

# Quality of Free Delivery Care among Poor Mothers in Gujarat, India: A Community-Based Study

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## Abstract

**Background:** Government of Gujarat introduced a public–private partnership scheme called the Chiranjeevi Yojana (CY) in 2005, to improve access to delivery care for poor women. Till date, more than 1 million deliveries have been conducted under CY. Although CY has been evaluated, this is the only study using primary data to evaluate the quality of care. **Objective:** The objective of this study was to (i) determine the quality of free delivery care and (ii) examine the differences in the quality of care between public sector facilities and accredited private sector facilities. **Methodology:** The community-based survey was conducted in three districts of Indian state of Gujarat. Trained data collectors used pretested questionnaire in vernacular language between 7<sup>th</sup> and 10<sup>th</sup> days of delivery. Overall surveyed mothers were 3858 in the prospective study; analytic sample was 1616 mothers. Statistical analysis includes Chi-square test using IBM SPSS version 20. **Results:** Quality of care was perceived to be good in both public sector and accredited private sector. When free delivery care was compared between two sectors, private sector was perceived to have better quality of care. This difference was statistically significant for indicators, such as infrastructure, allowed to eat/change positions, application of pressure on abdomen, and weighing of baby. **Conclusion:** The study highlights the need for engaging private sector to improve access to delivery care for poor women. Quality assurance programs in Gujarat need to address respectful care issues in the public sector. Future research should include qualitative study to understand the drivers of quality delivery care.

**Keywords:** Demand-side financing, maternal health care, private health sector, public–private partnership, quality of care

## INTRODUCTION

Childbirth is considered a life-changing event for most women and families worldwide, but childbirth is also associated with great risks and even death for mother or child. To improve maternal health-care utilization, the government of India has launched demand-side financing schemes such as Janani Suraksha Yojana (JSY), Janani-Shishu Suraksha Karyakram (JSSK) for poor, rural, and tribal women. State governments such as Government of Gujarat have also introduced innovative public–private partnership scheme, Chiranjeevi Yojana (CY) to improve access to institutional deliveries and access to emergency obstetric care (EmOC). Under the scheme, private obstetricians are contracted to offer delivery services to vulnerable population with the packages of 100 deliveries, and they are reimbursed a fixed rate for deliveries carried out by them. As a result of such government initiatives, there is an increase in the number of women giving birth in hospitals and health centers. Over the last decade, the proportion increased nationwide significantly from 39%

to 79%<sup>[1]</sup> and also significant change in Gujarat from 53% in 2005–2006 to 89% in 2015–2016.<sup>[2]</sup>

Despite exponential increase in the institutional deliveries, the maternal mortality ratio (MMR) of India and also of Gujarat has not declined at the proportionate level and remains at 167 and 112 per 100,000 live births, respectively.<sup>[3]</sup> Some studies also show limited influence of high proportion of institutional births on MMR.<sup>[4–6]</sup> One of the reasons of this failure is type of services provided at the institutions including EmOC and most important, the quality of care of these services are provided to pregnant women in/from any health facilities.

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Numerous studies have shown that the quality of care received by mothers and babies, and particularly marginalized groups are poor in many developing countries.<sup>[7,8]</sup> Even the choice of the place of delivery is determined not only by patients' income or cost for services but it is also influenced by the perceived quality of services of an institution. Furthermore, as per a survey report, more than one-fourth women in Gujarat reported reasons for not going to health facilities for delivery are poor quality services and perceived better care at home.<sup>[9]</sup> There have been few mixed methods or qualitative studies that have assessed the quality of care or reasons for delivery site preferences at public versus private institutions in India.<sup>[10-12]</sup> In Gujarat, CY has been in existence since a decade, but there is no study to measure quality of care provided by providers or their staff to the mothers.<sup>[13,14]</sup>

The aim of this study is to determine the quality of free delivery care in public sector facilities and CY facilities. The study also desires to examine differences between the quality of free delivery care between these facilities for performance-based financing scheme.

## METHODOLOGY

This study is a part of large study Maternal Health India (MATIND).<sup>[13]</sup> Under MATIND study, data were collected in selected districts of Gujarat, namely Dahod, Sabarkantha, and Surendranagar from July 2013 to November 2014. All pregnant women of the reproductive age were recruited from the villages for this prospective community-based study. Pretested questionnaires were used in vernacular language for data collection at different three stages during the pregnancy, within 1 week of delivery and after 1 month of delivery. The questionnaire was validated in the local language using field test. The questionnaires covered information about sociodemographic details, standard of living index, obstetric history and antenatal care, details of the last delivery (which includes place, attendant, type, and outcome of the delivery), transportation for delivery, maternal health interventions, perception of quality of care, and expenses for the delivery. For quality control, district coordinator accompanied data collectors and checked filled questionnaires in the field itself every day. Any discrepancies were resolved by calling the mother or revisiting the same household within a week.

To check the quality of free delivery care among the selected population, mothers were contacted between 7<sup>th</sup> and 10<sup>th</sup> days of delivery. Figure 1 shows the selection of sample from total recruited mothers from this prospective study.

For the quality of care, a framework of the evaluation of quality of care in maternity services as per Louise A Hulton is used.<sup>[15]</sup> There are two types of quality of care: provision of care and experience of care. For this study, we have chosen only indicators of experience of care. As per Hulton's framework, human and physical resource, cognition, respect, dignity and equity, and emotional support are indicators of the experience of care.

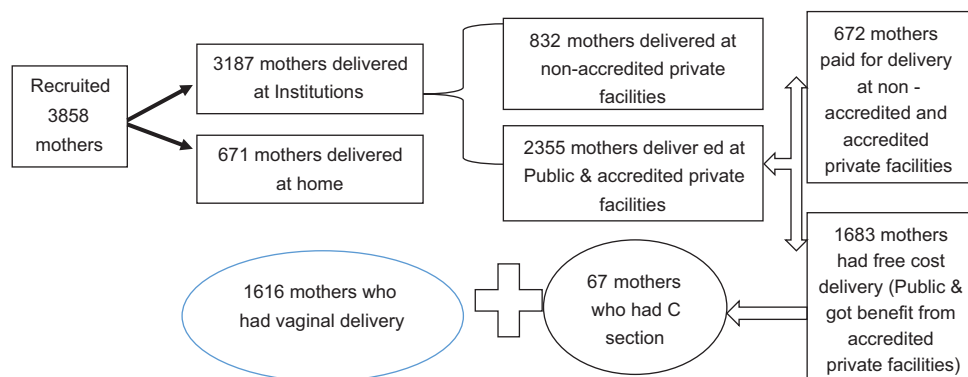
## Analysis of the data

Data were summarized using the descriptive analysis and Chi-square test. The statistical significance level was considered  $P < 0.05$ . IBM SPSS version 20 statistical software was used.

## RESULTS

A total of 1616 mothers were selected for this study. About 51% of women delivered in public facilities and rest in CY facilities.

Almost all of the women had ration card and among these 75% were below poverty line (BPL) card or Antyoday Anna Yojana card. Nearly 84% of families were BPL family having one the proofs of BPL. About half of the family's income was <Rs. 5000 and while 44% family's income was between Rs. 5000 and Rs. 10,000. About half of the mothers belonged to other backward caste (54%) and followed by ST caste (38%). Most of the mothers (89%) were aged between 20 and 29 years; 40% of the mothers were not formally educated. Half of the mothers (52%) had more than three antenatal checkups and most of them (66%) done at public facilities. Private facilities were also used for antenatal checkups in 55% of mothers. Only 12% of mothers had any complications during their pregnancy. More than half of the deliveries were assisted by nurse/auxiliary nurse midwife lady health visitor (57%) while gynecologists conducted 22% deliveries. General doctors and unqualified personnel delivered 10.5% of mothers each. Almost all of the mothers had live births (98%). Perinatal mortality rate was 25.3/1000 births in the study population.



**Figure 1:** Selection of sample from total recruited mothers from the prospective study

**Table 1: Differences in statistics of demographic and socioeconomic variables between public sector and accredited private sector**

Characteristics of the mother	Government (n=821)	Accredited private facilities (n=795)	P
Caste			
SC	9.5	6.3	0.000
OBC	66.1	41.0	
ST	23.9	52.2	
General	0.5	0.5	
Type of ration card			
No card	1.2	0.5	0.000
APL	35.2	15.8	
BPL	62.6	81.4	
AAY	1.0	2.3	
Monthly income of the family (rs)			
<5000	43.1	51.4	0.002
5001-10,000	47.5	40.9	
10,001-15,000	6.5	6.5	
150,001-20,000	2.2	0.6	
>20,000	0.7	0.5	
Age			
15-19	1.8	2.0	0.016
20-24	51.2	59.4	
25-29	37.1	29.7	
30-34	7.9	7.0	
35-39	1.9	1.9	
Education			
Illiterate	48.2	31.7	0.000
<5 Years completed	15.6	9.8	
5-9 Years completed	24.2	33.1	
10-12 Years completed	10.8	23.3	
>12 Years completed	1.1	2.1	
Parity			
Nulliparous	31.3	40.5	0.000
1	29.2	29.8	
2	20.2	16.9	
≥3	19.2	12.8	
Maternal health-care utilization			
Number of ANC check-ups (n=1472)			
1	13.5	12.1	0.357
2	15.1	18.2	
3	20.0	18.2	
>3	51.3	51.5	
Complications during the pregnancy/delivery or after delivery			
Yes	11.1	12.7	0.314
Delivery attendant			
Nurse/ANM/LHV	79.7	34.0	0.000
Unqualified male/female staff	1.2	20.0	
Doctor (MBBS/AYUSH)	12.8	8.1	
Gynecologist (DGO/MD)	6.3	38.0	

APL: above poverty line, BPL: below poverty line, lhv lady health visitor, ANM: nurse/auxiliary nurse midwife, DGO: Diploma in gynecology and obstetric, MD: Doctor of medicine, ANC: Ante natal care, AAY: Antyodaya Anna Yojana

Comparison of two groups, place of delivery (public facility and accredited private facility) was done. Table 1 shows differences in statistics of demographic and socioeconomic variables between two groups of place of delivery.

Table 2 describes overall experience of care and technical quality of care received by mothers during labor pain and after delivery. It also shows basic infrastructure available in the facilities.

Figure 2 presents the comparisons of experience and technical quality of care reported by mothers who delivered in public and CY facilities. Study findings show that overall quality of care is good in both public sector and CY facilities. When free delivery care is compared between two sectors, the private sector has better quality of care. This difference is statistically significant for quality of care indicators, such as mothers allowed to eat/change positions during labor, application of pressure on abdomen to bring out baby, and weighing of baby. Basic infrastructure is also better in the private sector than in public sector. Counseling of mothers regarding postnatal care and baby care is also significantly better in private sector.

## DISCUSSION

Quality of care has recently become an important parameter for the maternal health-care services in the developing countries including India. With rapid rise in the institutional deliveries due to implementation of JSY, JSSK, and CY, quality of care indicators is becoming the key aspect of monitoring progress in the maternal health indicators. Our study is first of its kind to compare free delivery care between two types of facilities. Numerous studies done in India and comparative studies in Southeast Asia indicate that perception of quality of care is important in deciding where to deliver.<sup>[16-22]</sup> Our findings are consistent with a similar study in Nepal that suggests women perceived private facilities to be higher on the scale of quality for better privacy, improved infrastructure, and more cleanliness.<sup>[17]</sup> In our study, mothers perceived that quality of care provided in private sector compared to public sector was better. In private sector, majority of the delivery is conducted by obstetricians compare to public sector which indicates better quality of care during vaginal delivery. Technical quality of care indicators such as enema given, BP measured, and weighing of baby after delivery is also significantly better in the private facilities compared to the public sector.

Understanding a woman's perspective and her needs during childbirth and addressing them as part of quality-improvement programs can make delivery care safe, affordable, and respectful. Qualitative studies from in India and Southeast Asia show that mothers value privacy and emotional support provided during delivery.<sup>[23-25]</sup> The comparison of public and private sector in Uttar Pradesh shows that quality of care observed during the births was better in private facilities compared to public sector.<sup>[20]</sup>

Our study shows that there are better infrastructure and human sources in CY facilities compared to public facilities. This is

**Table 2: Descriptive statistics of overall experience of care and quality of technical care**

Experience of care	Percentage	Technical quality of care	Percentage
First examination after reaching into the hospital within 1 h	96	Enema during labor	19
Birth companion other than health service provider		Did someone press forcefully on your abdomen to bring out the baby?	16
Family member/relative/neighbor	90	Episiotomy in delivery	34
ASHA/Dai/Anganwadi worker	15	BP measured after delivery	82
No one	4	Baby weighed at birth (n=1567)	95
Were you allowed to move or change positions during labor (before delivery)?	49	After the birth of the baby, any pediatrician did checkup of the baby (n=1575)	38
Allowed to eat/drink during labor?	21	Time of first holding baby after delivery	
Did any staff shout at you/abuse or hit you during delivery?	2	Immediately	75
Did staff explain examinations and procedures to you before they were performed?		Between ½ and 1 h	21
Yes, all of the time	19	After 1 h	3
Sometimes	38	Baby care instruction given at the time of discharge	36
No, not really	39	Access to running water in the facility	99
Do not know	3	Cleanliness of bathrooms in the facility	94

ASHA: Accredited social health activist

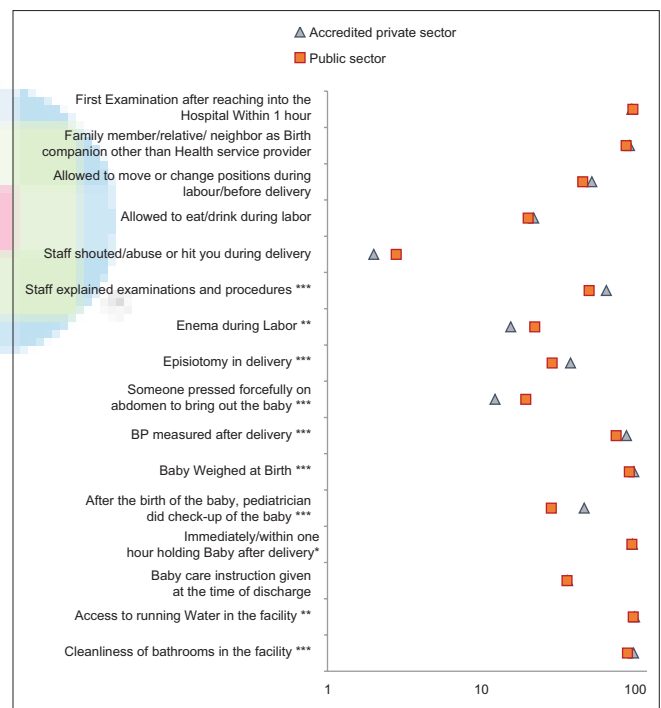
consistent with district-level household survey facility-based survey findings that there is lack of basic infrastructure and human resource in public sector.<sup>[9]</sup> According to Bruce *et al.*, public hospitals have a lack of quality components such as basic amenities (e.g., water), cleanliness, and respectful care.<sup>[22]</sup> Mothers in our study reported that in the private facility it was more likely that procedures were explained to them and they were allowed to change position or eat/drink.

Overall, quality of care is reasonable in both types of facilities as majority of mothers were examined within 1 h of admission and proportion of mothers reporting verbal or physical abuse is low at 2%. Perinatal mortality rate is also lower at 25 than reported 27 for rural Gujarat which also reflects good quality of care.<sup>[26]</sup> One of the reasons for lower perinatal mortality in this study could be exclusion of C-sections and operative vaginal deliveries. The patient’s judgment on the quality and goodness of care is necessary to improving the management of health-care systems in both public and private. The overall goal for the care in normal birth is to achieve a healthy mother and child using the least possible number of interventions compatible with safety.<sup>[27]</sup>

### CONCLUSION

Our finding suggests that there is better quality of care provided in accredited private sector compared to public sector though both are provided free delivery care. Study highlights the need for engaging private sector to improve access to basic care such as delivery care for poor women.

As quality of care is an important aspect of health system, it is essential to incorporate quality of care indicators in routine monitoring of schemes such as CY. Quality assurance programs in Gujarat also need to address the quality of care, especially respectful care issues in the public sector. Future research should include qualitative study of all stakeholders



**Figure 2:** Difference in quality of care between public sector and accredited private sector

including providers and mothers to understand the drivers of quality delivery care.

Understanding women’s perceptions of good quality care and addressing them in quality assurance programs can not only bridge the supply and demand gap but can also increase public facility-based deliveries by assuring safe and respectful care.

### Limitations

A limitation of our study is that our variables on experience

of care and quality of technical care were self-reported, which might not be accurate. However, authors feel that it is important to have mothers' perception of the same. A standard framework and questions from validated tool of Hulton framework were used, and data were collected within a week of delivery which to minimize bias.

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### Conflicts of interest

There are no conflicts of interest.

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