

ISSN 0970-0218



Apr-Jun 2013 / Vol 38 / Issue 2

Indian Journal *of* Community Medicine

Official Publication of Indian Association of Preventive and Social Medicine

www.ijcm.org.in



Medknow

Effect of Maternity Schemes on Place of Delivery in a Tribal Block of Gujarat

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Introduction

The Government of India and Gujarat have launched various maternity schemes to promote institutional deliveries. The Government of Gujarat (GoG) launched Chiranjeevi Yojana (CY) in 2006 to promote public-private-partnership which allows women living Below Poverty Line (BPL) to deliver free of cost at selected private healthcare facilities. Services are "contracted out" to empanelled obstetricians from selected private healthcare facilities by paying a fixed fee by the government for conducting a delivery.⁽¹⁾ Another public-private-partnership initiative of the GoG is provision of free transportation for any emergency, including women in labour since 2007. Janani Suraksha Yojana (JSY), was launched by the Government of India in 2005, which is a conditional cash transfer programme for women living under BPL to promote institutional delivery in public hospitals.⁽²⁾ It should be noted that the GoG implemented JSY differently than other states by providing cash transfer during antenatal period and not linking it to place of delivery.⁽³⁾ At the same time, many Non-Governmental Organizations (NGOs) implemented safe motherhood programmes.

Objective of this study is to examine effectiveness of recently launched maternity schemes and NGO initiatives to increase institutional deliveries by (1) Examining place of delivery during current pregnancy among women who had previous delivery after initiation of above mentioned schemes. (2) Examine current place of

delivery before and after initiation of maternity schemes for those women who had previous home deliveries.

Materials and Methods

This study is based on secondary analysis of community based data collected prospectively by village level frontline workers of SEWA-Rural (SR), a NGO located in Jhagadia block of Gujarat since 1980. SR implemented a family centred safe motherhood and new-born care project between 2003 to 2011 covering entire Jhagadia block consisting of 168 villages with total population of 175,000 which is predominantly tribal. Community level interventions were implemented by village level frontline workers. A frontline worker registered every pregnancy in her village, provided antenatal, intranatal and postnatal services and recorded its outcome up to 6 weeks postpartum. During her visits, a frontline worker recorded information on a form regarding demographics, obstetric history, presence of complications, place of previous and current delivery, details regarding new-born health, problems and services provided during current pregnancy.

For the first objective, all women belonging to Jhagadia block who had live or still births between April 2008 to March 2009 at either home or hospital were included. Women who were primi-gravida or who delivered on the way or those whose place of delivery was not known were excluded. Place of delivery for current pregnancy was examined in relation to previous place of delivery. Relative risk with 95% confidence interval was calculated to find chances of institutional delivery during current pregnancy (in 2008-09) for those women who had previous institutional delivery versus previous home delivery. Bi-variate and multivariate regression was performed to control for known confounders such as woman's age, education status, occupation, caste, parity and presence of complication during previous pregnancy to examine independent association between previous

Access this article online

Quick Response Code:



Website:

www.ijcm.org.in

DOI:

10.4103/0970-0218.112450

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Received: 01-09-11, Accepted: 10-07-12

and current place of delivery.⁽⁴⁾ STATA IC 10 was used for statistical analysis.⁽⁵⁾

For second objective, current place of delivery for two cohorts of women was compared who all had home delivery during previous pregnancy: Women who delivered in year 2004-05 (historic control) to those who delivered in 2008-09 (after implementation of maternity schemes). Relative risk and absolute risk reduction were calculated.

This study is exempt from ethical review because it is based on secondary data collected primarily for program monitoring.

Results

Out of 3,499 live and still-births in 2008-09, 2,207 births met all inclusion and exclusion criteria. Profile of women was as follows: 39% illiterate, 78% tribal, 22% had bad obstetric history and 9% were grand-multi-gravida.

Table 1 shows current and previous place of delivery for women who delivered in 2008-09. 977 (44%) deliveries occurred at hospital and 1,230 (56%) deliveries occurred at home during current pregnancy. Out of 671 deliveries that took place at an institution during previous pregnancy, 534 (80%) occurred at institution during current pregnancy. Out of 1,536 deliveries that took place at home during previous pregnancy, 443 (29%) occurred at institution during current pregnancy. Un-adjusted and adjusted relative-risk was 2.8 (CI: 2.5-3.0) and 2.39 (CI: 2.17-2.65) respectively; in other words, women who had previous institutional deliveries were 2.39 times more likely to deliver at institution during current pregnancy compared to those who had previous home deliveries after controlling for all other factors.

Table 2 shows place of delivery during current pregnancy in years 2008-09 and 2004-05 for all women who had home deliveries during previous pregnancy. Out of 1536 women who had previous home deliveries, 443 (29%) delivered at institution and 1093 (71%) delivered at home in 2008-09. Out of 1595 women who had previous home deliveries, 162 (10%) delivered at institution and 1433 (90%) delivered at home in 2004-05. Chances of delivering in institution was 2.8 times (CI:

2.4-3.4) higher in 2008-09 compared to 2004-05 for women who had previous home deliveries. Absolute risk reduction was 190 home deliveries during current pregnancy per 1000 previous home deliveries. In other words, for every 1000 women who had previous home delivery, 190 lesser women delivered at home in 2008-09 compared to 2004-05 due to the policy environment prevalent in 2008-09.

Discussion

Most of the women who delivered at hospital after initiation of maternity schemes chose hospital for subsequent delivery. Women who had previous home deliveries started having institutional deliveries during the course of study period. This indicates user satisfaction with CY and free emergency transportation along with effectiveness of grass-root mobilization and quality in-patient obstetric services provided by SR. Similar findings were observed when sensitivity analysis was performed using year 2010-11 as post-intervention period. Similar studies are needed in other areas of Gujarat where public-private-partnership may not be as strong as seen in case of Jhagadia before generalising findings of this study. Though before and after study design used here is not the most preferred design to establish causation, strength of the association and temporality does increase credibility of this evidence.

It is important to highlight the fact that number of institutional deliveries increased even in absence of a conditional cash transfer programme linking cash

Table 2: Place of delivery in 2008-09 and 2004-05 (baseline) for those women who had home deliveries during their previous pregnancy

	Place of delivery-current pregnancy		Total (%)	Unadjusted relative risk	95% CI	P value
	Hospital (%)	Home (%)				
2008-09	443 (29)	1093 (71)	1536 (100)	2.8	2.4-3.4	0
2004-05	162 (10)	1433 (90)	1595 (100)	1		
Total	605	2526	3131			

CI: Confidence interval

Table 1: Place of delivery during current (2008-09) and previous pregnancy

Place of delivery-previous pregnancy	Place of delivery-current pregnancy		Total (%)	Unadjusted relative risk	95% CI	P value
	Hospital (%)	Home (%)				
Hospital	534 (80)	137 (20)	671 (100)	2.8	2.5-3.0	0.00
Home	443 (29)	1093 (71)	1536 (100)	1		
Total	977	1230	2207			

CI: Confidence interval

transfer to institutional deliveries (such as JSY as it has been implemented in other states). This study shows that women are more likely to deliver at institution even in absence of cash transfer programme if there is availability of free emergency transportation, free and quality obstetric care at either public or private health facility for normal and complicated deliveries and community based mobilization efforts to ensure that maximum number of women take advantage of government benefits. JSY has a provision for women to receive Rs. 1500 to “contract-in” services from private practitioners.⁽⁶⁾ Though JSY has been successful in increasing institutional deliveries, it has been largely ineffective in leveraging upon availability of large number of private practitioners.⁽⁷⁾ Providing free emergency transportation and contracting-out services to private practitioners similar to CY in next phase of JSY might further augment its effectiveness.

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How cite this article: Shah PP, Modi DK, Shah SP, Desai SA. Effect of maternity schemes on place of delivery in a tribal block of Gujarat. *Indian J Community Med* 2013;38:118-20.

Source of Support: The John D and Catherine T MacArthur Foundation, USA,
Conflict of Interest: None declared.