

**Original Article:**

## Out of Pocket Costs of Institutional Delivery in Four Empowered Action Group States of India: An Analysis of NFHS 4 Data

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**Abstract:** Background: Maternal and child health is one of the priority areas in Indian context, particularly in Empowered Action Group (EAG) states of the country. Institutional deliveries are prioritized as one of the important means to reduce MMR and IMR. The current study aims to estimate and compare the out of pocket expenditure associated with institutional deliveries in EAG states of Bihar, Uttar Pradesh, Madhya Pradesh and Chhattisgarh in India. Methodology: The study was conducted through secondary analysis of NFHS 4 data. The study adheres to the approach of ecological study design and aims at comparing the OOPE and its variations at the state level. The data was analysed using SPSS version 20. Statistics of mean, standard deviation and 95% confidence levels for OOPE were computed and compared. Results: Uttar Pradesh had the highest OOPE with mean OOPE for institutional delivery of INR 7616.77, 95% CI (7310.26 – 7923.28), Chhattisgarh had the least OOPE with mean OOPE per institutional delivery being INR 3917.80, 95% CI (3513.40 - 4294.25). Presence/absence of health insurance had profound impact on the OOPE. Institutional deliveries in UP which were not covered under any Insurance had mean OOPE of INR 11596.54, 95% CI (8832.62 – 14360.45), on contrary institutional deliveries in Chhattisgarh which were covered under insurance schemes had OOPE of INR 3964.84, 95% CI (3220.70 – 4709.00) Conclusion: While OOPE fluctuated with insurance and other socio-demographic factors, existence of inter-state differences reflects on the importance of health service availability in reducing OOPE. Interventions focussing on reducing OOPE should also focus on health system strengthening by improving availability and accessibility of health services.

**Key Words:** Out of Pocket Expenditure, Institutional deliveries, Maternal and Child health care, Health Expenditure

**Background:**

Maternal Neonatal and Child Health (MNCH) is among the most prioritized areas for health across the countries. MNCH indicators such as Maternal Mortality Rate and Infant Mortality rate not just reflect the health status of the population in a nation but also reflect its level of development. MNCH

indicators are among the several indicators which enabled creation of a new category within the Indian states under the terminology of Empowered Action Group (EAG) states. EAG states, consisting of Bihar, Uttar Pradesh, Jharkhand, Chhattisgarh, Uttarakhand, Odisha, Rajasthan and Madhya Pradesh are provided additional health system investments and support so as to enable them perform in par with the other developed states of the country.

The Indian health eco-system in the last three decades witnessed massive investments and health system restructuring greatly influencing its MNCH indicators on a positive note. However, within the Indian scenario, there is a stark difference in the performance of the states in the dimensions of MNCH. The southern states with comparatively better health systems fall into the positive side with Empowered Action Group states often faring at the lower level. Moreover, MNCH ailments are among the leading causes of mortality and morbidity among the EAG states(1), reflecting the disease burden needing addressal.

One of the most important indicators targeted with respect to improving MNCH is Maternal mortality rate. Adequate Nutrition, Complete Antenatal Care, Institutional Delivery and Postnatal care are the chief components reported as means to reduce MMR. Institutional Delivery in specific is essential to ensure that the delivery is conducted by the trained health worker, greatly reducing the odds of maternal and infant mortality(2).

The out of pocket expenditure, defined as the cost incurred by the patients/households of patients for accessing health care is an important dimension in public health planning and evaluation(3,4). It reflects on the affordability component of the particular health service delivery. Earlier literature on MNCH from India chiefly focussed on other components of the health service delivery, with a little attention paid to health care financing, in particular OOPE. However, given the increasing prominence to improve affordability of health care, and even shift towards providing cashless health services through programmes like Ayushman Bharat Yojana, it becomes important to quantify the out of pocket expenditure (OOPE). In this regard 4 EAG states (i.e., Bihar, Uttar