



Original Research Article

## Impact of Implemented Safe Motherhood Yojanas under RCH-II in Some Indian States

Arumugam P<sup>1</sup>, Shantha A<sup>2</sup>

<sup>1</sup>Professor of Biostatistics, Community Medicine, Sri Muthukumaran Medical College & RI, Mangadu, Chennai-600069 Tamil Nadu, India.

<sup>2</sup>Associate Professor, Dept. of OBG. Sri Muthukumaran Medical College & RI, Mangadu, Chennai-600069 Tamil Nadu, India.

Corresponding Author: Arumugam P

Received: 12/08/2015

Revised: 22/09/2015

Accepted: 25/09/2015

### ABSTRACT

**Background:** India introduced its population stabilization Anti-Natalist policy as Cafeteria approach (1952) with modified strategies periodically by incorporating International Declarations like HFA, Reproductive Health, MDG and devised RCH-II (2005) under NRHM. According to an announcement in RCH –II “Allowing states to adjust and improve programme features according to the needs” many states have introduced Public Private Partnership (PPP) to improve rural institutional deliveries thereby ensuring Safe Motherhood and Child survival among BPL families. The implementing states were Assam (Chiranjeevi), Gujarat (Chiranjeevi), Haryana (Janani Suvidha), Madhya Pradesh (Janani Sahayogi), Uttar Pradesh (Saubhagyawathi,) and West Bengal (Ayusmathi). The study aimed to evaluate RCH components {Institutional Deliveries (IDs) MMR, IMR and TFR}.

**Objectives:** 1.To compare improvements between RCH- phases I and II. 2. To estimate the quantum of IDs to achieve MDG and IMR.

**Methodology:** The period of RCH- I and II was from 1997 to 2004 and 2005 to 2012 respectively. Published Data regarding IDs, MMR, IMR and TFR from various sources were collected. To study schemes impact, the differences of either increase or decrease were calculated and converted in to relative proportions for comparison. Significant of improvements was interpreted by unpaired t test. Institutional delivery is key factor for MMR and IMR reductions.TFR is correlated with IMR. The required quantum of IDs was determined by Regression equations.

**Results:** The improvement between the RCH phases I and II was statistically significant ( $P < 0.05$ ) except MMR ( $P > 0.05$ ).Equations:1.MMR=637.9-6ID, 2. IMR=84.9-0.545ID, 3. TFR= 0.855+0.047IMR.

**Discussions:** Significant improvements were seen in all states between phase I to phase II ( $P < 0.05$ ). The Institutional deliveries required to achieve MDG 109/100000 LBs was observed to be more than 88% and 100% IDs to achieve MDG IMR 27/1000 LBs. Reduction of IMR to 27/1000 LBs is required to attain replacement index (TFR 2.1) thereby stabilizing the population.

**Conclusion:** The six states, along with / modifications of Janani Suraksha Yojana have been implementing the respective schemes with an aim to improve IDs. Except Gujarat (86.1%), all other 5 states are yet to achieve the required IDs (88%) to improve maternal health. All states should improve IDs (100%) to enhance child health. West Bengal achieved the replacement fertility Index (1.7). Gujarat and

Haryana may achieve TFR, MMR and IMR in the MDG target year. But, Assam, UP and MP are doubtful to achieve all the indicators in the said MDG target year of 2015 despite the special schemes.

**Key words:** MDG, RCH, Chiranjeevi Yojana, IDs, MMR, IMR.

## INTRODUCTION

Independent India introduced its Anti-Natalist population policy in 1952 with an aim to curtail population growth. Later a political dimension was added to the existing Cafeteria, Extension, and Campaign approaches. In 1974 India declared “Development is the best contraception”. According to HFA by 2000 AD through Primary Health Care concept, India devised its Health Policy 1983 with prime importance to Universal Immunization Programme with an emphasis to reduce infant mortality rate. The main goal was to achieve NRR unity so as to stabilize the population growth in 2050. [1,2] Indian census 1991 identified 90 districts as high IMR and high CBR in all over India and declared ‘IMR and CBR are positively correlated’. Consequent to that, Govt. of India in 1992 introduced Child Survival and Safe Motherhood Projects (CSSM). The International Conference on Population and Development in 1994 at Cairo coined the terminology of ‘Reproductive Health’ and defined as “A condition in which reproduction is accomplished in a state of complete physical mental and social well being, not merely as the absence of diseases or disorders of reproductive system” and key for improvement of Maternal Health and reduction of IMR. [2] The Anti – Natalist policy strategy of top to bottom approach was changed as bottom to top approach and subsequently as Community Needs Assessment Approach.

**Genesis of RCH Programme:** The CSSM programme had considerably reduced the exogenous factors which were causes for IMR above 70/1000 LBs. The ORT significantly reduced the IMR component of

Post Neonatal Mortality. But the neonatal mortality is caused by endogenous factors which are basically biological. In any context, whenever the IMR is less than 60/1000 live births it is attributed to 70% of them caused by biological factors. The word reproductive health gave momentum to the drive to reduce the neonatal mortality. Govt. of India realized the importance of reproductive health and defined it as “People have the ability to reproduce and regulate their fertility; women are able to go through pregnancy and childbirth safely, the outcome of pregnancy is successful in terms of maternal and infant survival and well being; and couples are able to have sexual relations free of the fear of pregnancy and contract diseases”. [2,3] The strategy of Emergency Obstetrics Care (EmOC) was adopted in India under the World Bank and UNICEF funded project called Child Survival and Safe Motherhood (CSSM) in 1992. In this program there was a specific focus on development of comprehensive EmOC centers throughout India as per the international norm of 1 EmOC facility per 500,000 populations. The establishment of EmOC centers continued in the subsequent program funded during 1997-2004 by the World Bank with the changed nomenclature of the Reproductive and Child Health (RCH) programme. [4] The RCH programme was introduced in India on 2<sup>nd</sup> October 1997. India is committed to the Millennium Development Goals and declared its Health Policy 2002 with emphasis on Reproductive and Child Health. The RCH Phase II was inaugurated on 12<sup>th</sup> April 2005 under the auspicious of National Rural Health Mission (NRHM) and it is consistent with the GoI’s National Population Policy-2000, the

National Health Policy-2002 and the Millennium Development Goals. [5]

**Janani Suraksha Yojana (JSY):** Government of India initiated a scheme called Janani Suraksha Yojana (JSY) in 2005 under the NRHM. The scheme aims at reducing maternal and new born mortality rate by promoting institutional delivery for which financial incentives are provided to mothers who deliver in a health facility. It was launched in 2005 with an objective to increase institutional deliveries. Under the scheme, the government provides a cash incentive for pregnant mothers to have institutional births as well as pre- and ante-natal care. The JSY primarily aims at promoting institutional delivery while NMBS component (payment of Rs.500/-) within the Scheme is fairly limited. According to the October 2006 JSY guidelines, all women in Low Performing States (LPS) receive cash assistance if they have their baby in a government health centre or accredited private institution. In rural areas they receive Rs.1400 and in urban areas Rs.1000. The money is to be disbursed at the time of delivery in the institution. The cash assistance to the mother is mainly to meet the cost of delivery. Under JSY, below poverty line pregnant women above 19 years of age also receive Rs. 500 cash assistance for their first two births if these deliveries are at home. The cash is to be given at birth or around 7 days before for “care during delivery or to meet incidental expenses of delivery”. [6]

According to one of the announcements of GOI, “Allowing states to adjust and improve programme features according to the needs”. [7] Many states have made the modalities of JSY as Innovative schemes. The term ‘innovations’ was used very flexibly and broadly two sub-categories of innovations can be distinguished. One is a true ‘pilot innovation’ that has not been tried elsewhere, for example, Chiranjeevi Yojana

of Gujarat or the boat clinic of Assam. The second is the use of particular components of an intervention or an entire intervention implemented in a new setting or different organizational context. The innovations were being piloted in the context of substantial investments from national and State levels on improving the health status of populations. [8] The States like Gujarat, Haryana, Assam, Madhya Pradesh (MP), Uttar Pradesh (UP) and West Bengal (WB) have adopted the Chiranjeevi Yojana, Janani Suvidha Yojana, Chiranjeevi Yojana, Janani Sahyogi Yojana, Saubhagyawati Scheme and Ayushmati Scheme respectively to improve the institutional delivery with an aim of reduction of maternal mortality and neonatal mortality by means of Safe Motherhood. The above schemes were focused mainly on Public Private Partnership (PPP) to the BPL families.

**Chiranjeevi Yojana of Gujarat:** The Government of Gujarat aims to stabilize its population growth by reducing the Fertility rate, lowering Infant mortality rate and maternal mortality ratio. For reduction of maternal mortality Govt. of Gujarat launched scheme called Chiranjeevi Yojana (CY) in Dec 2005. The same was extended to all over states since November 2006 to BPL and APL of Tribal women. Since April 2007 APL-Non Income Tax Paying families are also incorporated in beneficiary criteria. [9]

The study aimed to evaluate the Maternal Mortality, Infant Mortality and Total Fertility in the context of improved institutional deliveries (Safe Motherhood) and to estimate the feasibility of achieving MDG 4 and 5.

**Aim:** To evaluate the improvements achieved in RCH phase II.

**Objectives:**

1. To compare the improvements between RCH phase I and II in

Respect of Institutional Deliveries (ID) IMR, MMR and TFR

- To estimate quantum of the IDs required achieving the MDG 4 and 5.

## MATERIALS AND METHODS

The state level data regarding the Institutional Deliveries (IDs) which is the key factor for the improvement of MMR and IMR were collected from the available sources like Registrar General of India (RGI), Sample Registration System (SRS), National Family Health Surveys (NFHSs) and Dist. Level Household and Facility Surveys (DH&FSs). In this study IDs mean, the deliveries which were conducted in health facilities. The RCH phase I, the introduction year 1997 was taken as the base year and 2004 was taken as end year as phase I. Similarly the RCH phase II, the introduction year 2005 and NRHM end year 2012 were taken as phase II. The two phases were being implemented for nearly 8 years each. Hence they were comparable in respect of improvements of IDs, MMR, IMR and TFR. The improvements of indicators have been calculated in percentages within

the phases and compared. Independent 't' test was applied for significance. The level of ID required for achieving MDG targeted MMR and IMR was estimated by constructing the Ordinary Linear Square (OLS) regression equations. The above statistical procedures were carried out by the statistical software IBM SPSS Statistics-20. The P- values less than or equal to 0.05 ( $P \leq 0.05$ ) was considered as significant.

**Data sources:** The regarding IDs IMR, MMR and TFR have been selected from the sources mentioned above, which were nearer to the base and end year of the respective phases. (Table-1- A&B)

The improvements of the study variables within the phase were converted in terms of percentages for uniformity to compare between the phases. The converted percentage improvements are furnished in Table-2.

To estimate required IDs to achieve the MDG 4 and 5 the following regression equations were constructed among the selected six states of 2012 data.

$$\text{MMR} = 633.7 - 5.9 \text{ IDs}$$

$$\text{IMR} = 84.7 - 0.541 \text{ IDs}$$

**Table-1-A: Prevalence of ID and MMR in base and end periods of RCH I and II**

State	ID (%)						MMR/100000 LBs					
	Phase-I			Phase II			Phase-I			Phase II		
	Base	End	Impr	Base	End	Impr	Base	End	Impr	Base	End	Impr
Assam	17.6	26.8	9.2	22.4	71.1	48.7	501	490	11	480	328	152
Gujarat	46.3	52.2	5.9	52.7	86.1	33.4	202	172	30	160	122	38
Haryana	22.4	35.1	12.6	35.7	74.5	38.8	176	162	14	186	146	40
MP	20.1	28.2	17.2	26.2	71.9	45.7	498	379	119	335	230	105
UP	20.6	23.7	3.1	32.6	53.9	21.3	707	517	190	410	292	118
WB	40.1	48.3	8.2	42.0	74.7	32.7	264	194	70	141	117	24

**Table-1-B: Prevalence of IMR and TFR in base and end periods of RCH I and II**

State	IMR/1000 LBs						TFR /woman					
	Phase-I			Phase II			Phase-I			Phase II		
	Base	End	*Imp	Base	End	*Imp	Base	End	*Imp	Base	End	*Imp
Assam	76	66	10	68	53	15	3.2	2.9	0.3	2.9	2.4	0.5
Gujarat	62	53	11	54	38	16	3.0	2.8	0.2	2.8	2.3	0.5
Haryana	68	61	7	60	42	18	3.4	3.1	0.3	2.8	2.3	0.5
MP	94	79	15	76	56	20	4.0	3.7	0.3	3.6	2.9	0.7
UP	85	72	13	73	53	20	4.8	4.4	0.4	4.2	3.3	0.9
WB	55	40	15	38	32	6	2.6	2.2	0.4	2.1	1.7	0.4

\*Improvement.

**Table-2: Percentage distribution of RCH- I and II improvements:**

States	ID (%)		MMR (%)		IMR (%)		TFR(%)	
	RCH- I	RCH- II	RCH- I	RCH- II	RCH- I	RCH- II	RCH- I	RCH- II
Assam	34.3	68.5	2.2	31.7	13.2	22.1	9.4	17.2
Gujarat	11.3	38.8	14.9	23.8	14.5	29.6	6.7	17.9
Haryana	36.2	52.1	8.0	21.5	10.3	30.0	8.8	17.9
MP	28.7	63.6	23.9	31.3	16.0	26.3	7.5	19.4
UP	13.1	39.5	26.9	28.8	15.3	27.4	8.3	21.4
WB	17.0	43.8	26.5	17.0	27.3	15.8	15.4	19.0

## RESULTS

The comparison, between the phases was shown in the table-3.

**Table-3: Comparison between the phases of ID, MMR, IMR and TFR.**

Indicators	Phase -I		Phase-II		Improved b/w phases	‘t’	df	Significance
	Mean	SD	Mean	SD				
ID	22.7	12.3	49.0	15.7	26.3	3.235	10	P<0.01
MMR	17.1	10.4	25.7	5.9	8.6	1.766	10	P>0.05
IMR	16.1	5.8	25.2	5.4	9.1	2.799	10	P<0.05
TFR	9.4	3.1	18.8	1.5	9.4	6.690	10	P<0.001

The Mean ID percentage of phase-I (22.7±12.3) was significantly (P<0.01) lesser than the mean percentage phase-II (49.0±15.7). Similarly, the mean percentages of Phase- I, IMR (16.1±5.8) and TFR (16.1±5.8) were significantly (P<0.05 and P<0.001) lesser than the phase-II IMR (25.2±5.4) and TFR (18.8±1.5) respectively. But, the MMR improvement between the two phases was not statistically significant (P>0.05).

The IDs required to attain the MMR 109/100000 live births was 89% as per the Regression equation of 1. And, to achieve IMR 28/1000 live births, the required IDs was 100% from equation - 2.

## DISCUSSION

Despite the significant improvement in IDs between the phases, the IMR significant reduction was reflected in the TFR. WB achieved TFR 1.7 (2012) and it may be due to the impact of the family welfare programme. To achieve the IMR 28/1000 LBs in 2015 by improving 100% IDs and thus will achieve the MMR 109/100000 LBs. The similar scenario was prevailing in Haryana also, since the IDs of Haryana was 74.5 % and it is equal to WB (74.7%). But in respect of Gujarat, the IDs

(86.1%) which were nearly equal to 89% required for achieving the targeted MMR. It was stated in implementation of Chiranjeevi Yojana state wide 91% of maternal and 71% of neonatal mortalities were prevented in the initial period of three years implementation through January 2006 to December 2008. <sup>[10]</sup> It provides free delivery care to the poor in the private sector, immediate access to EmOC when needed and women and their families with a choice of several providers nearby. Gujarat will achieve the MDG 4 and 5 in the targeted year of 2015. The other three less performing states namely Assam, MP and UP have no possibility and feasibility of achieving the MDG 4 and 5 in the targeted year. Since in an MP study it was stated that the Private Service Providers (PSP) were charging money from beneficiaries who are eligible for free treatment and recommended as ‘The scheme should continue in future as it has expanded the choice and accessibility of services for the BPL people. More efforts should be made to encourage private sector participation in the scheme so that it can be bringing about an increase in institutional deliveries and thereby decrease maternal mortality rate’. <sup>[11]</sup> Study findings indicate a huge increase in institutional deliveries in

the low performing states (MP and UP) and this can be attributed to the immense popularity of the JSY scheme. In order to reach the stated goal of 80 per cent institutional deliveries, more capacity needs to be created in health systems to cater to this JSY-induced demand. In this context, there is a need for policy level thrust in leveraging spare capacity available in the private sector for providing institutional services. Different states have interpreted guidelines differently with respect to the engagement of the private sector in JSY. The Government of India guided the states to spell out different options for increasing the engagement of the private sector is most certainly needed. In MP, there were no marked differentials in institutional delivery based on the BPL status of the family. [12] Assam perceives that this form of PPP is successful because it has enabled RCH services to a floating population of women and children and 'is not very costly'. The model has also attracted community and political support and has sparked interest among other private hospitals. Significantly, lessons from the model have been applied to the State Government's own urban municipal dispensaries where staff and infrastructure were largely under-utilized. The PPP model has been extended to another city based hospital for increasing the coverage in the urban slums. [13]

## CONCLUSION

The study which was conducted in high performing states, like Gujarat, Haryana and WB have implemented the safe motherhood schemes for the downtrodden in these states. Whereas, the low performing states like Assam, MP and UP have implemented the safe motherhood schemes are not fully earmarked to the downtrodden benefits and they are not at all similar to the Chiranjeevi Yojana of Gujarat. As stated elsewhere in the study, the MMR and IMR

are dependent upon the IDs and TFR is dependent upon the IMR. It was observed that Gujarat and West Bengal have a good chance of reaching 109 MMR, by 2017-2018. India is doing well on 'percent deliveries attended by skilled health personnel'. [14] Since the better performing study states viz. Gujarat, Haryana and WB have recorded 86.1%, 74.5% and 74.7% of IDs in 2012. They would achieve the MDG - 5 as targeted by the year 2015 or 2016. In respect of MDG-4, they have to strive hard for 100% IDs to achieve the goal in the targeted year.

## REFERENCES

1. Ravi Duggal, Evolution of Health Policy in India. April-18-2001. Available from <https://w.w.w.cehat.org>.
2. Somnath Roy, Deoki Nandan. Development towards achieving health/reproductive health for all and millennium development goals: a critical appraisal for strengthening action programmes (Part I) Health and Population Perspectives and Issues-30(2): 71-93, 2007.
3. Reproductive and Child Health. Overview of Reproductive and Child Health Programme. Report of RCH workshop – IPHA: Available from <https://w.w.w. ipha on line.org>
4. Chiranjeevi Yojana- An innovative partnership with the private sector Obstetricians to provide skilled care at birth to the poor in Gujarat: Available from <https://w.w.w. nhp. gov.in chiranjeevi yojana details pdf. P-1. 5p>.
5. Directory of Innovations implemented in the Health Sector. First draft, March 31, 2009. III- Key Findings. P-8. Available from <https://w.w.w. planning commission. gov. in/health/directory. 267p>.
6. Govt. of India, Ministry of Women and child development Indira Gandhi Matritva Sahyog Yojana (IGMSY) - a Conditional Maternity Benefit (CMB)

- Scheme. No.9-5/2010-IGMSY, GOI, MOW and CD Dated 8.11.2010. Available from <https://w.w.w.planningcommission.gov.in/health/directory>.
7. Child Protection and Child Rights- IV National Mechanism, Child Targeted Schemes and Programmes- Reproductive and Child Health Programmes. Available from <https://w.w.w.childlineindia.Org.in/child>
  8. Ibid-5. P-20.
  9. Ibid-4. P-2.
  10. Dileep Mavalankar, Amarjit Singh, Sureshchandra R. Patel, et al. Averting maternal death and disability, Saving mothers and newborns through an innovative partnership with private sector obstetricians: Chiranjeevi scheme of Gujarat, India. *International Journal of Gynecology and Obstetrics* 107 (2009) 271–276.
  11. Pal D. K, Neelam A. Toppo, et al. An appraisal of Janani Sahyogi Yojana in Madhya Pradesh. *Health and Population: Perspectives and Issues*. 31(2)-85-93, 2008.
  12. <https://w.w.w.countryoffice.unfpa.org/india> -Concurrent Assessment of Janani Suraksha Yojana (JSY) in Selected States, Bihar, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, United Nations Population Fund – India, First published in 2009. Published by: UNFPA 55 Lodi Estate New Delhi – 110003- INDIA.
  13. Ibid-5. P-200.
  14. Hanimi Reddi, Manas R Pradhan, Rohini Ghosha, A.G. Khan. India's progress towards the Millennium Development Goals 4 and 5 on infant and maternal mortality. *WHO South-East Asia Journal of Public Health* 2012;1(3):279-289.

How to cite this article: Arumugam P, Shantha A. Impact of implemented safe motherhood yojanas under RCH-II in some Indian states. *Int J Health Sci Res*. 2015; 5(10):37-43.

\*\*\*\*\*