California, 2016	Listening to Mothers in California respondents, weighted birth certificate items, 2016	Listening to Mothers in California respondents, unweighted maternal responses, 2016	Listening to Mothers in California respondents, weighted maternal responses 2016	Singleton hospital births to women 18+, United States, 2016
Maternal age					
18–19	3%	3%	4%	4%	4%
20–24	18%	17%	18%	18%	21%
25–29	27%	27%	28%	27%	30%
30–34	30%	30%	30%	30%	29%
35+	22%	22%	20%	22%	17%
Race/ethnicity					
White, non-Hispanic	28%	28%	25%	27%	52%
Latina/Hispanic	48%	48%	50%	50%	23%
Asian/Pacific Islander, non-Hispanic	16%	15%	13%	16%	7%
Black, non-Hispanic	5%	5%	9%	5%	14%
Other, non-Hispanic	0%	0%	4%	3%	4%
Maternal birthplace					
U.S. born	63%	62%	65%	65%	76%
Other country (or territory)	37%	38%	35%	35%	24%
Number of times has given birth					
First birth	38%	40%	42%	40%	37%
2 or 3 births	50%	48%	48%	48%	50%
4 or more births	12%	12%	10%	11%	13%

Table 17 continued	Singleton hospital births to women 18+, California, 2016	Listening to Mothers in California respondents, weighted birth certificate items, 2016	Listening to Mothers in California respondents, unweighted maternal responses, 2016	Listening to Mothers in California respondents, weighted maternal responses 2016	Singleton hospital births to women 18+, United States, 2016
Maternal region of residence in California					
Los Angeles county	25%	25%	26%	25%	NA
San Francisco Bay area	18%	19%	21%	19%	NA
San Diego county	9%	9%	8%	9%	NA
Orange county	8%	7%	6%	7%	NA
San Joaquin valley	13%	12%	2%	2%	NA
Sacramento area	6%	6%	17%	16%	NA
Southeastern California	13%	14%	13%	14%	NA
Central coast area	6%	6%	5%	6%	NA
North/Mountain counties	3%	2%	2%	2%	NA
Maternal education					
Less than high school	13%	14%	12%	11%	12%
High school graduate/GED	25%	25%	20%	21%	37%
Some college	27%	26%	32%	32%	30%
College graduate	30%	30%	34%	33%	32%
Missing	5%	5%	2%	3%	
Childbirth payer					
Medi-Cal	44%	45%	48%*	47%	42%
Other government programs	2%	2%	0%		1%
Private insurance company	49%	49%	47%	44%	50%
Self-pay	2%	1%	1%		4%
Other	1%	2%	2%		1%
Indian Health Service	0%	0%	0%		0%
CHAMPS/ TRICARE	1%	1%	2%		1%
Maternal WIC receipt during pregnancy					
Yes	47%	49%	51%	**	39%
No	53%	50%	48%	**	60%
Unknown	0%	1%	1%	**	1%
Trimester of initiation of prenatal care					
1st trimester	83%	83%	84%	**	76%
2nd trimester	12%	12%	12%	**	16%
3rd trimester or no prenatal care	4%	3%	3%	**	6%
Missing	2%	1%	1%		3%
Location of birth					
Hospital	100%	100%	100%	100%	98%
Birth center	0%	0%	0%		1%
Home birth	0%	0%	0%		1%
Attendant at birth					
MD	83%	84%	79%	87%	83%
DO	6%	6%	6%		8%
CNM	10%	10%	15%	9%	9%
RN, nurse practitioner or physician assistant	0%	0%	0%	4%	0%
Other type of midwife	0%	0%	0%	0%	0%
Other	1%	0%	0%	1%	1%

Table 17 continued	Singleton hospital births to women 18+, California, 2016	<i>Listening to Mothers in California</i> respondents, weighted birth certificate items, 2016	<i>Listening to Mothers in California</i> respondents, unweighted maternal responses, 2016	<i>Listening to Mothers in California</i> respondents, weighted maternal responses 2016	Singleton hospital births to women 18+, United States, 2016
Mode of birth					
Cesarean section	31%	30%	29%	30%	31%
Vaginal	69%	70%	71%	70%	69%
Gestational age					
Preterm birth (<37 weeks)	7%	7%	7%	7%	8%
Term birth (37+ weeks)	93%	94%	93%	93%	92%
Birth weight					
Very low birth weight (<1,500g)	1%	1%	1%	1%	1%
Low birth weight (1,500–2,499g)	4%	4%	5%	5%	5%
Normal birth weight (2,500+g)	95%	95%	94%	94%	94%

* Medi-Cal respondents are survey participants with covered claims in the Department of Health Care Services MIS/DSS Warehouse for 2016 births.

** Drawn from the birth certificate item only.

Appendix C: Comparing Listening to Mothers in California Results and Federal, State and Other Vital and Health Statistics

The *Listening to Mothers in California* survey collected data on many maternity practices and interventions that are not available through California's vital and health statistics system and other sources. The survey also provides data on items that are collected through vital statistics and other sources. With its focus on maternity care and extensive information about the perinatal period, our survey complements California's annual Maternal and Infant Health Assessment survey, which covers an extensive range of topics, prioritizing those relevant to public health and social disparities in health and health behaviors.¹ Thus, the two surveys collected a limited set of identical items, primarily demographic variables.

This appendix summarizes knowledge about the accuracy of women's self-reports about maternity care practices, especially looking back one year or less. It also considers known discrepancies between our results and vital statistics and other sources. In several instances, results of validation studies that have found some items to be undercounted in birth certificates and discharge data suggest that survey items are likely to be closer to actual practice than data from birth certificates and other sources. More broadly, this appendix fosters dialogue about data quality issues that is possible with access to both a population-based survey and vital records and other sources capturing similar items.

In developing our questionnaire, we took efforts to increase the validity of survey results. 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. We pilot tested and revised questionnaire items over several rounds, in English and then, following translation from English to Spanish, in Spanish. When asking questions about women's experiences of procedures and other care practices, we frequently provided both a description of what would have taken place in layperson's terms and the medical term.

At the same time, our methodology has limitations that are important to acknowledge. We randomly sampled our eligible population from birth certificates to the extent that items permitted. At that point, we were unable to exclude two ineligible groups: women who could not participate in English or Spanish and women whose babies were not living with them when contacted for survey participation. Further, not all sampled women responded, and non-respondents and respondents likely differed in some ways. Use of the 2016 Birth Statistical Master File, a final file of all 2016 California birth certificates, to weight our data could partially but not completely improve the representativeness of our data.² Our results thus must be understood to be estimates.

VALIDATION STUDIES OF WOMEN'S RECALL

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 childbearing women themselves. The studies found that it is inappropriate to assume that medical records are consistently more accurate, that childbearing women 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.³

KNOWN DISCREPANCIES AND POSSIBLE EXPLANATIONS

An important consideration for understanding any discrepancies between maternal recall and results from birth certificates or other sources is consistent evidence of undercounting of some items in the state-based natality reporting system. Numerous validation studies have examined the accuracy of birth certificate data when compared to medical records, hospital discharge records, and maternal reporting, and have concluded that many items were underreported in natality system sources, with some substantially underreported.⁴ 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.⁵ These studies do not provide information about the variation, accuracy and completeness of reporting in California.

Although results of these studies cannot be used to specify the magnitude of discrepant reporting nationally or in California, 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 birth certificate data. In past *Listening to Mothers* studies, our overall rates of ultrasound, labor induction, and electronic fetal monitoring were substantially higher than those reported in national birth certificate data, and our rate of episiotomy was substantially higher than reported in hospital discharge data.⁶ The validation studies we identified, generally within specific states, typically found quite low sensitivity for these procedures and variation across settings.

Here we provide results of validation studies, carried out in various localities throughout the United States, that have examined the sensitivity of items included in the *Listening to Mothers in California Survey*. The current 2003 U.S. Standard Certificate of Live Birth improved the method of ascertainment for some items, dropped some items and added some items. States gradually adopted this form over more than a decade (California fully adopted the new form in 2006). When known, we have eliminated figures based on methods of ascertainment that predate the current birth certificate, which, starting in 2016, was used throughout the United States.

These lower rates of sensitivity suggest that for many items birth certificates give an incomplete count, with considerable undercounting of true positives and potential that maternal survey data reporting is more accurate.

Labor Induction

In our survey, 40% of respondents reported that a care provider used medication and/or procedures to try to start labor before it had started on its own. The 2016 California Birth Statistical Master File gives this rate as 14%, while the 2016 national rate from the National Vital Statistics System was 25%.⁷ Guidelines for completing certificates clarify that this is intended to capture attempted induction, whether or not labor is actually induced.⁸ In studies comparing birth certificate data to medical record or hospital discharge data, sensitivity of labor induction ranged from 45% (Yasmeen) to 46% (Martin, State B) to 52% (Lydon-Rochelle) to 55% (Dietz, New York City) to 56% (Parrish) to 61% (Piper) to 85% (Dietz, Vermont) to 86% (Martin, State A) to 96% (Zollinger).⁹ One study measured sensitivity of maternal recall of labor induction compared to "gold standard" electronic health record data as 87%.¹⁰ Another study considered maternal recall to be the "gold standard" for high quality data and compared birth certificate and hospital discharge data to maternal recall, finding sensitivity rates of 66% (birth certificate), 64% (hospital discharge data) and 83% (birth certificate OR hospital discharge data), compared to maternal recall.¹¹

Labor Augmentation

Guidelines for completing birth certificates and the professional definition of labor augmentation exclude labor augmentation (i.e., stimulation of established labor with

synthetic oxytocin and/or artificial rupture of membranes [AROM] if preceded by labor induction rather than spontaneous onset of labor).¹² Clearly, the vital statistics system is in transition on this decision rule and thus on ascertainment of labor augmentation, as the 2016 Public Use Natality File identifies 172,890 birth certificates with both procedures checked, and the California Birth Statistical Master File shows 12,520 women with both augmentation and induction.¹³ Because our survey focuses on women's experiences, we do not report a rate of labor augmentation using that definition, but rather report use of synthetic oxytocin to induce labor, to speed up labor and for either and use of AROM to induce labor, to speed it up and both combined (see Chapter 2). Here we share that the 2016 California Birth Statistical Master File gives the rate of labor augmentation as 17%, while the 2016 national rate from the National Vital Statistics System was 21%.¹⁴ Available validation studies show highly variant but generally low sensitivities for labor augmentation of 26% (Piper), 34% (Lydon-Rochelle), 37% (Dietz, New York City; Martin, State B), 70% (Martin, State A), 89% (Dietz, Vermont) and 94% (Zollinger), when comparing birth certificate data to medical record or hospital discharge data.¹⁵

Epidural/Spinal Analgesia

In our survey, 75% of respondents reported having epidural or spinal analgesia. The rate from the 2016 California Birth Statistical Master File is 65%, while the 2016 national rate from the National Vital Statistics System was 74%.¹⁶ Sensitivity for epidural/spinal analgesia when comparing birth certificate data to other data sources was 85% in State B and 96% in State A.¹⁷ In a study comparing maternal recall of epidural analgesia to electronic health records, maternal recall had 91% sensitivity.¹⁸

Electronic Fetal Monitoring (EFM)

Among *Listening to Mothers in California* respondents who labored and could recall, 68% reported having experienced EFM exclusively, 16% experienced both EFM and a handheld device (such as a Doppler or fetal stethoscope) and 3% exclusively experienced a handheld device to keep track of the fetal heart tones in labor. While not collected on the current birth certificate form, the previous 1989 form had a checkbox for "Electronic fetal monitoring."¹⁹ Available studies suggested considerable undercounting of this intervention on birth certificates. Reported sensitivity of EFM ranged from 33% (Zollinger) to 74% external/77% internal (Piper) to 78% (Dobie).²⁰

Ultrasound

While also not collected on the current birth certificate form, the previous form had a checkbox for "Ultrasound." Available studies suggested considerable undercounting of this intervention on birth certificates. Reported sensitivity of ultrasound ranged from 37% (Piper) to 44% (Reichman) to 51% (Zollinger) to 63% (Dobie).²¹ We asked *Listening to Mothers in California* respondents one specific ultrasound question, whether a care provider had used ultrasound near the end of pregnancy to estimate the size of the baby, and 69% reported that this had been the case.

Mode of Birth

Our survey data found that 69% of respondents had a vaginal birth and 31% had a cesarean birth. The 2016 California Birth Statistical Master File data indicated a 68% vaginal birth rate and a 32% cesarean birth rate. We would expect our data and birth certificates to be close because we weighted on mode of birth, adjusting for oversampling of women with vaginal birth after cesarean. Sensitivity of birth certificate data for any vaginal (spontaneous and vaginal/forceps or vaginal/vacuum) birth, compared to medical records, was measured at 100% (New York City and Vermont).²² Sensitivity for birth certificate data on spontaneous

vaginal birth, compared to medical records, was measured at 97% (State A) and 99% (State B).²³ Sensitivity for birth certificate data on total cesarean rate, compared to medical record data, was measured at 92% (Martin, State B), 97% (Dietz, New York City), 98% (Martin, State A) and 99% (Dietz, Vermont).²⁴ Sensitivity of maternal report of current cesarean birth, compared to medical records, was 100%.²⁵

We can also compare to the mode of birth in our respondents' weighted birth certificates: 30% cesarean and 70% vaginal births. Our target population excluded women with multiple births, who have higher-than-average rates of cesarean birth, as well as women with freestanding birth center and home births, who all have vaginal births.

We can also compare our total cesarean rate results when broken down by subgroups, as follows:

	<i>Listening to Mothers in California</i>	2016 California birth certificates
Black women	42%	38%
Asian/Pacific Islander women	31%	33%
Latinas	31%	32%
White women	29%	31%
Private coverage	28%	32%
Medi-Cal coverage	34%	31%

Racial and ethnic identity and mode of birth were self-reported in the *Listening to Mothers in California* survey and are also self-reported through the mother's worksheet used to complete birth certificates. As above, women's self-reports of cesarean birth are highly accurate. As cesarean rates of Black women vary greatly across regions in California, it is possible the Black women from areas of the state with higher rates (e.g., metropolitan Los Angeles) disproportionately responded (E. Main, personal communication, August 4, 2018). Arguably, our survey used a gold standard to identify Medi-Cal beneficiaries: paid claim for respondent's birth in the Medi-Cal claims database, with privately insured women determined by absence of a Medi-Cal claim and the women's selection of a private source when completing the survey. The composition of the *Listening to Mothers* and birth certificate payer subgroup denominators thus differs somewhat.

Finally, we can compare our survey results and statewide 2016 results for cesarean births in low-risk, first-birth women – widely used as a performance measures for fairer comparisons across hospitals and providers than the total cesarean rate. This is known as the "NTSV" rate, cesareans in Nulliparous (first birth) women, giving birth at Term (37 weeks or later) with a Singleton (pregnancy with one baby) in the Vertex (head-first) position.²⁶ Our NTSV rate, which relied on respondents' birth certificates for the vertex data, was 26%. The statewide 2016 NTSV performance measure of 25% was calculated using hospital discharge data to identify certain exclusions specified in the measure.²⁷

Previous Cesarean Birth

Our survey data showed 17% of respondents had at least one previous cesarean. The 2016 California Birth Statistical Master File data also indicates 17% of people giving birth in 2016 had any previous cesarean. Sensitivity for birth certificate record of any previous cesarean (compared to medical record data) has been measured at 63% (Martin, State B; Dietz, New York City), 82% (Martin, State A) and 91% (Dietz, Vermont).²⁸

Vaginal Birth After Cesarean

Our survey data (weighted down to account for oversampling of women with vaginal birth after cesarean) showed a 15% rate of vaginal birth among women with a prior cesarean (VBAC), compared to 8% calculated from the 2016 California Birth Statistical Master File. To calculate VBAC rate in both the survey and from state birth certificate data requires data about both previous cesarean(s) and mode of birth in the current birth. We did not find any studies of birth certificate data quality specifically for VBAC as ascertained in the 2003 revised certificate.

Trial of Labor Among Women With Repeat Cesareans

We asked respondents who had a repeat cesarean in this birth whether they had experienced some period of time in labor (having regular contractions) and tried to have a vaginal birth, and 22% reported that they did. This compares to 13% of repeat cesareans preceded by a "trial of labor" using the checkbox item in the 2016 California Birth Statistical Master File. Sensitivity for any trial of labor in birth certificate data compared to medical records was 74% (State B) and 89% (State A).²⁹

Midwife-Attended Birth

In our survey, down-weighting for oversampling of midwife-attended births, we found that 9% of women gave birth with a midwife as birth attendant. Birth certificates identify all but two of those attendants as certified nurse-midwives (CNMs). The 2016 California Birth Statistical Master File suggests that 10% of births in the state were attended by CNMs. These two sources are an especially close match given that CNMs were a portion of the birth attendants for the 1% of women with birth center or home births, which were excluded from our survey. A validation study of Texas births in 2014 found a birth certificate sensitivity of 63% in identifying certified nurse-midwife attended births, with large hospital-level variation due to policies in some facilities of having physicians sign certificates for some or all CNM-attended births.³⁰ A single-practice study in Michigan found a sensitivity of 89%.³¹ An issue brief from the American College of Nurse-Midwives identifies the potential of significant undercounting and need for better understanding of the accuracy of the CNM/CM item on birth certificates.³² (Certified Midwives, CMs, are not legally recognized in California.)

Payer

As above, our data linkage between survey respondents and paid Medi-Cal claims for the birth arguably constitutes a gold standard for identifying Medi-Cal payer. An experienced data analyst within the Department of Health Care Services carried out this work. This linkage identified 47% (weighted) of our respondents as Medi-Cal beneficiaries, compared to 43% with Medi-Cal as the expected principal source of payment for delivery in the 2016 California Birth Statistical Master File. Dietz looked at birth certificate data for Medicaid as principal source of payment for delivery and found sensitivity of 93% and 98% (New York City and Vermont, respectively); Martin found sensitivities of 73% (State B) and 79% (State A).³³ For private coverage (in our data, defined as no paid Medi-Cal claim and identification of private source in survey response), we found 44% (weighted), compared to the 2016 California Birth Statistical Master File rate of 48%. In validation studies, sensitivity for private insurance as principal source of payment for birth ranged from 82% (Martin, State A) to 86% (Martin, State B) to 87% (Dietz, New York City) to 95% (Dietz, Vermont).³⁴

No Postpartum Visit

In our survey, 9% of respondents reported having had no postpartum visit (12% Medi-Cal; 6% private insurance). Using the claims-based Postpartum Care health plan performance measure, the rate of having no postpartum visits is widely found to be much higher. For

example, in 2015, just 59% of women covered by Medi-Cal managed care were reported to have had any postpartum visit.³⁵ Nationally, the National Committee for Quality Assurance reported the following 2016 rates of having a postpartum visit: Commercial HMO 74% and PPO 66% and Medicaid HMO 64%.³⁶ These likely undercount postpartum visits for two reasons. First, the measure only counts a postpartum visit that occurs between 21 and 56 days after birth. Second, as some global billing codes include postpartum visits and other services, claims data do not separately provide information about all postpartum visits. We believe that our results are likely to be a more accurate measure of women without a postpartum visit, and they are indeed closely aligned with the California 2016 Maternal and Infant Health Assessment survey report that 88% of women had a postpartum visit.³⁷

Episiotomy

Our survey data showed an overall episiotomy rate of 20% among women with vaginal births. Because the rate of episiotomy has been declining overall in the United States,³⁸ we investigated whether that result may be inaccurate. After examining patterns in these data, our hypothesis is that the term "episiotomy" and the description of this procedure provided in the questionnaire may have been poorly understood, especially by respondents answering the survey in Spanish and respondents who took the survey in English but for whom English may not be a native language. We believe there may have been confusion among respondents in distinguishing actual episiotomy, perineal tears, and repairs of either. We have reported an estimated episiotomy rate of 16%, based on the rate among respondents who took the survey in English and were born in the United States. This is higher than the California 2016 9% rate for the nationally endorsed episiotomy performance measure.³⁹ This measure uses hospital discharge data to exclude cases of shoulder dystocia, which reduces the overall rate by about 1%. Further discussion of these data issues is found in Chapter 2. Older episiotomy validation studies, which were checks on the accuracy of hospital discharge records, found sensitivities ranging from 56% (Parrish) to 70% (Yasmeen) to 84% (Lydon-Rochelle).⁴⁰ Birth certificates have not measured use of this procedure.⁴¹

Labor Doula Use

We have reported a 9% rate of the use of labor doulas, based on survey data from respondents who usually speak English at home. Our overall survey results indicate a rate of 15%, which is higher than expected compared to other data sources and trends. Our most recent national *Listening to Mothers* survey of births in 2011-2012 measured a labor doula use rate of 6% and we do not believe that geographic or trend differences can account for such a large discrepancy between that rate of use and our overall measurement of 15% in the current survey.⁴² Rather, following exploration within our data and with survey interviewers, we believe that the term *doula* was not well understood among some survey participants, including respondents who took the survey in Spanish, older respondents, and respondents who do not use English as a primary language at home. Inflated rates of reported doula usage in those groups more likely reflect a supportive role played by other personnel. Further discussion of these data issues is found in Chapter 1. We are not aware of other sources of labor doula use, for comparison purposes, apart from our previous national surveys.

Pressure to Breastfeed

We obtained a rate of 27% of respondents reporting pressure from a health professional to breastfeed. However, we caution that this likely reflects some misunderstanding of the intent of the question, and find it difficult to develop a more accurate estimate. When we examined responses relative to a separate survey item asking how much nurses and hospital staff supported breastfeeding, 28% of women who felt staff supported breastfeeding also felt they were pressured, and 33% of the women who felt the staff discouraged breastfeeding also reported experiencing pressure (though the latter involved

small numbers since hospital staff was overwhelmingly supportive of breastfeeding). Women who said staff *neither supported nor discouraged* breastfeeding were least likely to report feeling pressured (16%). Thus, some respondents may have interpreted the question to mean pressure either to breastfeed or not to breastfeed rather than an exclusive focus on encouraging it, as intended. It is also possible that some respondents reported whether they had felt pressure from *any source* to breastfeed (versus the survey question "from any health professional"); societal pressure to breastfeed is a common topic of discussion groups, blogs and other forums for childbearing women. We are not aware of other reports of experience of pressure to breastfeed, for comparison purposes. See Chapter 5 for further discussion of these data issues.

CONCLUSION

This was our first *Listening to Mothers* survey that was fielded in both English and a language other than English, and California has a disproportionately high rate of childbearing women born in other countries. We found some differences in interpretation of the intent of doula and episiotomy items by language of the respondent, which appear to have led to some overcounting among non-English speakers. We found that our item measuring experience of pressure to breastfeed was in some respects not interpreted as intended and cannot be used to provide an accurate measure of its intended focus.

For some other procedures and practices, available validation studies suggest that our survey results, based on information provided by mothers themselves, may be closer to women's actual experience than birth certificates, discharge data and other available and "official" sources. In other cases, our results are not strictly comparable to other results due to some differences in numerators and/or denominators or are quite similar to other sources. The potential for more accurate ascertainment of numerous items, primarily experience of obstetric procedures and rate of having at least one postpartum visit, is an important strength of this survey.

ENDNOTES

- ¹ California Department of Public Health. (2018). *Maternal and Infant Health Assessment (MIHA)*. Retrieved 30 July 2018, from <https://www.cdph.ca.gov/Programs/CFH/DMCAH/MIHA/Pages/default.aspx>
- ² California Department of Public Health. *Vital Records Data and Statistics*. (2018.) Retrieved 2 August 2018, from <https://www.cdph.ca.gov/Programs/CHSI/Pages/Data%20Types%20and%20Limitations.aspx>
- ³ Tomeo, C.A., Rich-Edwards, J.W., Michels, K.B., Berkey, C.S., Hunter, D.J., Frazier, A.L., Willett, W.C., & Buka, S.L. (1999). Reproducibility and validity of maternal recall of pregnancy-related events. *Epidemiology*, 10(6), 774-7. Retrieved 30 July 2018, from <https://insights.ovid.com/pubmed?pmid=10535796>; Yawn, B.P., Suman, V.J., & Jacobsen, S.J. (1998). Maternal recall of distant pregnancy events. *Journal of Clinical Epidemiology*, 51(5), 399-405. Retrieved 30 July 2018, from [https://www.jclinepi.com/article/S0895-4356\(97\)00304-1/fulltext](https://www.jclinepi.com/article/S0895-4356(97)00304-1/fulltext); Lederman, S.A., & Paxton, A. (1998). Maternal reporting of pre pregnancy weight and birth outcome: consistency and completeness compared with the clinical record. *Maternal and Child Health Journal*, 2(2), 123-126. Retrieved 30 July 2018, from <https://link.springer.com/article/10.1023/A:1022996924094>; Olson, J.E., Shu, X.O., Ross, J.A., Pendergrass, T., & Robison, L.L. (1997). Medical record validation of maternally reported birth characteristics and pregnancy-related events: a report from the Children's Cancer Group. *American Journal of Epidemiology*, 145(1), 58-67. Retrieved 30 July 2018, from <https://academic.oup.com/aje/article/145/1/58/68265>; Simkin, P. (1992). Just another day in a woman's life? Part II: Nature and consistency of women's long-term memories of their first birth experiences. *Birth*, 19(2), 64-81. Retrieved 30 July 2018, from <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1523-536X.1992.tb00382.x>; Oakley, A., Rajan, L., & Robertson, P. (1990). A comparison of different sources of information about pregnancy and childbirth. *Journal of Biosocial Science*, 22(4), 477-487. Retrieved 30 July 2018, from <https://www.cambridge.org/core/journals/journal-of-biosocial-science/article/comparison-of-different-sources-of-information-about-pregnancy-and-childbirth/5332DF8C7D434725C848F3954AA00B25#>; Martin, C.J. (1987). Monitoring maternity services by postal questionnaire: congruity between mothers' reports and their obstetric records. *Statistics in Medicine*, 6(5), 613-627. Retrieved 30 July 2018, from <https://onlinelibrary.wiley.com/doi/pdf/10.1002/sim.4780060510>; Hewson, D., & Bennett, A. (1987). Childbirth research data: medical records or women's reports? *American Journal of Epidemiology*, 125(3), 484-91. Retrieved 30 July 2018, from <https://academic.oup.com/aje/article-abstract/125/3/484/93883>
- ⁴ Zollinger, T.W., Przybylski, M.J., & Gamache, R.E. (2006). Reliability of Indiana birth certificate data compared to medical records. *Annals of Epidemiology*, 16(1), 1-10. Retrieved 30 July 2018, from [https://linkinghub.elsevier.com/retrieve/pii/S1047-2797\(05\)00101-8](https://linkinghub.elsevier.com/retrieve/pii/S1047-2797(05)00101-8); Yasmeen, S., Romano, P.S., Schembri, M.E., Keyzer, J.M., & Gilbert, W.M. (2006). Accuracy of obstetric diagnoses and procedures in hospital discharge data. *American Journal of Obstetrics & Gynecology*, 194(4), 992-1001. Retrieved 30 July 2018, from <https://www.sciencedirect.com/science/article/pii/S0002937805013839>; Lydon-Rochelle, M.T., Holt, V.L., Nelson, J.C., Cárdenas, V., Gardella, C., Easterling, T.R., & Callaghan, W.M. (2005). Accuracy of reporting maternal in-hospital diagnoses and intrapartum procedures in Washington State linked birth records. *Paediatric and Perinatal Epidemiology*, 19(6), 460-471. Retrieved 30 July 2018, from <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-3016.2005.00682.x>; Roohan, P.J., Josberger, R.E., Acar, J., Dabir, P., Feder, H.M., & Gagliano, P.J. (2003). Validation of birth certificate data in New York State. *Journal of Community Health*, 28(5), 335-346. Retrieved 30 July 2018, from <https://link.springer.com/article/10.1023/A:1025492512915>; DiGiuseppe, D.L., Aron, D.C., Rambom, L., Harper, D.L., & Rosenthal, G.E. (2002). Reliability of birth certificate data: A multi-hospital comparison to medical records information. *Maternal and Child Health Journal*, 6(3), 169-79. Retrieved 30 July 2018, from <https://link.springer.com/article/10.1023/A:1019726112597>; Reichman, N.E., & Hade, E.M. (2001). Validation of birth certificate data: A study of women in New Jersey's HealthStart Program. *Annals of Epidemiology*, 11(3), 186-93. Retrieved 30 July 2018, from [https://www.annualsofepidemiology.org/article/S1047-2797\(00\)00209-X/fulltext](https://www.annualsofepidemiology.org/article/S1047-2797(00)00209-X/fulltext); Dobie, S.A., Baldwin, L.M., Rosenblatt, R.A., Fordyce, M.A., Andrilla, C.H., & Hart, L.G. (1998). How well do birth certificates describe the pregnancies they report? The Washington State experience with low-risk pregnancies. *Maternal and Child Health Journal*, 2(3), 145-54. Retrieved 30 July 2018, from <https://link.springer.com/article/10.1023/A:1021875026135>; Green, D.C., Moore, J.M., Adams, M.M., Berg, C.J., Wilcox, L.S., & McCarthy, B.J. (1998). Are we underestimating rates of vaginal birth after previous cesarean birth? The validity of delivery methods from birth certificates. *American Journal of Epidemiology*, 147(6), 581-6. Retrieved 30 July 2018, from <https://europepmc.org/abstract/MED/9521185>; Parrish, K.M., Holt, V.L., Connell, F.A., Williams, B., & LoGerfo, J.P. (1993). Variations in the accuracy of obstetric procedures and diagnoses on birth records in Washington State, 1989. *American Journal of Epidemiology*, 138(2), 119-27. Retrieved 30 July 2018, from <https://academic.oup.com/aje/article-abstract/138/2/119/93424?redirectedFrom=fulltext>; Piper, J.M., Mitchel, E.F. Jr, Snowden, M., Hall, C., Adams, M., & Taylor, P. (1993). Validation of 1989 Tennessee birth certificates using maternal and newborn hospital records. *American Journal of Epidemiology*, 137(7), 758-68. Retrieved 30 July 2018, from <https://academic.oup.com/aje/article-abstract/137/7/758/159929?redirectedFrom=PDF>
- ⁵ Smulian, J.C., Ananth, C.V., Hanley, M.L., Knuppel, R.A., Donlen, J., & Kruse, L. (2001). New Jersey's electronic birth certificate program: Variations in data sources. *American Journal of Public Health*, 91(5), 814-6. Retrieved 30 July 2018, from <https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.91.5.814>
- ⁶ Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Risher, P. (2002). *Listening to Mothers: Report of the First National U.S. Survey of Women's Childbearing Experiences*. New York: Maternity Center Association. Retrieved 30 July 2018, from http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-i_2002.pdf; Declercq, E.R., Sakala, C., Corry, M.P., & Applebaum, S. (2006). *Listening to Mothers II: Report of the second national U.S. Survey of women's childbearing experiences*. New York: Childbirth Connection. Retrieved 30 July 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-ii-2006.pdf>; Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Herrlich, A. (2013). *Listening to Mothers III: Pregnancy and Birth*. New York: Childbirth Connection. Retrieved 30 July 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-iii-2013.pdf>
- ⁷ See note 2; National Center for Health Statistics. (2018). Births: Final Data for 2016. Supplemental tables. *National Vital Statistics Reports*, 67(1). Retrieved 30 July 2018, from https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_01_tables.pdf
- ⁸ National Center for Health Statistics. (2016). *Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 revision)*. National Vital Statistics System. Retrieved 30 July 2018, from <https://www.cdc.gov/nchs/data/dvs/GuidetoCompleteFacilityWks.pdf>
- ⁹ See note 4, Lydon-Rochelle; see note 4, Parrish; see note 4, Piper; see note 4, Yasmeen; see note 4, Zollinger; Martin, J.A., Wilson, E.C., Osterman, M.J., Saadi, E.W., Sutton, S.R., & Hamilton, B.E. (2013). Assessing the quality of medical and health data from the 2003 birth certificate revision: results from two states. *National Vital Statistics Reports*, 62(2). Retrieved 30 July 2018, from https://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_02.pdf; Dietz, P., Bombard, J., Mulready-Ward, C., Gauthier, J., Sackoff, J., Brozicevic, P., Gambatese, M., Nyland-Funke, M., England, L., Harrison, L., & Farr, S. (2015). Validation of selected items on the 2003 U.S. standard certificate of live birth: New York City and Vermont. *Public Health Reports*, 130(1), 60-70. Retrieved 30 July 2018, from <http://journals.sagepub.com/doi/abs/10.1177/003335491513000108>
- ¹⁰ Bat-Erdene, U., Metcalfe, A., McDonald, S.W., & Tough, S.C. (2013). Validation of Canadian mothers' recall of events in labour and delivery with electronic health records. *BMC Pregnancy & Childbirth*, 13(Suppl. 1), S3. Retrieved 30 July 2018, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3561172/>
- ¹¹ Kjerulff, K.H., & Attanasio, L.B. (2018). Validity of Birth Certificate and Hospital Discharge Data Reporting of Labor Induction. *Women's Health Issues*, 28(1), 82-88. Retrieved 30 July 2018, from [https://www.whijournal.com/article/S1049-3867\(17\)30090-7/fulltext](https://www.whijournal.com/article/S1049-3867(17)30090-7/fulltext)
- ¹² See note 8; American College of Obstetricians and Gynecologists. (2017). *reVITALize Obstetric Data Definitions*. Retrieved 6 August 2018, from <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize-Obstetric-Data-Definitions>
- ¹³ See note 2; National Center for Health Statistics. (2017). *Vital Statistics Data Available Online*. Retrieved 6 August 2018, from https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm#Births
- ¹⁴ See note 7, National Center for Health Statistics.
- ¹⁵ See note 3, Lydon-Rochelle; see note 4, Martin; see note 4, Piper; see note 4, Zollinger; see note 9, Dietz.
- ¹⁶ See note 7, National Center for Health Statistics.
- ¹⁷ See note 9, Martin.
- ¹⁸ See note 10.
- ¹⁹ Ventura, S.J. (2018). The U.S. National Vital Statistics System: Transitioning into the 21st century, 1990-2017. *National Center for Health Statistics. Vital Health Statistics*, 1(62). Retrieved 30 July 2018, from <https://stacks.cdc.gov/view/cdc/52818>
- ²⁰ See note 4, Dobie; see note 4, Piper; see note 4, Zollinger.
- ²¹ See note 4, Dobie; see note 4, Piper; see note 4, Reichman; see note 4, Zollinger.
- ²² See note 9, Dietz.
- ²³ See note 9, Martin.
- ²⁴ See note 9, Dietz; see note 9, Martin.

- ²⁵ See note 10.
- ²⁶ National Quality Forum. (2016). PC-02 Cesarean Birth. Washington, DC: National Quality Forum. Retrieved 30 October 2017, from <https://www.qualityforum.org/QPS/MeasureDetails.aspx?standardID=291&print=1&entityTypeID=1>
- ²⁷ Cal Hospital Compare. (2018). Cal Hospital Compare. Retrieved 2 August 2018, from <http://calhospitalcompare.org/>
- ²⁸ See note 9, Martin; See note 9, Dietz.
- ²⁹ See note 9, Martin.
- ³⁰ Biscone, E.S., Cranmer, J., Lewitt, M., & Martyn, K.K. (2017). Are CNM-attended births in Texas hospitals underreported? *Journal of Midwifery and Women's Health*, 62(5), 614-619. Retrieved 30 July 2018, from <https://onlinelibrary.wiley.com/doi/abs/10.1111/jmwh.12654>
- ³¹ Walker, D.S., Schmunk, S.B., & Summers, L. (2004). Do birth certificate data accurately reflect the number of CNM-Attended births? An exploratory study. *Journal of Midwifery and Women's Health*, 49(5), 443-448. Retrieved 30 July 2018, from <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1542-2011.2004.tb04439.x>
- ³² American College of Nurse-Midwives. (n.d.). Accuracy of attending provider data in birth certificates – is research on this topic justified? Retrieved 30 July 2018, from <http://www.midwife.org/acnm/files/ccLibraryFiles/Filename/00000006187/BirthCertificateAccuracyIssueBrief.pdf>
- ³³ See note 9, Dietz; see note 9, Martin.
- ³⁴ Ibid.
- ³⁵ California Department of Health Care Services. (2016). 2015 HEDIS® Aggregate Report for Medi-Cal Managed Care. Sacramento, CA: Managed Care Quality and Monitoring Division, California Department of Health Care Services. Retrieved 30 July 2018, from http://www.dhcs.ca.gov/dataandstats/reports/Documents/MMCD_Qual_Rpts/HEDIS_Reports/CA2015_HEDIS.pdf
- ³⁶ National Committee for Quality Assurance. (2017). State of Health Care Quality Report: Perinatal Care. Retrieved 30 July 2018, from <http://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality/2017-table-of-contents/perinatal-care>
- ³⁷ United Health Foundation America's Health Rankings. (2018). Trend: Postpartum Visit, California, United States. Retrieved 30 July 2018, from https://www.americashealthrankings.org/explore/health-of-women-and-children/measure/postpartum_visit/state/CA?edition-year=2016
- ³⁸ National Quality Forum. (2011). NQF #0470 Incidence of Episiotomy. Washington, DC: National Quality Forum. Retrieved 2 August 2018, from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwicouKa0McAhUchjQIHVzyBJYQFjAAegQIABAC&url=http%3A%2F%2Fwww.qualityforum.org%2FWorkArea%2Flinkit.aspx%3FLinkIdentifier%3Did%26ItemID%3D69267&usg=AOVaw1CtQWtsBP___uxiii7sU0T
- ³⁹ Castlight & The Leapfrog Group. (2018). Maternity Care: Data by Hospital on Nationally Reported Metrics. Retrieved 2 August 2018, from http://www.leapfroggroup.org/sites/default/files/leapfrog_castlight_maternity_care_2018%20report.pdf
- ⁴⁰ See note 27.
- ⁴¹ See note 19.
- ⁴² Declercq, E.R., Sakala, C., Corry, M.P., Applebaum, S., & Herrlich, A. (2013). *Listening to Mothers III: Pregnancy and Birth*. New York: Childbirth Connection. Retrieved 30 July 2018, from <http://www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-iii-pregnancy-and-birth-2013.pdf>



About National Partnership for Women & Families

For more than 45 years, the National Partnership for Women & Families has fought for every major policy advance that has helped this nation's women and families. We work to foster a society in which everyone has access to quality, affordable health care, women's reproductive health and rights are secure, workplaces are fair and family friendly, discrimination is a thing of the past and every person has the opportunity to achieve economic security and live with dignity.

The National Partnership's Childbirth Connection programs work to advance effective strategies for maternity care quality improvement and transformation, including innovative delivery systems, value-based payment systems, consumer engagement and performance measurement.

The National Partnership for Women & Families is a nonprofit, nonpartisan 501(c)3 organization located in Washington, D.C. Learn more at NationalPartnership.org.



About California Health Care Foundation

The California Health Care Foundation is dedicated to advancing meaningful, measurable improvements in the way the health care delivery system provides care to the people of California, particularly those with low incomes and those whose needs are not well served by the status quo. We work to ensure that people have access to the care they need, when they need it, at a price they can afford.

CHCF informs policymakers and industry leaders, invests in ideas and innovations, and connects with changemakers to create a more responsive, patient-centered health care system.

For more information, visit www.chcf.org.

YELLOW CHAIR FOUNDATION

About Yellow Chair Foundation

Yellow Chair Foundation funds organizations working to advance civil liberties, educational equity, environmental protections, public interest journalism, and maternal health.

The foundation's support for maternal health focuses on increasing access to birth settings with integrated provider teams to reduce unnecessary medical interventions and improve the long-term outcomes for mothers and babies in the United States.