

“My Birth Matters” Research and Development: Creating Communications to Educate Low-Risk, First-Time Mothers About C-Sections

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Overview/Project History

Childbirth is the number-one reason for hospitalization in both California and the US. In California, there are 500,000 births each year (one-eighth of all US births), half of which are paid for by Medi-Cal. In the past decade, the cesarean section (C-section) birth rate has risen by 50% nationwide. In recent years in California, nearly **one-third of low-risk, first-birth deliveries occurred via C-section — more than the federal Healthy People 2020 goal of 23.9%**. This upward trend is seen across all demographics, and California hospitals show significant, unwarranted variation (ranging from under 15% to above 60%) in the number of low-risk, first-birth C-sections performed. Overuse of C-sections matters because, while important and sometimes lifesaving in limited circumstances, the surgery also brings serious risks both for mothers (such as higher rates of hemorrhage, transfusions, infection, and blood clots) and for babies (such as higher rates of infection, respiratory complications, and neonatal intensive care unit stays, as well as lower breastfeeding rates).

In recent years in California, nearly one-third of low-risk, first-birth deliveries occurred via C-section — more than the federal Healthy People 2020 goal of 23.9%.

Currently in California there is a significant statewide initiative to lower the rate of low-risk, first-birth C-sections in order to meet national standards (more about this effort in *Health Affairs* and on the [California Health Care Foundation](#) website). This effort currently involves key stakeholders such as provider groups, hospitals, and public and private health care purchasers. A key component of this effort is a toolkit for hospitals developed by the California Maternal Quality Care Collaborative (CMQCC), a quality-improvement organization focused on improving maternity care that is based at Stanford University. This resource, the *Toolkit to Support Vaginal Birth and Reduce Primary Cesareans*, is now widely used by hospitals in California and across the country to support vaginal birth and address the overuse of C-sections.

However, this toolkit focuses only on the provider side of the improvement equation. For these efforts to succeed, in addition to needing to engage payers and others in the health care system, patients themselves need to be educated and empowered to be part of the solution as well. In particular, Smart Care California (SCC), a public-private partnership that purchases or manages care for more than 16 million Californians — or 40% of the state, requested the development of materials. SCC is cochaired by the state's leading health care purchasers: the California Department of Health Care Services, which administers Medi-Cal; Covered California, the state's health insurance marketplace; and the California Public Employees' Retirement System (CalPERS), which manages benefits for more than 1.6 million current and former state employees and their families. SCC is currently focusing on reducing overuse of C-sections as one of three goals.

To address this gap in patient education and develop patient-oriented materials that compliment the CMQCC provider toolkit, the [California Health Care Foundation](#) (CHCF), CMQCC, and *Consumer Reports* (CR), teamed up to conduct research to inform the development of educational materials. These materials serve to motivate pregnant first-time mothers to take practical steps to reduce their chances of having an avoidable C-section. CHCF funded this project and CR conducted the research with significant input from members of the CMQCC and CHCF teams. See [Appendix A](#) for a full list of the team members involved.

The goals of this effort were to (1) raise women's awareness about C-sections and the importance of avoiding one unless it is absolutely needed; (2) direct women to educational materials about pregnancy, labor, and birth, and (3) encourage informed, shared decisionmaking between the woman, her doctor, and other members of her care team. The patient education materials were developed using a rigorous process of directly engaging and testing with patients, obtaining feedback from providers and key stakeholders ([Appendix B](#)), and consulting both the published literature and experts in the subject matter and in how to educate patients. This document explains the development process and key findings.

This research had 10 parts. (See [Appendix C](#) for project timeline.) The team started with the research, development, and testing of the videos and, from that, developed print as well as website resources.

Research Conducted and Findings

PART 1 Past, Relevant Research

What we did. Prior to the start of this project, CR had conducted a national survey of Latina and Black women on their attitudes toward birth and birth interventions ($N = 1,577$). Pérez et al. (2017) engaged community members in deliberative sessions to understand their perspectives about the overuse of C-sections ($n = 117$) (*Doing What Works*). CR had also conducted a literature review on C-section patient education. For this project, CR team members reviewed findings from this work.

What we found. Survey results suggest that younger, less-wealthy women of color could benefit most from information about health and childbirth options through educational programs and targeted, culturally relevant content. These women are less confident when it comes to managing their own health and lack familiarity with childbirth terms and practices. Vaginal birth is still the most preferred method among Latinas and Black women. However, many have a limited understanding of the risks and benefits of each delivery method.

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In particular, the CR team reviewed the findings of the *Doing What Works* study. In this study, participants were concerned about the wasteful costs associated with unnecessary C-sections, as well as the increased harm to mothers and babies. The majority of participants (54%) supported pre-approvals by an outside reviewer for providers who have comparatively higher C-section rates. Many preferred this option because they believed this would stop unnecessary C-sections before they happen.

PART 2 Interviews with Women Who Had Had a C-Section

What we did. To inform the specific objectives of this project, the research team wanted to better understand what women who had recently had a C-section wished they had known about C-sections before birth as well as illuminate the events leading up to the decision to have a C-section. To achieve this, we held a focus group in Oakland, California, of postpartum mothers who had a C-section within the past year ($n = 9$).

What we found. Participants described the experience of being told they need a C-section as confusing and scary. Participants often did not understand the process of a C-section, had a number of questions about the reasons why they needed a C-section, and had little knowledge about the labor process. Lack of information resulted in fear, confusion, and self-doubt.

PART 3 Interviews with Providers

What we did. To identify actions that maternity care providers would support and recommend to reduce the likelihood of an unnecessary C-section, we conducted interviews with health care providers. We asked participants about the actions and approaches they would recommend for low-risk, first-time mothers to reduce the likelihood of a C-section ($N = 18$). We interviewed 18 health care professionals from three (3) different types of health care professions — OB/gyns ($n = 9$), family practitioners ($n = 3$), and midwives ($n = 6$) — across the United States. Participants were chosen to represent a range in approaches to caring for expectant mothers, geographic regions, and clinical practices.

What we found. There were many similarities between the three professions we studied with regard to prenatal recommendations, such as maintaining a healthy pregnancy with exercise and eating right. Furthermore, the three professions agreed that the labor process is unpredictable and, while birth preferences are important, women should be open to changes that need to happen as a result of how the labor progresses. Lastly, all three professions rely heavily on prenatal childbirth classes to educate mothers about what to expect during labor and delivery.

Parts 4, 5, and 6

The team identified three regions across California (Fresno, Los Angeles, and Oakland) to capture regional variations — including rural versus urban, variation in C-section rates, and density of hospitals. The team intentionally oversampled participants who identified ethnically as Hispanic or as racially Black, those who were insured through Medi-Cal, and first-time mothers.

The focus group and interview questions were developed in consultation with a core research team composed of a health service researcher, a social psychologist, a communications strategist, a consumer advocate, and a physician. A broader advisory group comprised key stakeholders in maternity care, health care policymakers, health care purchasers, and maternity care providers then vetted final interview questions. Three trained facilitators who culturally and racially/ethnically mirrored the participants facilitated each group.

Due to time and budget constraints, materials could not be tested and developed in multiple languages. Given that among the nearly 500,000 births in 2017, about 220,000 of these births were to Hispanic women, the research team chose to test and develop resources in Spanish. Focus groups and interviews were conducted in Spanish and English in Parts 4 and 5.

PART 4 Assessing Expectant Mothers' Values and Attitudes Toward C-Sections

What we did. Part 4 assessed first-time, expectant mothers' attitudes toward C-sections as well as their motivation and ability to take specific actions to reduce the likelihood of a low-risk, first-birth C-section. The team tested a number of messages by varying the information or facts contained within the message. The scientific literature and interviews with providers in Part 3 indicated that two actions — [taking a prenatal class](#) and [not coming to the hospital too early when labor begins](#) — would reduce a woman's chances of having a C-section. Statewide data indicate that hospital choice matters because of the wide variation in C-section rates, but many California women, especially those on Medi-Cal, have limited options for hospitals in their community.

Eight focus groups ($N = 78$) were held; two were conducted in Spanish. Participants represented a mix of races (33% White, 33% Black, 9% Asian, 1% American Indian, and 23% other), ethnicities (54% non-Hispanic and 46% Hispanic), and insurance types (46% Medi-Cal, 49% commercial, and 5% uninsured). Most participants were married (36%) or living with a partner (29%). Seventy-four percent of participants had attended some college (23%), earned an associate's degree (8%), earned a bachelor's degree (31%), or earned a graduate degree (12%).

What we found. Without prompting, participants expressed fear about C-sections, which is a strong motivator for wanting to take action to reduce their likelihood of having a C-section. Most importantly, participants were ready and motivated to make the changes needed to reduce the likelihood of a C-section. Focus groups revealed that expectant mothers were not aware of the problem of variation in C-section rates. This variation provoked participants to ask why potentially inappropriate overuse is happening.

We found that participants were unlikely to follow through on waiting until they are in active labor to go to the hospital and most participants did not intend to or had not attended prenatal classes. We learned that participants are loyal to and trust their health care providers even if they are not satisfied with their patient-provider relationship. A high level of loyalty and trust results in unwillingness to switch hospitals and risk their continuity of care.

Many participants expressed motivation to be healthy by eating right and exercising, but many found it difficult to initiate or sustain these self-care activities. Barriers to self-care were lack of time and concern that self-care appeared selfish. Many of the participants were family caregivers (e.g., caring for their partner, parents, nieces, nephews), and time taken for self-care meant taking time away from caring for family.

A number of messages describing reasons to take action and the actions that could be taken to reduce the likelihood of an unnecessary C-section were developed and tested. We found that the majority of participants were willing to make two specific behavior changes: (1) educate themselves and (2) talk to their doctor about ways to reduce their chances of having a C-section.

PART 5 Message Development and Testing

What we did. Two interim animated black-and-white animations were developed and then tested in one-on-one interviews in English and Spanish. One animation is narrated from the perspective of a new mother, and the second animation is narrated from the perspective of a labor and delivery nurse.

The “new mother” character was developed as someone who shares the same concerns as first-time expectant mothers and someone with whom first-time pregnant women could relate (e.g., “If she can do it, so can I”). A labor and delivery nurse was chosen as a highly trusted health care professional whose advice was credible and trustworthy as well as to increase awareness about the role of the labor and delivery nurse. In the testing, the viewing order of the animations was randomized within participants’ racial and ethnic groups.

Animations were chosen for several reasons, including:

- ▶ The distinctive look and feel of animation
- ▶ The ability to communicate complex ideas in less time
- ▶ The ability to make age and ethnicity more ambiguous, thereby enabling the audience to relate more readily to the characters
- ▶ The ability to create print products in the same visual style as the videos (one look and feel)
- ▶ The practical, cost-effective nature of animation versus live video

All 27 participants were currently pregnant. A majority of participants were pregnant with their first child. Three of the 27 participants were on their second pregnancy, with their prior delivery being a vaginal birth. Participants represented a mix of races (15% White, 33% Black, 7%

Asian, and 44% other), ethnicities (41% non-Hispanic and 59% Hispanic), and insurance types (63% Medi-Cal and 37% commercial). Most participants were married (56%). Four of the 27 interviews were conducted in Spanish.

What we found. Participants expressed that they liked hearing and learning from the experiences of someone like themselves. Participants had little understanding of the role of the labor and delivery nurse, but they related to her character as a caring, motherly figure. Many participants relied on the experiences of women in their lives who had childbirth experience, such as sisters, mothers, and aunts, for information and advice about pregnancy, labor, and birth. Participants were receptive to and identified with the animated characters.

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Based on the findings in Part 5, the team worked on multiple iterations of the scripts and videos. The near final versions of the script and videos were vetted with key stakeholder groups to inform the final videos.

PART 6 Assessing the Influence of Videos on a Patient Visit

What we did. This part explored the ways in which the videos might stimulate conversations about C-sections between first-time mothers and their providers and whether this conversation might influence a change in their birth plan. Interviews included identifying topics discussed during the participant’s prenatal visit, determining the influence of the video on the participant, and learning more about the participant’s pregnancy.

We tested the ways in which the two videos influenced discussions about C-sections between first-time pregnant mothers and their health care providers, such as whether a conversation occurred, the content of that conversation, and whether the conversation influenced a change in the birth plan. The ten participants represented a mix of races (10% White, 30% Black, 10% Asian,

and 50% other), ethnicities (50% non-Hispanic and 50% Hispanic), and insurance types (90% Medi-Cal and 10% commercial).

Prior to the interview, participants were instructed to view two videos before their next prenatal appointment. Interviews were then conducted less than 48 hours after the participant's prenatal appointment.

What we found. After seeing the videos, all participants were more confident with their decision for a vaginal birth, 8 of the 10 participants initiated a conversation about C-sections with their provider, and two participants changed their birth plan from a planned C-section to trying for a vaginal birth. The videos seemed to motivate participants to advocate for themselves in order to reduce the likelihood of a C-section.

PART 7 Testing Print Materials

What we did. In Part 5, participants were asked to respond to designs, animations, and statements for printed materials.

What we found. Participants across all ethnic and racial groups found the characters relatable. Participants noted that the pamphlets would be beneficial and useful if found in a waiting room, citing the amount of time they have spent in waiting rooms during their pregnancy.

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Participants preferred messages that were positive and empowering, invoking a positive attitude toward their role in reducing the likelihood of a C-section. Participants desired and reported searching for detailed information about pregnancy, labor, and birth and were drawn to statistical data about C-sections.

PART 8 Vetting Videos with Key Stakeholders

What we did. We reached out to a representative sample of key stakeholders (see [Appendix B](#)), showed them the main two videos, and solicited their feedback.

What we found. Stakeholder feedback resulted in adjustments to terminology and phrasing in the videos and underscored the need to develop two additional videos — one highlighting the roles of the birth team and the other modeling a patient-provider discussion about C-sections and why they are overused.

PART 9 Developing and Testing a Patient-Facing Website

What we did. To support participants' desire for more information, a website (www.MyBirthMatters.org) was developed. CMQCC developed a patient-facing website to educate expectant parents. The information on this website is informed by interviews conducted with expectant mothers (Parts 4, 5, and 6) and input from health care professionals.

The www.MyBirthMatters.org website was tested for accessibility and usability with expectant mothers ($N = 10$). Participants engaged in a think-aloud internet search for information after viewing the video. Participants talked aloud while navigating the website, describing where their attention was drawn, aspects of the website or information that was confusing to them, and their thoughts or feelings as they were navigating the website.

We conducted 45-minute one-on-one interviews with 10 expectant mothers. A majority of participants were insured through Medi-Cal.

What we found. Where participants experienced challenges navigating the website, expressed confusion, or missed important aspects of the website, the research team redesigned these elements to optimize the usability of the website.

Final Products

This research led to the production of this final series of products.

Four Animated Videos

The content of Videos 1 and 2 were directly informed by research Parts 4, 5, and 6. These two videos achieved the objectives of educating women about the variation in hospital C-section rates and motivating them to take action. After seeing the two one-minute videos, participants wanted to know: (1) the reasons for the variation and rise in hospital C-section rates and (2) how to engage in a conversation with their health care provider about reducing the likelihood of an unnecessary C-section.

Our findings also suggested that participants lacked knowledge about the different roles of a maternity care team. These findings led the team to conclude that two additional videos were needed to provide a more focused explanation in response to these two persistent findings. Similar to the approach with the first two videos, the additional videos were developed in consultation with key stakeholders and the research team. Due to time and budget constraints, and given that they were add-on products not foreseen from the start, Videos 3 and 4 were not tested with patients, so the research team used the findings and patient feedback from testing Videos 1 and 2 to hone the language, look, feel, and approach of Videos 3 and 4. Videos 3 and 4 were also shared with a subset of key stakeholders to obtain feedback during development. Ultimately, a total of four animated videos were produced.

All animated videos are available for free in English and Spanish with subtitles.

Video 1: Patient Perspective and Video 2: Labor and Delivery Nurse Perspective

These two videos are the core videos of the educational effort. As noted above, the goal of these videos is to (1) raise women's awareness about C-sections and the importance of avoiding one unless it is absolutely needed and (2) encourage informed shared decisionmaking between the woman, her doctor, and other members of her care

team. The team created two videos with different narrators. In one, the narrator is a labor and delivery nurse, and in the other the narrator is a new mother. The differing narrators were selected to give different voices and perspectives for the viewer; these characters share different, relevant facts and perspectives on the issue.

Video 3: Birth Care Team

This video was created in response to our findings that some women did not know different types of providers who could be part of their care team. This video is meant to introduce several key types of providers who can be helpful as part of a woman's birth care team: labor and delivery nurse, nurse midwife, doula, and child birth educator.

Video 4: Doctor and Mother Q&A

This video was created because some women were left with a number of lingering questions after viewing Videos 1 and 2. It was meant to answer those questions while not having to make the other videos any longer, which would make them less likely to be watched and harder to share on social media (one of the desired outcomes). The video was also intended to model and demystify a conversation between a woman and her doctor.

Print Materials

In addition to the videos, printed educational materials were produced that echo themes from the videos. All print materials are available for free in English and Spanish.

Patient education brochures were developed to introduce and deliver the same messages as in the videos, but for distribution in clinical care settings especially. Posters were developed at the request of hospitals to be displayed in patient areas and in clinical offices. The printed materials and videos reinforce each other by communicating the same messages and using the same characters and design themes from the videos.

Materials can be found at the [California Health Care Foundation](#) website.

Patient-Facing Website

A patient-facing website was developed to share the products of this research as well as to provide additional information, especially about steps women can take to avoid a C-section unless it is absolutely necessary. The website is www.MyBirthMatters.org, which was chosen based on feedback from participants. This link brings users to a patient portal on the CMQCC website, and is available in both English and Spanish. Additionally, information about the patient education materials are shared on the provider-facing portion of CMQCC's website as a companion to the C-section provider toolkit. As noted earlier, the patient materials are a companion to the provider toolkit. CMQCC was selected to develop and host this website due to the reputation of the organization in the maternity care field. All the videos and printed materials can be found at this website.

Dissemination: The Final State

The dissemination of the completed products is the final step and a very critical component of this project. Many suggestions were made throughout the course of the development process that indicate engaging stakeholders from all facets of the health care system to support dissemination of this campaign is necessary to reach those for whom this information could be useful. Ways that health care insurers, providers, advocates, and others can help to distribute materials include but are not limited to embedding videos in emails to pregnant women, posting videos on patient portals, playing videos in waiting rooms, posting to social media, and handing out print materials during visits. The project team is planning extensive outreach to entities that could help disseminate the products, and to build awareness about the My Birth Matters campaign.

Campaign resources:

- ▶ Communications toolkit, brochures/posters, background documents for promoting the campaign available at www.chcf.org/c-section-consumer-ed
- ▶ Consumer website with videos and resources for expectant mothers available at www.MyBirthMatters.org
- ▶ Email address for questions: info@mybirthmatters.org

Appendix A. Development Team

California Health Care Foundation

Eric Antebi
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Senior Communications Officer

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Director, Learning & Impact

California Maternity Quality Care Collaborative (CMQCC)

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Co-Lead for Toolkit to Support Vaginal Birth

Consumer Reports

Jill Arnold
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Independent Consultants

Catherine Brozena
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Wild Swan Resources

Appendix B. Key Stakeholders

These organizations provided input during the development process.

American Congress of Obstetricians and Gynecologists

Association of Women's Health, Obstetric and Neonatal Nurses

California Department of Health Care Services

California Department of Public Health

California Hospital Association

California Medical Association

California Nurse-Midwives Association

California Public Employees' Retirement System (CalPERS)

Covered California

Hospital Quality Institute

Pacific Business Group on Health

Smart Care California

Appendix C. Project Timeline

2015–2016	Part 1: Past, Relevant Research
Spring 2017	Part 2: Interviews with Women Who Had Had a C-Section
Spring 2017	Part 3: Interviews with Providers
Early summer 2017	Part 4: Assessing Expectant Mothers' Values and Attitudes Toward C-Sections
Late summer 2017	Part 5: Message Development and Testing
Winter 2018	Part 6: Assessing the Influence of Videos on a Patient Visit
Late summer 2017	Part 7: Testing Print Materials
Late 2017, early 2018	Part 8: Vetting Videos with Key Stakeholders
Spring 2018	Part 9: Developing and Testing a Patient-Facing Website

Table 1: Part 1, 2, and 3 Participant Demographics (N)

	MEDI-CAL	COMMERCIAL	UNINSURED	TOTAL
Location				125
Fresno	9	11	2	22
Los Angeles	35	30	2	67
Oakland	22	14	0	36
Race				125
White	17	16	2	35
Black	21	19	0	40
Asian	6	4	0	10
American Indian	0	1	0	1
Other	22	15	2	39
Ethnicity				125
Non-Hispanic	34	29	0	63
Hispanic	30	28	4	62
Part				125
Part 4*	35	39	4	78
Part 5†	24	13	0	27
Part 6†	9	1	0	10

* Focus group

† Individual interviews