

# Patient Communication, Satisfaction, and Trust Before and After Use of a Standardized Birth Plan

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## Abstract

*The birth plan was developed as a way for pregnant women to communicate their desires and expectations for labor and delivery. Standardized birth plans have been used by some birth facilities as a communication tool. In this quality improvement project, we sought to describe communication, trust, and satisfaction scores after delivery in a group of patients who used a standardized birth plan. All pregnant women at 24 or more weeks of gestation were asked to complete a short, standardized birth plan. Communication, trust, and satisfaction were assessed before and after delivery. Descriptive analyses showed that communication, trust, and satisfaction scores were high following delivery. Scores for all three factors increased significantly following delivery though increases were modest. Most patients (84%) indicated they would use a birth plan with a subsequent delivery.*

## Keywords

*birth plan, labor, delivery, satisfaction, trust, communication*

## Introduction

A birth plan outlines a woman's desires for the labor and delivery experience. Patients who use birth plans typically prepare a written document during the antepartum period, which they present to staff at the time of labor.<sup>1</sup> Birth plans address physical and emotional preferences and include items such as identifying support people who will be present at the delivery. Birth plans can also communicate a patient's preferences regarding medical interventions like epidurals and induction of labor. The use of patient-initiated birth plans is becoming increasingly common in obstetric care. Multiple online sites geared towards pregnant women include examples and templates of birth plans.

In addition to being a communication tool, birth plans have also been described as a way for women to exert more autonomy during the birth experience. Advocates of birth plans state that they allow women to feel empowered and less "out of control."<sup>2</sup> Increased patient involvement in obstetric decision-making increases satisfaction with the labor and delivery experience.<sup>3,4</sup> In one study, feeling left out of decision-making was associated with a six-fold decrease in satisfaction among nulliparous women and a 15-fold decrease in satisfaction among multiparous women.<sup>5</sup>

Whether a patient-initiated birth plan has an impact on obstetric outcomes remains unclear.<sup>6</sup> Medical personnel vary in their opinion of birth plans, with some who support birth plans and others who report that it sets unrealistic expectations for an unpredictable process.<sup>7,8</sup>

In contrast to patient-initiated birth plans, standardized birth plans are designed by health care providers to present women with a standard series of questions that allow them to delineate

their wishes for labor and delivery. Standardized birth plans can be a simple way for health care providers to introduce birth plans to women who might not be familiar with this concept. Compared to the birth plans a woman might find on the internet, standardized birth plans can provide women with labor and delivery options available at a particular facility.

Use of a standardized birth plan in Australia increased satisfaction for patients and increased communication between patients and providers.<sup>9</sup> In that study, 95% of patients stated that they would encourage future birth plan use.<sup>9</sup> Another study conducted among low-income patients in Mexico showed that this population benefitted from standardized birth plans and would use them again.<sup>7</sup> In the current quality improvement project, we sought to describe how a group of culturally and educationally diverse women presenting for obstetric care in Honolulu, Hawai'i rated communication, satisfaction and trust with use of a standardized birth plan during labor and delivery.

## Materials and Methods

This study was conducted at the Kapi'olani Medical Center Women's Outpatient Clinic in Honolulu, Hawai'i between September 1, 2014 and November 30, 2015. Patients were primarily cared for by the University of Hawai'i Obstetrics and Gynecology resident physicians at this clinic. We created a standardized birth plan based on options available to patients in our clinical setting (Table 1). The birth plan was two pages long and was designed to be at or below an eighth-grade reading level. Adult women who presented for obstetric care and could read and understand the birth plan in English without the assistance of a translator were eligible. Women who planned to have a cesarean delivery or anticipated delivering outside our facility were excluded. This project was designated as a quality improvement project by the Hawai'i Pacific Health Research Institute and was granted exempt status by the Hawai'i Pacific Health Research Institute.

Women who were at 24 or more weeks of gestation were approached by their physician about participating in this study. Written consent was obtained from those who wished to participate. Participants took the pre-delivery survey at one of their antepartum visits. They provided demographic information including age, education, race, and parity and were asked whether they had used a birth plan with any previous deliveries. Patients were asked "how satisfied do you think you will be with using a birth plan for the delivery of your baby, do you feel that you have adequate communication with your care team, and do you trust

**Table 1. Standardized Birth Plan**

My supportive person's first name: \_\_\_\_\_

For each statement, please choose ALL options that you would like.

While in labor, I would like:

- Music playing with speakers that I provide
- The TV playing
- A quiet room
- My support person to be present and be able to stay with me
- To stay hydrated with clear liquids and ice chips

I would like to spend the early part of labor

- Walking
- Lying down
- Take a shower

For pain relief, I would like to use

- Breathing techniques
- Visualization techniques
- Meditation
- Massage, as provided by my support person
- Epidural
- Local anesthetic at time of delivery (pudendal block)
- I am not sure but will request what I would like at the time

As the baby delivers, I would like to

- Push as directed by medical staff
- Push when I feel like pushing
- The labor room to be quiet
- Use a mirror to see the baby deliver
- To touch the baby's head as it crowns
- To avoid episiotomy (a small cut of the outer vagina to make more room for baby) unless my doctor deems it necessary
- To avoid operative delivery (forceps or vacuum to help the baby deliver) unless my doctor deems it necessary

Immediately after vaginal delivery, I would like:

- The baby to be placed on my chest
- The baby to be cleaned and swaddled before given to me
- My support person to cut the umbilical cord
- The umbilical cord to be cut after it stops pulsing, unless it is necessary for it to be cut sooner for the well-being of the baby.
- To donate cord blood to the Hawai'i Cord Blood Bank
- To see the placenta before it is discarded
- To take the placenta home with me

If a Cesarean section is necessary, I would like

- My support person to be present
- My support person to hold the baby as soon as possible
- My support person to accompany the baby to the nursery
- To see the baby before it is taken to the nursery
- To have the pediatric team update me before taking the baby from the operating room

I would like to breastfeed

- As soon as possible after delivery
- After the baby is cleaned and swaddled
- I am not sure if I will breastfeed my baby
- I am interested in seeing the lactation consultant while I am in the hospital
- I would only like to feed my baby formula if recommended by the pediatricians
- I would like access to a breast pump

the doctors taking care of you?" Patients responded by marking a position on a 10-centimeter line based on the strength of their feelings of satisfaction, communication, and trust. This visual analog scale enabled the patients' answers to be quantified by equating their response to each question to a number out of 10. After answering questions about communication, satisfaction, and trust, patients were presented with the standardized birth plan and were allowed to make their choices independently. Resident physicians then reviewed the birth plan with women and answered questions about the birth plan. Completion of the birth plan took less than 10 minutes for most patients.

Birth plans were entered into the electronic medical record so that they could be accessed at the time of admission to labor and delivery. Following delivery, a second survey using identical questions and a 10-centimeter visual analog scale was administered before hospital discharge by a research assistant who was not involved in the care of the patient. Following discharge from the hospital, an investigator reviewed the patient's medical record and noted gestation age at the time of delivery, any obstetric events such as the need for induction or cesarean section, as well as any obstetric or neonatal complications.

We hypothesized that the standardized birth plan would facilitate communication between patients and health care providers and would result in high communication scores following delivery. Other objectives included an assessment of trust and satisfaction before and after delivery with use of the standardized birth plan. We also described the proportion of patients who stated they would use a birth plan with a subsequent delivery. By evaluating these factors, we sought to determine if the use of a standardized birth plan was associated with a positive birth experience. We estimated a pre-delivery satisfaction level of 6.0 (SD 2.5) and a post-delivery satisfaction level of 7.5 (SD 2.5) or higher. A sample of 40 patients would give us 80% power with a significance level of 0.05 using a paired t-test to be able to detect an increase of 1.5 in satisfaction score, which was deemed to represent a clinically meaningful increase.

**Results**

Eighty-one patients met inclusion criteria during the project period. The demographics of the study population are outlined in Table 2. Acknowledging the racial diversity of Hawai'i, where many people are multiracial, we allowed patients to indicate multiple races. The most commonly selected racial groups were Native Hawaiian/Pacific Islander (70%) and Asian (21%). The mean age of participants was 27.8 (SD 6.1) years. Though a wide range in education level was reported, almost half had a high school education or less (48%). Most patients had never used a birth plan prior to participating in the study (90%). Most patients did not require cervical ripening prior to labor (93%) (Table 2). About three quarters of patients received an epidural in labor (78%) and had a spontaneous vaginal delivery (75%). Roughly half of all patients had artificial rupture of the membranes (51%) and were given oxytocin for labor induction or augmentation (51%). Antepartum complications were limited; few patients were diagnosed with intramniotic infection (5%)

and few neonates were admitted to the neonatal intensive care unit (1%). Postpartum complications were uncommon with few patients experiencing postpartum hemorrhage (6%) or retained their placenta requiring curettage (1%).

The majority of patients (84%) stated that they would use a birth plan if they were to deliver another baby. Mean communication, satisfaction, and trust scores before and after delivery are presented in Table 3. We found statistically significant increases in scores for satisfaction, communication, and trust

after delivery though the increases were modest (increase of 1.4 for satisfaction score, 0.7 for communication, 0.5 for trust).

To determine whether certain demographic groups might benefit more from a standardized birth plan, we performed stratified analyses based on patient characteristics (parity, race, age, education). Increases in communication and trust scores were minimal for all groups while satisfaction scores increased more for parous women, women aged 26 to 35, and those with higher levels of education (Table 4, Table 5, Table 6).

Characteristic	Number (%) N=81
<b>Race*</b>	
Native Hawaiian/Pacific Islander	57 (70)
Asian	17 (21)
White	16 (20)
Native American	1 (1)
Hispanic/Latina	4 (5)
Black	1 (1)
Declined to answer	1 (1)
<b>Age</b>	
25 years or less	34 (42)
26-35 years	36 (44)
36 years or more	11 (14)
<b>Gravidity</b>	
1	16 (20)
2-3	37 (46)
4 or more	10 (12)
No response	18 (22)
<b>Parity</b>	
0	18 (22)
1-2	39 (48)
3 or more	23 (28)

Characteristic	Number (%) N=81
<b>Education</b>	
Grade school	3 (4)
Some high school	16 (20)
High school degree	20 (25)
Some college	24 (30)
College degree	15 (19)
Advanced degree	3 (4)
<b>Previous use of a birth plan</b>	
Yes	8 (10)
No	73 (90)
<b>Type of Labor</b>	
Spontaneous	20 (25)
Augmented	39 (48)
Induced	21 (26)
Unable to determine	1 (1)
<b>Obstetric Procedures</b>	
Cervical Ripening**	6 (7)
Use of oxytocin	41 (51)
Artificial rupture of membrane	41 (51)
Epidural	63 (79)
<b>Type of Delivery</b>	
Caesarean section	17 (21)
Spontaneous Vaginal Delivery	61 (75)
Forceps Assisted Vaginal Delivery	3 (4)

\*Respondents could indicate more than one race so the same individual could be counted in more than 1 category. \*\*Use of misoprotol, cervidil or foley balloon for cervical ripening

	Before Delivery Mean (SD)	Range min, max	After Delivery Mean (SD)	Range min, max	P-value
Communication*	8.0 (2.2)	0.0, 10.0	8.7 (2.1)	0.2, 10.0	<.01
Satisfaction*	7.4 (2.3)	0.0, 10.0	8.8 (1.8)	0.6, 10.0	.02
Trust*	8.7 (2.0)	1.5, 10.0	9.2 (1.2)	5.0, 10.0	.04

\* Compared using a paired t-test

Characteristic	Before delivery Mean (SD)	After delivery Mean (SD)	P-value
<b>Parity*</b>			
Nulliparous (n=18)	7.6 (2.1)	8.5 (2.2)	.11
Parous (n=63)	8.2 (2.2)	8.7 (2.2)	.13
<b>Race**</b>			
Native Hawaiian (n=57)	8.3 (1.9)	8.7 (2.2)	.29
Asian (n=17)	8.1 (2.2)	9.2 (1.4)	.10
White (n=16)	8.4 (1.7)	7.9 (2.8)	.55
<b>Education**</b>			
High school or less (n=39)	8.1 (2.3)	8.7 (2.2)	.08
Some college (n=24)	8.3 (2.0)	8.5 (2.4)	.72
College degree (n=18)	7.7 (2.2)	8.7 (1.8)	.13
<b>Age**</b>			
25 years or less (n=34)	8.3 (2.5)	8.7 (2.3)	.34
26-35 years (n=36)	7.8 (2.0)	8.6 (2.2)	.10
36 years or more (n=11)	7.9 (1.7)	8.4 (1.3)	.36

\* Compared using a paired t-test. \*\*Compared using ANOVA.

Characteristic	Before delivery Mean (SD)	After delivery Mean (SD)	P-value
<b>Parity*</b>			
Nulliparous (n=18)	7.7 (1.8)	8.9 (1.7)	.06
Parous (n=63)	7.3 (2.5)	8.8 (1.9)	<.01
<b>Race**</b>			
Native Hawaiian (n=57)	7.3 (2.6)	8.8 (1.7)	<.01
Asian (n=17)	7.5 (1.9)	9.0 (2.3)	.08
White (n=16)	7.2 (1.5)	9.0 (1.7)	<.01
<b>Education**</b>			
High school or less (n=39)	7.5 (2.6)	8.6 (2.2)	.05
Some college (n=24)	7.3 (2.2)	9.1 (1.1)	<.01
College degree (n=18)	7.2 (1.9)	8.9 (1.6)	<.01
<b>Age**</b>			
25 years or less (n=34)	7.6 (2.4)	9.0 (1.6)	<.01
26-35 years (n=36)	7.1 (2.4)	8.7 (2.1)	<.01
36 years or more (n=11)	7.6 (1.9)	8.6 (1.3)	.04

\* Compared using a paired t-test. \*\*Compared using ANOVA.

Characteristic	Before delivery Mean (SD)	After delivery Mean (SD)	P-value
<b>Parity*</b>			
Nulliparous (n=18)	8.3 (2.1)	9.2 (1.0)	.09
Parous (n=63)	8.7 (2.0)	9.2 (1.2)	.09
<b>Race**</b>			
Native Hawaiian (n=57)	8.8 (2.0)	9.2 (1.1)	.15
Asian (n=17)	8.8 (1.9)	9.4 (0.8)	.15
White (n=16)	8.8 (1.7)	9.0 (1.1)	.64
<b>Education**</b>			
High school or less (n=39)	9.1 (1.5)	9.4 (1.0)	.31
Some college (n=24)	8.3 (2.4)	8.8 (1.4)	.30
College degree (n=18)	8.2 (2.4)	9.3 (1.0)	.03
<b>Age**</b>			
25 years or less (n=34)	9.0 (1.8)	9.4 (1.0)	.21
26-35 years (n=36)	8.5 (2.2)	9.2 (1.0)	.03
36 years or more (n=11)	8.1 (1.8)	8.3 (1.7)	.80

\* Compared using a paired t-test. \*\*Compared using ANOVA.

## Discussion

The birth plan was developed as a way for pregnant women to consider and prepare for the birth process. A birth plan can be a communication tool as it prompts discussion between women and their providers about desires, expectations, concerns, and misperceptions. Prior to this project, few women at the current clinic brought in a patient-initiated birth plan. We wanted to introduce the concept of a birth plan to our patients but thought it would be impractical to encourage each of them to find their own birth plan templates. We considered the introduction of a standardized birth plan to be a convenient way to discuss labor and delivery options that were available at our facility.

We conducted this quality improvement project in a group of racially diverse women. Women reported high communication (mean 8.7, SD 2.1), satisfaction (8.8, 1.8), and trust (9.2, 1.2) scores following delivery suggesting a positive birth experience. Though a comparison of scores before and after delivery revealed statistically significant increases, they were modest and may not have been clinically meaningful. Furthermore, the high pre-delivery scores make it difficult to show a meaningful increase. It is possible that patients who filled out their survey in the doctor's office could have felt pressured to provide a higher score than they would have had they responded at home, despite receiving reassurance that their answers to the surveys would not affect their medical care. Nonetheless, certain groups of women had higher increases in satisfaction scores following delivery while increases in communication and trust scores were minimal for most groups.

Birth plans can range in length and complexity. Many online birth plans are several pages in length, which can inhibit hospital staff from closely reviewing the document. Online birth plans may not address what is or is not available at a particular hospital, which may lead to unrealistic expectations on the part of the patient. Our birth plan was simple, two pages in length, took less than 10 minutes to complete, and included options that could be accommodated at our facility. Other than including an option for an epidural to manage pain, we purposefully did not include medical interventions such as the avoidance of artificial rupture of membranes or induction of labor. Online birth plans often discuss medical interventions and use phrases such as “unless absolutely or medically necessary.” This creates disconnect between providers and patients as providers usually believe the recommendations they make are medically necessary even if they are not evidence-based.

Of note, we did not have a comparison group in this study. Though we can conclude that scores were high following delivery, we are unable to determine if satisfaction, trust, and communication would have been higher or lower if the standardized birth plan had not been used. We are also unable to determine if the increases noted in communication, satisfaction, and trust were due to implementation of the standardized birth plan. A feeling of satisfaction, especially, is more likely related to the delivery itself rather than use of a birth plan.

Despite these limitations, we provide a description of a standardized birth plan that was associated with a positive birth experience in terms of communication, trust, and satisfaction. Although we cannot conclude that the increase in communication, satisfaction, and trust scores were attributable to the birth plan, we found most patients (84%) reported they would use a birth plan with a subsequent delivery suggesting most patients found the birth plan to have a positive effect.

## Conflict of Interest

None of the authors identify a conflict of interest.

## Disclosure Statement

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## References

1. Bailey JM, Crane P, Nugent CE. Childbirth education and birth plans. *Obstetrics & Gynecology Clinics of North America*. 2008;35(3):497-509.
2. Berg M, Lundgren I, Lindmark G. Childbirth experience in women at high risk: Is it improved by use of a birth plan? *The Journal of Perinatal Education*. 2003;12(2):1-15.
3. Green JM, Baston HA. Feeling in control during labor: concepts, correlates, and consequences. *Birth*. 2003;30(4):235-47.
4. Waldenstrom U, Borg IM, Olsson B, Sköld M, Wall S. The childbirth experience: a study of 295 new mothers. *Birth*. 1996;23(3):144-53.
5. Brown SJ, Lumley J. Communication and decision-making in labour: do birth plans make a difference? *Health Expectations*. 1998;1(2):106-116.
6. Hadar E, Raban O, Gal B, Yogev Y, Melamed N. Obstetrical outcome in women with self-prepared birth plan. *Journal of Maternal-Fetal and Neonatal Medicine*. 2012;25(10):2055-2057.
7. Yam EA, Grossman AA, Goldman LA, Garcia SG. Introducing birth plans in Mexico: an exploratory study in a hospital serving low-income Mexicans. *Birth*. 2007;34(1):42-48.
8. Kaneshiro B, Grant R, Sueda A. Expert opinion vs. patient perception of obstetrical outcomes in laboring women with birth plans. *Journal of Reproductive Medicine*. 2010;55(1-2):31-35.
9. Brown S, Lumley J. Satisfaction with care in labor and birth: a survey of 790 Australian women. *Birth*. 1994;21(1):4-13.