



## The Janani Express Yojana: Initiative to Improve Access to Safe Delivery Services in Madhya Pradesh, India

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### Abstract

The Janani Express Yojana (JEY) is providing emergency transportation facility to expectant mothers, sick infants in rural Madhya Pradesh so as to enable them to avail adequate healthcare facilities on time 24 X 7. It was introduced in the year 2006 as a pilot basis in 10 districts of Madhya Pradesh which implemented throughout the state in 2009 later covered all the districts in 2012. We have compared data regarding place of delivery and maternal mortality ratio before and after the launch of JEY. For comparing place of deliveries National Family Health Survey (NFHS) 1 to NFHS 4 data were used and to compare change in maternal mortality ratio Sample Registration System (SRS) 1997 - 2003 to SRS 2014-16 data were used. There is no statistical significant change in the institutional deliveries from NFHS 1 to NFHS 2 and NFHS 2 to NFHS 3 i.e. 15.9% to 21.3% and 21.3% to 26.2% respectively, but since the introduction of JEY in 2006 there is statistical significant increase in the institutional deliveries from 26.2% (NFHS 3) to 80.3% (NFHS 4). There is significant reduction in the proportion of home deliveries from 73.5% (NFHS 3) to 19% (NFHS 4). Maternal Mortality Ratio (MMR) in 1997 was 410 which decline to 335 i.e. only 18.3% decrease in MMR over 9 years, on contrast since 2004-06 to 2014-16 there were 48.4% reduction in MMR i.e. 335 to 173.

**Keywords:** Janani Express Yojana; Maternal Mortality Ratio; Emergency Transport System; Institutional Delivery

### Abbreviations

JEY: Janani Express Yojana; SRS: Sample Registration System; NFHS: National Family Health Survey; MMR: Maternal Mortality Ratio; NRHM: National Rural Health Mission; MP: Madhya Pradesh; BPL: Below Poverty Line; UNICEF: United Nations Children's Fund; ASHA: Accredited Social Health Activists; ANM: Auxiliary Nurse Midwifery; Aaws: Anganwadi Workers; GPS: Global Positioning System

### Introduction

The National Rural Health Mission (NRHM) was launched by Government of India on April 2005, to provide accessible, affordable and quality health care to the rural population, especially the vulnerable groups. Madhya Pradesh (MP) is a 'high focus state' under NRHM with the vision of 'All people living in the state of Madhya Pradesh will have the knowledge and skills required to keep themselves healthy, and have equity in access to effective and affordable health care, as close to the family as possible, that enhances their quality of life, and enables them to lead a healthy productive life'.

Major aim of the programme is to improve India's health situation with particular focus on maternal and child health [1]. MP is one of the leading states in high maternal and child mortality.

Madhya Pradesh is the second biggest state which is situated in the Heart of India. It has the total population of around 7.2 crores which is roughly 6% of total population of India, out of which 72.4% belongs to rural population. Hence most of the population resides in rural areas of Madhya Pradesh and hard to reach hilly regions and many of them are even tribal populations (8.6%) [2]. According to the Tendulkar Committee Report 2009, nearly 48.6% of the population is estimated as living Below Poverty Line (BPL) with rural poverty ratio (53.6%) exceeding the urban poverty ratio (35.1%) significantly [3]. Hence, the accessibility and availability of health services are always being a problematic situation for those people.

Maternal mortality is one of the important indicators to understand the health care system of a country. In this 21<sup>st</sup> century, India has got all the facilities to treat many incurable diseases and even

it acts as the treatment hub for many patients from the neighborhood countries and our country is producing around 60,970 doctors every year, out of which 2100 is in MP [4]; still our women are dying during the normal physiological process i.e. labour, which is unacceptable by any means. One of the main reasons for high maternal deaths in our country is due to unavailability of timely public transport or inability to hire a vehicle by the poor people to reach the health facility on time which leads to increased home deliveries by unskilled birth attendants and also such delays in reaching the health facility lands the women in critical stage of labour which is sometimes beyond the availability of services in the nearest available health facility. Maternal deaths are very much preventable if deliveries are attended by skilled health personnel and births are delivered in institutions with proper antenatal and postnatal care. In a report released by World Bank (2008) it is mentioned that 75% of maternal deaths can be prevented by timely access to emergency obstetric care [5]. Thaddeus and Maine has described three delays in access to obstetric care services viz. (1) delay the decision to seek care; (2) delay arrival at a health facility; and (3) delay the provision of adequate care. The second delay occurs because the patient's residence and the health care facility may be far from each other, inaccessible roads and terrains, transport may not be available or they are unable to pay to hire a vehicle. And this type of delay is the most critical step which can make wonders in reducing the maternal mortality if managed properly [6].

Government of India introduced Janani Suraksha Yojana in April 2005 throughout the country to improve the institutional delivery in order to reduce the maternal mortality rate [7]. But in states like Madhya Pradesh reaching the facility itself a bigger task for the rural people who don't have any vehicle of their own or cannot afford from the private sector; to address these issues there comes one of the most important initiative done by the Government of Madhya Pradesh which is known to be Janani Express Yojana, that later became the milestone in strengthening the health care throughout the state.

### Janani Express Yojana

The Janani Express Yojana is providing emergency transportation facility to expectant mothers, sick infants in rural Madhya Pradesh so as to enable them to avail adequate healthcare facilities on time 24 X 7. It was introduced in the year 2006 as a pilot basis in 10 districts of Madhya Pradesh which was implemented throughout the state in 2009 and later covered all the districts in 2012. The pilot was funded by United Nations Children's Fund (UNICEF) then later it was introduced under the NRHM. Initially only the BPL fam-

ily pregnant women can access the service but latter the program allowed all the pregnant women irrespective of the social status can avail the services [8].

### Network of JEY

One of the reasons for the success of JEY is strong network of communications between the patients, call centre operators and the ambulance drivers. A total number of 940 vehicles run under the program covering all the 50 districts of the state including nearly 313 development blocks in the state. It is mainly a public-private partnership in which the Government of MP hires the private ambulances on a contract basis. The 24 x 7 call centres are established throughout the state mainly in the district hospitals which acts as the link between the patients and the ambulance drivers. The call centres has the minimum of 3 call operators who works round the clock. They are provided with the computers in which all the records of the patients and the drivers are updated. During the initial phase of the program the phone numbers of the drivers were given to the Accredited Social Health Activists (ASHA), Auxiliary Nurse Midwifery (ANM), Anganwadi Workers (AWs) who has to call them and inform about the pick-up location of the patients but it created so many problems since driver's response was poor and they have always given excuses that they have roped in some other case. Then later the call centres were started and operators were given proper training under the guidance of UNICEF and the ambulances were installed with Global Positioning System (GPS) to monitor the movement of the vehicle to avoid unnecessary time and resources wastage. Usually the beneficiary/ family members/ASHAs or any other health care workers contacts the call centre and they will give the details of the patient, valid home address and contact number to the call operator. The call operator will check for the nearest available ambulance through GPS facility installed in the ambulance. Then they will give the details of the driver to the beneficiary and the details of the beneficiary to the ambulance drivers. They will also monitor whether the driver immediately starts towards the beneficiary address via the GPS. Then time taken by the ambulance to reach the health facility and total time taken to reach the health facility will be updated in the software available in the call centre. Once the patient has reached the health facility the driver will give the detailed report which will be noted down in the register and updated in the software. In such way each and every details will be made available in the software starting from the call made by the beneficiary to reaching the health facility (Figure 1). The Government will pay the pre-fixed rent to the ambulance every month, if the ambulance runs more than the fixed kilometer extra money will be paid by the government per kilometer [9].

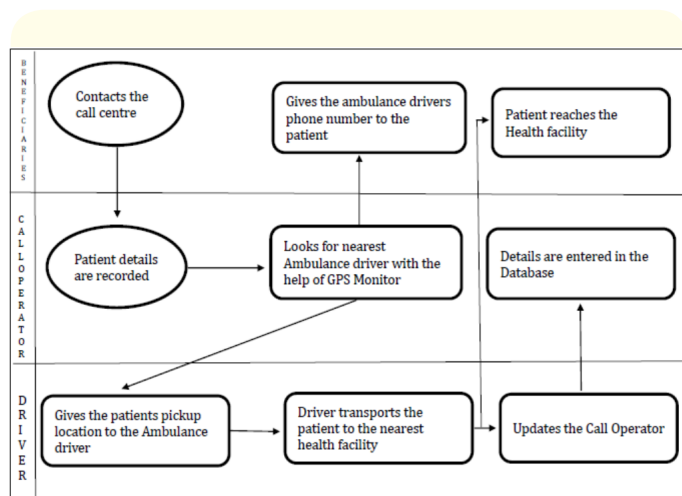


Figure 1: Flow chart showing JHEY networking.

### Materials and Methods

This study is based on analysis of the secondary data from government and international organization. Both electronic and print databases were searched for studies related to Janani express. Intensive search was done from multiple conjunctions of Medical Subject Headings (MeSH).

### Results and Discussion

We have compared data regarding the place of delivery and maternal mortality ratio before and after the launch of JHEY. For comparing the place of deliveries, National Family Health Survey 1 [NFHS 1] [10], NFHS 2 [11], NFHS 3 [12] and NFHS 4 [13] data were used and for the maternal mortality ratio sample registration system [SRS] 1997 - 2003 [14], SRS 2004-06 [15] SRS 2007-09 [16], SRS 2009-11 [17], SRS 2011-13 [18] and SRS 2014-16 [19] data were used.

Table 1 showed that there is no statistical significant increase in the institutional deliveries from NFHS 1 to NFHS 2 also from NFHS 2 to NFHS 3 but since the introduction of JHEY in 2006 there is statistical significant increase in the institutional deliveries from NFHS 3 to NFHS 4.

Table 2 showed that there is no significant increase in institutional deliveries conducted in public facility from NFHS 2 to NFHS 3 but in contrast there is statistical significant increase in the institutional deliveries conducted in public facility from NFHS 3 to NFHS 4.

Comparison year	Data	Chi Square value	P value
NFHS 1 (1992-93)	15.9%	0.96	> 0.05
NFHS 2 (1998-99)	21.3%		
NFHS 2 (1998-99)	21.3%	0.66	> 0.05
NFHS 3 (2005-06)	26.2%		
NFHS 3 (2005-06)	26.2%	59.9	< 0.001
NFHS 4 (2015-16)	80.8%		

Table 1: Comparison of institutional deliveries conducted in Madhya Pradesh from NFHS 1 to NFHS 4.

Comparison year	Data	Chi Square value	P value
NFHS 2 (1998-99)	13.1%	0.99	> 0.05
NFHS 3 (2005-06)	18.4%		
NFHS 3 (2005-06)	18.4%	53	< 0.001
NFHS 4 (2015-16)	69.5%		

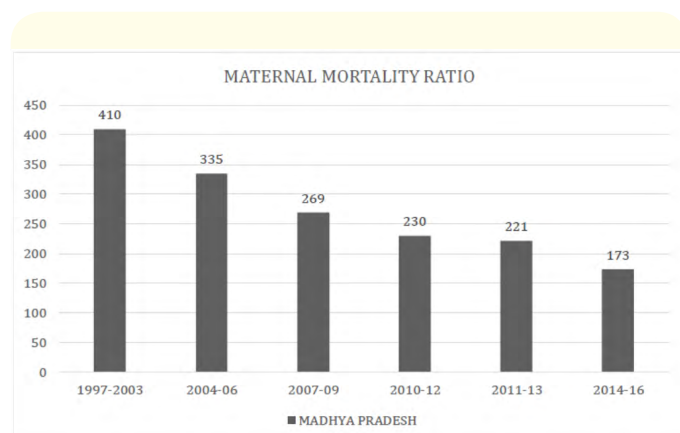
Table 2: Comparison of institutional deliveries conducted in public facility out of total institutional deliveries in Madhya Pradesh from NFHS 2 to NFHS 4.

Table 3 showed that there is no statistical significant reduction in the home deliveries from NFHS 1 to NFHS 2 also from NFHS 2 to NFHS 3 but in contrast there is statistical significant reduction in the proportion of home deliveries from NFHS 3 to NFHS 4.

Comparison year	Data	Chi Square value	P value
NFHS 1 (1992-93)	84.1%	0.96	> 0.05
NFHS 2 (1998-99)	78.7%		
NFHS 2 (1998-99)	78.7%	0.74	> 0.05
NFHS 3 (2005-06)	73.5%		
NFHS 3 (2005-06)	73.5%	59.7	< 0.001
NFHS 4 (2015-16)	19%		

Table 3: Comparison of home deliveries conducted in Madhya Pradesh from NFHS 1 to NFHS 4.

MMR in 1997 was 410 which decline to 335 i.e. only 18.3% decrease in MMR over 9 years, on contrast since 2004-06 to 2014-16 there were 48.4% reduction in MMR i.e. 335 to 173 (Figure 2).



**Figure 2:** Showing change in the maternal mortality ratio from 1997 to 2016.

### Conclusion

The JEY is India’s first emergency transportation model dedicated exclusively to transport pregnant women, mothers and sick infants. Since then, it has contributed in significantly increasing the institutional deliveries from 26.2% (NFHS 3) to 80.8% (NFHS 4) i.e. more than 200% increase. Similarly, another important achievement of JEY is reducing the home deliveries which were nearly 84.1%, 78.7% and 73.5% in NFHS 1, NFHS 2 and NFHS 3 respectively, but there was drastic reduction from 73.5% (NFHS 3) to 19% (NFHS 4), which was phenomenal feat achieved by one of the Bimaru states i.e. Madhya Pradesh. All these factors ultimately contributed to the significant reduction in maternal mortality ratio.

### Limitations

There were many confounding factors which we have not considered in this article like Janani Suraksha Yojana launched in 2005 a case incentive scheme for pregnant women delivering in health facility might also have role in improving institutional deliveries in MP. Other confounding factors might be change in the literacy level, increased awareness, increase in number of health facilities and doctors.

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