RESEARCH BRIEF

Impact of National Rural Health Mission on Perinatal Mortality in Rural India

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Innovations under National Rural Health Mission have paved the way for increased utilization of hospitals for childbirth. The association of increase in hospital deliveries with decline in the perinatal mortality rate in rural India after the launch of NRHM in 2005 was assessed using the Sample Registration System reports. Relative increase in hospital deliveries was 57% from year 2005 to 2008 but relative decline in the PNMR was only 2.5% in the rural areas of Indian states (r=0.2; 95% confidence interval -0.2-0.6; P=0.3). Hence, quality of care at the time of childbirth needs to be assessed.

Key words: *Evaluation, Mortality, Perinatal, Rural, Quality of care*.

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Safe motherhood and child survival have always been a concern for the policy-makers but perinatal mortality, especially stillbirths, have not received due attention [1]. There are 5.9 million perinatal deaths worldwide, almost all of which occur in developing countries. Stillbirths account for over half of all perinatal deaths [2,3]. United Nations' Millennium Development Goal 4 - reduction in Under-5-Mortality by two thirds by 2015 - would be unattainable without a considerable decline in the perinatal mortality. According to WHO global perinatal estimates for year 2000, one third of stillbirths occur during delivery. These deaths are largely avoidable with skilled care [4]. Institutional deliveries can avert a number of avoidable complications which emerge during child birth by early detection and appropriate management. Although services like emergency obstetric care are the most challenging and costly to provide, they also have the highest potential to save lives [5].

The National Rural Health Mission (NRHM) - initiated in 2005 in India - envisaged providing affordable and quality health care to the poorest households in the remotest regions of the country. This mission has encouraged changes in the pattern of place of delivery. Innovations under NRHM like *Janani Surakhsha Yojana* (Maternity Security Scheme), Accredited Social Health Activists (ASHA), Delivery Huts, 24×7 Primary Health Centers and Community Health Centers, and Medical Obstetric Care in First Referral Units have paved the way for increased utilization of health institutions for child birth. According to Sample Registration System (SRS), deliveries in govern-ment and private hospitals in India have increased. However, perinatal mortality rate (PNMR) continues to be high, though wide inter-state and intra-state variations exist [6]. The aim of present study was to find whether increase in hospital deliveries is associated with decline in perinatal mortality in rural areas of India after the launch of NRHM.

METHODS

Institutional deliveries (in government and private hospitals) and perinatal mortality rate reported by the sample registration system (SRS) operated by the Registrar General of India on a representative sample from 2005-2008 was used for this study [6]. The relative change in PNMR and hospital deliveries was calculated for rural areas in each of the major states of India from year 2005 to 2008, and correlation between relative change in PNMR and hospital deliveries was examined using SPSS version 17. The study had 80% power at 5% significance level for finding a correction co-efficient of 0.54 or higher.

RESULTS

In most of the Indian states, hospital deliveries in rural areas have increased during 2005 to 2008. However, PNMR has declined only marginally during this period; it

has even increased in few states (***Table* I**) (r=0.2, 95% confidence interval –0.2, 0.6; *P*=0.3). At the national level, relative increase in hospital deliveries was 57% and relative decline in PNMR was only 2.5% in the rural areas of Indian states.

DISCUSSION

NRHM is a novel initiative by the Government of India to provide health care to people living in the rural areas of relatively poorer states of India. It is evident from the present study that post NRHM there have been a significant rise in hospital deliveries in rural areas (***Table* I**). It was expected that the rise in the institutional delivery will lead to decline in PNMR. A study by WHO in six developing countries had concluded that advancement in institutional care could lead to a decrease in the perinatal mortality [7]. Another study in Mexico also reported that sufficient prenatal care and standards of care for labor, delivery and for the care of the newborn are strong predictors of perinatal mortality [8]. We did not find significant association between the relative rise in hospital deliveries and relative decline in PNMR. Though deliveries in hospitals have increased but quality of delivery care may not be appropriate. Under NRHM focus is on 'universal institutionalised deliveries' rather than 'improved maternal/neonatal health'.

A UN report has highlighted that India is not training a sufficient number of skilled birth attendants and technical senior managers [9]. District Level Household and Facility Survey 2007-08 has revealed substantial gaps in availability of qualified service providers, equipment and supplies in primary and secondary level health facilities in India [10]. Shortage of human resources could be one of the reasons for less than optimum quality of services. Other reason could be non-availability of infrastructure for providing essential newborn care in the hospitals and health centers, *e.g.*, newborn corners where newborns can be given essential care in various levels of health care facilities. All health professionals who attend the mother during child birth should be skilled at resuscitation and know how to recognize babies at risk.

TABLE I RELATIVE CHANGE IN INSTITUTIONAL DELIVERY AND PERINATAL MORTALITY IN RURAL INDIA FROM 2005 TO 2008

State	Hospital delivery %			Perinatal mortality /1000 births		
	2005	2008	% Change*	2005	2008	% Change*
Andhra Pradesh	43.5	62.6	43.9	44	43	–2.3
Assam	21.0	36.7	74.8	35	34	–2.9
Bihar	20.0	23.5	17.5	31	28	–9.7
Chhattisgarh	18.2	30.7	68.7	55	52	–5.5
Delhi	51.3	63.6	24.0	27	17	–37.0
Gujarat	36.1	60.8	68.4	39	37	–5.1
Haryana	24.9	40.4	62.2	33	33	0
Himachal Pradesh	29.8	43.9	47.3	39	39	0
Jammu & Kashmir	39.5	56.4	42.8	39	43	10.3
Jharkhand	4.9	7.2	46.9	24	29	20.8
Karnataka	45.0	63.3	40.7	43	44	2.3
Kerala	98.7	98.9	0.2	18	15	–16.7
Madhya Pradesh	13.2	37.4	183.3	46	46	0
Maharashtra	35.7	57.5	61.1	35	34	–2.9
Orissa	21.3	42.0	97.2	57	48	–15.8
Punjab	29.4	48.9	66.3	39	36	–7.7
Rajasthan	16.2	43.4	167.9	49	47	–4.1
Tamil Nadu	58.6	78.7	34.3	38	30	–21.1
Uttar Pradesh	9.4	18.2	93.6	45	46	2.2
West Bengal	36.7	49.4	34.6	34	31	–8.8
India	24.4	38.3	57.0	40	39	–2.5

**Relative change = (2008-2005)/2005×100.*

WHAT THIS STUDY ADDS?

- National Rural Health Mission is successful in increasing hospital deliveries considerably but perinatal mortality has registered only a small reduction in the rural areas of Indian states.

Anticipating insufficient impact of institutional deliveries alone, other strategies like *Navjaat Shishu Shuraksha Karyakaram* (Newborn Survival Program) has been started in India recently to train health personnel for newborn care Facility-based integrated management of childhood illness (F-IMNCI) is also being integrated with the community-based IMNCI package. Maternal and perinatal death inquiries can also identify the bottlenecks and stimulate corrective actions at local level.

To conclude, although hospital deliveries have increased considerably since the launch of NRHM but PNMR has not shown significant decline. NRHM strategy of increasing institutional delivery rate should look into quality of care issues at the time of greatest risk, *i.e.*, birth and the first few days of life which could be the way forward for reducing the high perinatal death rate in India. However, progress in reducing deaths in perinatal period also depends on other factors like cultural, social and demographic characteristics. These factors also need to be addressed so as to have better impact on perinatal health. Political support and public ownership needs to be developed for accessing the right to health as an entitlement guaranteed by the state not only for those who are alive at birth but also those who die before birth.

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