

## Satisfaction With Pregnancy and Newborn Care: Development and Results of a Survey in a Health Maintenance Organization

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### **Abstract**

**Objective:** To measure patient satisfaction with pregnancy and newborn care.

**Study Design:** To develop our survey, we reviewed domains of care that had been identified by national groups working to develop measures of satisfaction with care. Within these domains of care, items pertinent to pregnancy and newborn care were written, reviewed, and pilot tested in focus groups of women who had recently delivered a baby. A 24-item survey instrument was the result of this process.

**Patients and Methods:** We sent our survey to 2337 female members of the Southern California Kaiser Permanente Medical Care Program approximately 8 weeks after they had delivered a baby. The demographic and clinical characteristics of the respondents were compared with those of the nonrespondents.

**Results:** A total of 1017 women (44%) completed and returned the survey. Eighty-eight percent of the women who responded were very or somewhat satisfied with the care they received during their pregnancy and the newborn period. Women who responded differed from those who did not respond on infant birthweight, maternal age and education, and other variables. The results of our survey were forwarded to local quality managers and physicians.

**Conclusion:** Satisfaction with care is an important measure of quality of care. Many changes in the delivery system were made in response to the information provided by survey respondents, including offering alternative appointment times and scheduling postpartum appointments before hospital discharge. Our survey instrument, which assesses satisfaction with pregnancy and newborn care, might be useful for other health maintenance organizations for identifying areas where improvement in care is needed.

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The routine measurement and monitoring of quality of care are important goals in the delivery of healthcare services. Patient-centered outcomes, including patient satisfaction with care, are increasingly recognized as important measures of quality. Measures of satisfaction with care are included as part of the performance measurement set for the National Committee for Quality Assurance's (NCQA) measuring and reporting initiative, the Health Plan Employer Data and Information Set (HEDIS), and the Foundation for Accountability in Health Care (FACCT). FACCT in particular has focused on measures of quality that are relevant to consumers of healthcare services. This organization recommends evaluation of experience and satisfaction with care as one of the explicit dimensions of quality of care that should be measured for each condition being assessed.

In 1993, Kaiser Permanente Southern California initiated a program to improve the quality of healthcare that included identifying a set of key goals,

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called strategic clinical goals. For each of these goals, several measures of performance were defined. One of these strategic clinical goals was to improve the outcome of pregnancy, and one of the measures of performance for this goal was patient satisfaction with pregnancy and newborn care.

To assess satisfaction with pregnancy and newborn care, we developed a survey to be mailed to women who had recently delivered a baby. We also explored whether nonresponse and delayed response to the survey affected the findings of our study, similar to an analysis undertaken by Holt et al.<sup>1</sup> Although the results of our survey are specific to our managed care setting and varied widely by medical center within our southern California region, our experience with survey development and response rate may be generalizable.

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...METHODS ...

We attempted to identify existing surveys that measured satisfaction with pregnancy and newborn care,<sup>2-4</sup> as well as satisfaction with healthcare in general,<sup>5-8</sup> by reviewing the medical literature. Our literature review revealed no published short multi-item surveys measuring satisfaction with pregnancy and newborn care, necessitating that we design our own survey. Since our initial literature review, several studies looking at different aspects of satisfaction with maternity and newborn care have been published.<sup>1, 9-11</sup>

We began developing our survey questionnaire by identifying domains of satisfaction based on a literature review that included an approach to instrument development used by the Group Health Association of America, now American Association of Health Plans, for their consumer satisfaction survey. This organization identified 9 "domains" of satisfaction—access, availability, and convenience; choice and continuity; communication; financial arrangements; interpersonal care; outcomes; technical quality; time spent with the physician; and overall satisfaction.<sup>8</sup> We drafted items relevant to pregnancy and newborn care for each of these domains except for financial arrangements, which do not vary for our members. We adapted the wording of each item from the wording of items in existing instruments, making adjustments for both the subject area being studied and subsequent feedback from practitioners and patient focus groups.

The prototype instrument was reviewed by internal experts on instrument design and revised based on their feedback. The revised prototype was dis-

tributed to the chief of obstetrics and gynecology, the regional perinatal nurse coordinator, and nurse administrators in 2 obstetrics and gynecology departments. After we revised the survey based on feedback from these practitioners, the instrument was reviewed in a focus group of women who had recently delivered infants at a Kaiser Permanente Southern California medical center.

The focus group was conducted by a nurse practitioner at one of the Kaiser Permanente medical centers. Ten women of different ages and ethnic backgrounds agreed to participate when contacted and 7 attended the group. The duration of the focus group was 1.5 hours, and each woman received a \$20 gift certificate for participating. The focus group included white, Asian, and Hispanic women aged 22 to 35 years. Five of the 7 women were primiparous and 2 were multiparous. The draft survey instrument, which included 18 items, was reviewed item by item to determine whether the item was worded in a way that would obtain the information we were seeking. Changes were made to several items in the draft of the survey. For example, women wanted to be able to give feedback on the care provided by their physicians and midwives separately from other medical staff, and they wanted the survey to distinguish explanations of pain-control from choice of pain control options.

The final survey, which included revisions based on the feedback from the focus group participants, had 24 items. Twenty-three items addressed issues directly related to pregnancy and newborn care and 1 item asked about overall satisfaction with medical care at Kaiser Permanente.\*

We did not include demographic questions in the survey because survey responses could be linked to computer-stored demographic and clinical information abstracted from the birth certificate that were available in our perinatal services system database using the member's medical record number. Age, gravidity, parity, maternal education, infant birthweight, month when prenatal care was initiated, and number of prenatal visits were linked to these data using the mother's medical record number. This information is abstracted from the birth certificate. We have validated these variables from the perinatal services system database in the past with information abstracted from medical records and found them to be valid. Maternal ethnicity is not coded reliably in this database and was not included in our analysis.

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\*For a complete copy of the survey, please contact the author.

A mailed survey was chosen over other survey methods, such as phone or in-person interviews, because mailed surveys are the recommended method for assessing patient satisfaction. Responses to telephone surveys tend to be more positive than those to surveys delivered by mail.<sup>12</sup> We mailed English and Spanish versions of the survey on March 17, 1997, to all women who had a live singleton birth in January 1997. Mothers of twins, infants who died, or infants with an unknown discharge disposition were excluded from the study sample. The surveys were timed to arrive when the respondents were, on average, 8 weeks postpartum. We chose to send out surveys soon after delivery when the addresses we had for the new mothers were the most reliable. We waited until all the deliveries and birth outcomes were entered into the computer so we could exclude multiple births, unknown pregnancy outcomes, and newborn deaths before mailing the survey.

A cover letter signed by both the Director of Research and Evaluation and the Director of Quality Assessment and Improvement was included in the mailing to introduce the survey. Women were informed that their decision to participate in the survey was voluntary and their medical care would not be affected by their decision. No monetary incentive was offered for completing and returning the survey.

The original mailing was sent to 2337 women. A business-reply return envelope was provided so the women could return the survey at no cost to themselves. After excluding women with invalid addresses, a second mailing was sent after 3 weeks to women who did not respond to the first survey mailing. The second mailing included copies of the survey in English and Spanish and a reminder letter that stressed that the survey was an important tool to be used to make improvements in clinical care. Including copies of the survey with the second mailing instead of just sending a reminder letter has been shown to improve the response to a second mailing.<sup>13</sup>

### Statistical Analysis

We used Pearson's product moment correlation coefficient to calculate the correlation between each of the survey response items and the item assessing overall satisfaction with pregnancy and newborn care.<sup>14</sup> After excluding women whose surveys were returned undelivered, we compared the demographic and clinical variables of respondents with those of nonrespondents. The statistical significance of differences between the respondents and nonrespondents was assessed using the chi-square statistic for

categorical variables and the *t* test for continuous variables. A difference was considered statistically significant if the *P* value was less than .05. We examined the relationship between overall satisfaction with pregnancy and newborn care and demographic variables that were different between respondents and nonrespondents using regression analysis to assess the possibility of response bias. The dependent variable for the regression analysis was the response to the question, "How satisfied were you with the overall quality of care during pregnancy and delivery?" The independent variables, including several survey questions, were included in the model to determine whether clinical and demographic characteristics explained more of the variance in the overall satisfaction measure than did women's responses to individual survey items.

We used one-way analysis of variance to compare the responses of women who responded to the first mailing with those who responded to the second mailing to determine whether there were any differences between clinical and demographic variables. We also compared the responses to the survey items given by these 2 groups of women.

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## ...RESULTS...

Of the 2337 women surveyed, 1017 (44%) completed and returned the survey (Figure 1). Five hundred fifty-one women responded to the first mailing and 466 responded to the second mailing; 105 surveys (4.5%) were returned by the post office as undeliverable. Ten percent of the respondents completed the survey in Spanish. The mean age of the respondents was 30 years, and they had, on average, 2 years of college education. The mean birthweight of their infants was 3376 grams, and the mean number of previous births was one.

### Survey Item Response

An abbreviated version of the survey items and the distribution of responses to each item are summarized in Table 1. The percentage of respondents who were very satisfied or somewhat satisfied with the overall quality of pregnancy and newborn care (item 22) was high (88%). When women were asked if they would refer a friend or relative to the Kaiser Permanente Medical Care Program if they were pregnant (item 23), 90% responded affirmatively. The percentage of responses in the 2 most-favorable categories (excellent and very good, or very satisfied and somewhat satisfied) ranged from a low of 50% for

the availability of times when office visits could be scheduled (item 2) to 85% for the skill, experience, and training of the person who delivered the infant (item 13).

**Correlation With Overall Satisfaction**

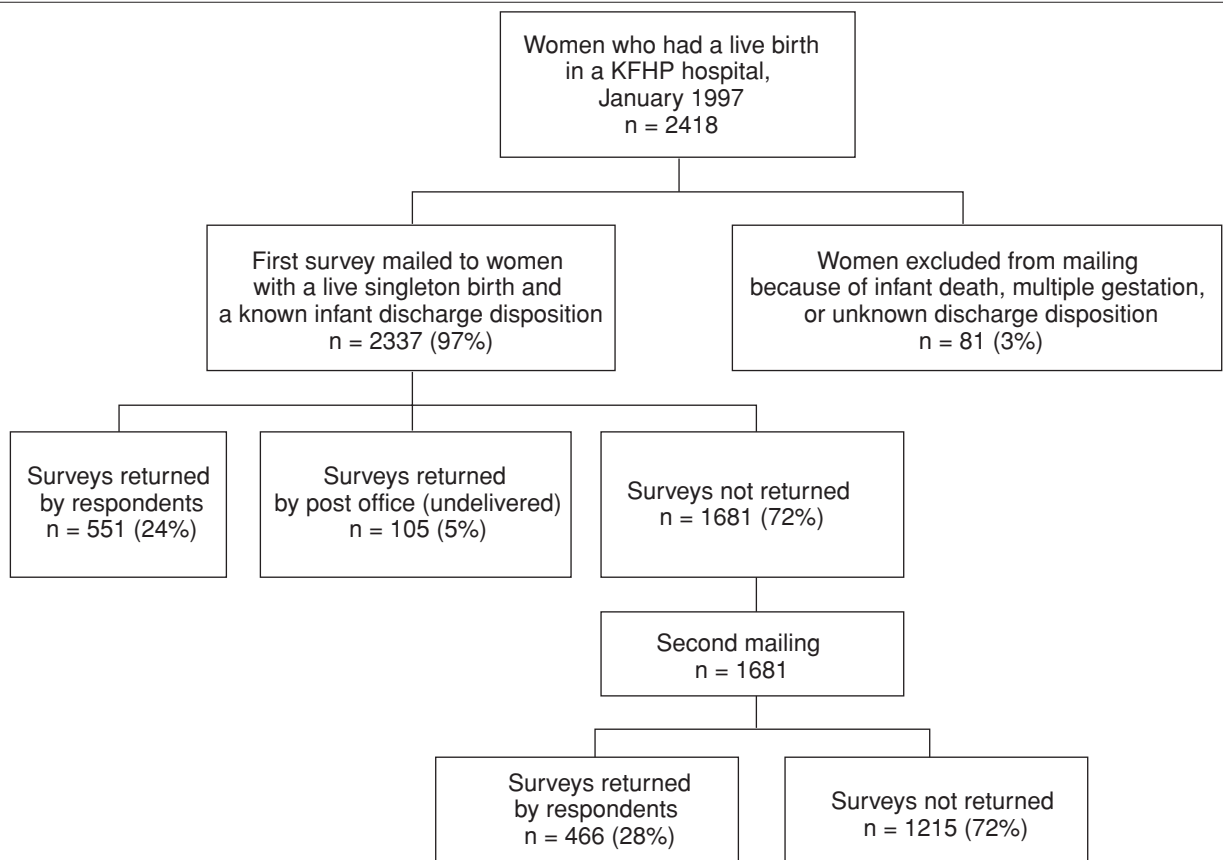
The correlation between responses for the individual items about pregnancy and newborn care with overall satisfaction with pregnancy and newborn care ranged from .02 for item 20 (length of stay) to .57 for item 19 (ability to choose their provider for hospitalization and delivery) (Table 1). The item that measured overall satisfaction with the Kaiser Permanente Medical Care Program (item 24)

was highly correlated (.65) with satisfaction with pregnancy and newborn care.

**Respondents Versus Nonrespondents**

Compared with nonrespondents, survey respondents were significantly older, had a higher mean level of education, started prenatal care earlier, and had more prenatal visits ( $P < .001$ ) (Table 2). Respondents were also significantly more likely to be primiparous ( $P < .05$ ). When the clinical and demographic variables that were significantly associated with response were entered into a stepwise regression model with the survey items (items 1-19, 21) using overall satisfaction with prenatal and post-

**Figure 1.** Flow Chart of Sample Selection and Response Rates for the First and Second Mailing



RFHP = Kaiser Foundation Health Plan.  
Percentages may not add up to 100 due to rounding.

**Table 1.** Responses to Survey Items and Correlation Between Response to Satisfaction With Pregnancy and Newborn Care (Item 22) and Other Survey Items

Item	1		2		3		4		5		Correlation Coefficient
	N	%	N	%	N	%	N	%	N	%	
1. Ease making appointments by phone*	317	(31)	308	(31)	220	(22)	113	(11)	51	(5)	.31
2. Availability of times for office visits*	201	(20)	300	(30)	276	(27)	162	(16)	70	(7)	.35
3. Availability of phone information and advice*	267	(27)	308	(31)	247	(25)	113	(11)	53	(5)	.39
4. Ease of seeing the same provider*	334	(33)	238	(24)	186	(18)	141	(14)	110	(11)	.43
5. Skill of physician, midwife, or nurse practitioner*	541	(54)	276	(28)	127	(13)	42	(4)	17	(2)	.55
6. Skill of nurses and other medical staff*	373	(37)	362	(36)	191	(19)	54	(5)	20	(2)	.48
7. Explanations of tests and procedures*	363	(36)	330	(33)	202	(20)	73	(7)	38	(4)	.49
8. Advice you received to stay healthy*	358	(36)	320	(32)	211	(21)	79	(8)	34	(3)	.47
9. Explanations of what to expect during delivery and immediately after birth*	300	(30)	253	(25)	224	(22)	146	(15)	79	(8)	.51
10. Explanation of pain-control options*	301	(30)	240	(24)	217	(22)	137	(14)	99	(10)	.46
11. Support of your choice for pain control*	399	(41)	234	(24)	160	(16)	100	(10)	85	(9)	.48
12. Skill of the labor nurse birth attendant*	537	(54)	238	(24)	119	(12)	51	(5)	47	(5)	.50
13. Skill of the person who delivered baby*	654	(65)	203	(20)	90	(9)	34	(3)	24	(2)	.46
14. Friendliness and courtesy of physician or midwife*	652	(65)	193	(19)	86	(9)	43	(4)	28	(3)	.43
15. Friendliness and courtesy of the other medical staff*	517	(52)	241	(24)	134	(13)	60	(6)	48	(5)	.54
16. Care your new baby received*	515	(51)	270	(27)	139	(14)	56	(6)	30	(3)	.48
17. Information about how to take care of your baby at home*	405	(40)	279	(28)	178	(18)	80	(8)	64	(6)	.46
18. Care in the hospital after delivery*	409	(41)	259	(26)	169	(17)	106	(11)	64	(6)	.51
19. Satisfaction with ability to choose the type of provider for delivery <sup>†</sup>	453	(47)	197	(20)	172	(18)	77	(8)	67	(7)	.57
20. Length of stay after delivery <sup>‡</sup>	301	(30)	506	(50)	131	(13)	72	(7)	NA	NA	.02
21. Satisfaction with length of stay after delivery <sup>‡</sup>	542	(54)	195	(19)	92	(9)	101	(10)	78	(8)	.40
22. Satisfaction with overall quality of care during pregnancy and delivery <sup>†</sup>	602	(60)	276	(28)	50	(5)	46	(5)	23	(2)	1.00
23. Would you recommend the Kaiser Permanente Medical Care Program to family or friends if they were pregnant? <sup>§</sup>	856	(90)	98	(10)	NA	NA	NA	NA	NA	NA	.64
24. All things considered, how satisfied are you with Kaiser Permanente Medical Care Program in general? <sup>†</sup>	572	(58)	300	(30)	60	(6)	44	(4)	19	(2)	.65

NA = not applicable.

\*1 = excellent, 2 = very good, 3 = good, 4 = fair, 5 = poor.

<sup>†</sup>1 = very satisfied, 2 = somewhat satisfied, 3 = neither satisfied nor dissatisfied, 4 = somewhat dissatisfied, 5 = very dissatisfied.

<sup>‡</sup>1 = less than 24 hours (less than 1 day), 2 = 24 - 48 hours (2 days), 3 = 49-72 hours (3 days), 4 = more than 72 hours (more than 3 days).

<sup>§</sup>1 = yes, 2 = no.

partum care (item 22) as the outcome variable, the only demographic or clinical variable associated with satisfaction with pregnancy and newborn care was the number of prenatal visits. The number of prenatal visits was negatively associated with satisfaction (eg, fewer prenatal visits were associated with greater patient satisfaction.) Surveys returned by the post office were not included in the nonrespondent analysis because they represented a small subset (5%) of the sample.

### First Versus Second Mailing

No differences were found in demographic and clinical variables when women who responded to the first mailing of the survey (n = 551) were compared with those who responded to the second mailing of the survey (n = 466). When we compared the responses to the first and second wave of the survey, we found that women who responded to the second mailing provided similar responses on all but 2 of the satisfaction items. Women who responded to the second mailing rated the skill of their prenatal care provider (item 5) and their overall satisfaction with labor and delivery care (item 22) lower than did women who responded to the first wave of the survey ( $P < .05$ ). This represents a mean score of 4.2 on the first mailing and 4.0 on the second mailing for item 5 and a mean score of 4.3

on the first mailing and 4.1 on the second mailing for item 22.

### Dissemination of Results

The results of our survey were analyzed according to geographically defined medical service units. These results were disseminated in report form to the chiefs of obstetrics and gynecology and to the heads of quality assurance in the 10 Kaiser Permanente medical centers in southern California. A formal presentation based on the results was made to all of the chiefs of the departments of obstetrics and gynecology and, at the request of one of the chiefs of service, to the physicians in one of the medical centers that had the lowest overall rating of satisfaction. Several other medical centers asked for and received additional information about how their patients responded in comparison with patients who received their care at other medical centers. One department of anesthesiology asked for and received a report with information on the 2 pain management items on the survey.

### ...DISCUSSION ...

The response to our survey of patient satisfaction with pregnancy and newborn care was lower than that of similar surveys. Other surveys have reported response rates of 52%<sup>2</sup> to 76%.<sup>1</sup> Our response rate was 44%. Ten percent of the women who responded completed the survey in Spanish. This result is consistent with that from an ongoing survey of more than 8000 women at the time of their first prenatal visit at 4 Kaiser Permanente medical offices. Of these women, 12% have completed the survey in Spanish.

All the women in our patient sample were mailed the survey about 2 months postpartum. In a recent review article, Bramadat and Driedger<sup>4</sup> reported that measures of satisfaction were stable in the first few months after pregnancy. Ratings can change over time, however, and these changes may be asso-

**Table 2.** Demographic and Clinical Characteristics of Respondents and Nonrespondents

Characteristic	Respondents (n = 1017)	Nonrespondents (n = 1215)	P*
Birth weight (gm) <sup>†</sup>	3376 (± 575)	3322 (± 612)	.033
Maternal age (y) <sup>†</sup>	29.9 (± 6.0)	28.5 (± 6.3)	< .001
Maternal education (y) <sup>†</sup>	13.6 (± 2.8)	12.7 (± 2.7)	< .001
Month onset of prenatal care <sup>†</sup>	2.6 (± 1.3)	2.8 (± 1.5)	< .001
Number of prenatal visits <sup>†</sup>	11.0 (± 3.8)	10.3 (± 3.0)	< .001
Primigravida	31.1%	29.5%	.439
Primipara	47.8%	41.7%	.004

\*105 women whose surveys were returned undelivered were excluded from this analysis.

<sup>†</sup>Data are mean ± SD.

ciated with the method of delivery and subsequent pregnancies. Clearly, there is no single time when measuring satisfaction is "correct."

Most of the women who responded to the survey were satisfied or very satisfied with their prenatal care. The items most strongly associated with overall satisfaction with prenatal and postpartum care were the ability to choose their provider for hospitalization and delivery and the skill, experience, and training of the physician, midwife, or nurse practitioner who saw them during prenatal care. All of the survey items except length of hospital stay were associated with satisfaction.

Demographic and clinical variables differed between respondents and nonrespondents. When compared with nonrespondents, the women who responded were older, had more education, had more prenatal visits, had larger babies, and were more likely to be having a first baby. Month of onset of prenatal care was statistically but not clinically different between the 2 groups. These demographic and clinical variables were not related to overall satisfaction with pregnancy and newborn care when individual survey items were included in the model, suggesting that the differential response rate by women with different demographic and clinical attributes did not bias our results. We found that women who responded to the second survey mailing rated their satisfaction with prenatal and postdelivery care and the skill of their prenatal provider lower than did women who responded to the first mailing. Holt et al<sup>1</sup>, however, found no differences in responses to their unprompted (first mailing) and prompted (second mailing) surveys.

Responses to individual items on our survey suggested some specific areas for improvement, and this information was useful to our clinical groups. Our survey results were widely disseminated within our organization and were the impetus for many changes in the delivery of pregnancy and newborn care. Based on the results of the survey, several medical centers made changes to improve patient satisfaction. These changes, which were identified and implemented by chiefs of service, nursing staff, and administrators in the departments of obstetrics and gynecology, included increasing the number of appointments available at times other than regular working hours, having clinic staff assist patients in scheduling their prenatal visits with the same provider, making sure that each patient being cared for by a midwife has contact with the physician on

call while in labor so they know a physician is available if needed, scheduling postpartum follow-up appointments before the patient is discharged from the hospital, and offering a third-trimester class taught by physicians and midwives to discuss issues related to childbirth. We plan to repeat our survey in 1999 to assess changes in satisfaction with care within and between medical centers and to identify other opportunities for improvement.

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