

Does Access to Maternal and Child Health Care (MCH) Services in India Change in a Decade?

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ABSTRACT

Utilization of maternal and child health services in India varies differently due to various socio-economic conditions. Aim of the study is to analyze the spatial inequalities in access to maternal and child health services in India from 2005-06 to 2015-16. Bivariate analysis has done using the National Family Health Survey 2005-06 & 2015-16. Geographically, women belong to southern states of India such as Kerala, Tamil Nadu, Karnataka has the highest access to MCH services. Rajasthan, Chhattisgarh, UP, Uttarakhand, Assam, Odisha states are showing the improvement in institutional delivery, but access to full ANC still deprived.

1. Introduction

Access to health care services for all population is essential for healthy, good quality of life and active people for overall human development, without spatial socio-economic barriers. Ensure healthy lives and promote well-being for all at all ages is third Sustainable Development Goal (SDG). SDGs are universal common goals towards a safe and sustainable place for all human beings in the world (Osborn et al., 2015).

The degree of accessibility of health care institutions is one of the most significant indicators for measuring the efficiency of a health care system (Gatrell & Elliott, 2009). Comber et al., (2011) said accessibility varies with the location, health and socio-economic characteristics of individuals. In health geography, researchers consider the location health facilities and utilization of healthcare services. The equitable provision of health care services is a significant challenge for developing countries (Kara et al., 2013). Harris et al. (2011) explain how inequalities occur in the access to health care service in private and public sector health facilities between different social-economic groups in South Africa.

There is also a trend of qualified health providers to live in more comfortable areas. In low-income countries (LIC), inequality occurs in the frame of the spatial focus of social health insurance schemes mostly in urban sites. Thus, rural people are ignored or less secured (Jacobs et al., 2012). The difference in factors such as insurance and geographic location can influence access to available health professional and resources, the type of care offered to patients and the impact of care on patients (Steinwachs & Hughes, 2008). O'Donnell et al., (2007) found in the survey in a rural region of India that the use of public health facilities was deficient despite being free, because of inadequate quality of care. However, the private sector alternatives are also of uncertain quality.

The maternal deaths in the developing nations account for nearly 99 % in the world. In India in 2013, the deaths among women of reproductive age due to the maternal cause were 6.7 %. By the end of 2015, India missed the targets of achieving Millennium Development Goals on the reduction of child mortality and on improving maternal health condition at national level narrowly (G.M. Boopathy et al., 2014). A few high focused

states from north-central and eastern India miserably failed to meet any of those targets. Also, a recent study conducted by Bora & Saikia, (2018) documented that while the majority of the districts from southern India are either achieved or likely to achieve SDG on the reduction of child mortality, many from these highly focused states are not in the track of fulfilling those.

The maternal mortality ratio (MMR), an indicator of maternal health, has dropped 27 % from 178 in 2010-12 to 130 in 2014-16; but remains as high as 237 in Assam and as low as 46 in Kerala (Office of registrar general India, 2018). In case of immunization against measles among children under one year, not able to achieve target 100, only 81 percent of children immunized in India, 2015-16. Similarly not fulfill goals of 100 % skilled delivery till 2015 in India (Government of India, 2017). Around half of women able to access necessary healthcare services and under-five mortality indicate more than six million children die every year in the developing regions in the world (United Nations, 2018).

National Health Policy (NHP) 2017, outline target to achieve ANC, skilled delivery and full immunization 90 % and above, by 2025 (National Health Policy 2017, 2017). Bihar (16.8 %) and Rajasthan (16.5%) have the highest share of infant deaths from the total in India, whereas, in a state like Kerala, Himachal Pradesh and Tamil Nadu have less than five percent in 2015-16 (Office of registrar general India, 2018). The MMR of India was 212 in 2007-2009. The prevalence of maternal mortality ratio is high in Assam, UP and Rajasthan among EAG states which have a higher proportion of maternal deaths. They are called deprived states, but since the last one decade, maternal health conditions have improved in Assam. In Kerala, women health is better with the lowest MMR. In India, pneumonia and diarrhea are the main reason, estimated for 45 % of deaths among children (under five years) in 2008 (Paul et al., 2011). Despite a faster increase in the utilization of MCH services after the National Rural Health Mission in 2005, the improvement of utilization of healthcare services and health facilities are not evenly in India. The location of health care facilities, distribution and behaviour of users are primary spatial information that necessary to consider in the planning of local

health care services(Kara et al., 2013; Murad, 2004). There is a need to understand the spatial pattern of access to MCH services in India. This study is crucial to for updating the current status in MCH services in India using the most recent NFHS data.

2. Objective

The objective of the study is to know the change in the spatial inequality in access to maternal and child health care services in India from 2005-06 to 2015-16.

3. Data & Method of Analysis

We used data from the National Family Health Survey (NFHS) conducted during 2005-06 & 2015-16 in India. NFHS was designed to provide reliable estimates of fertility, mortality, family planning, utilization of maternal and child health care services at the national, state, and district level. The recent round of survey adopted a two-stage sample design in rural areas and urban areas. In this study, 221957 women (39151 from NFHS-3 & 182806 from NFHS-4) at age 15-49 year who have experienced recent live birth and 60915 children at age 12-23 months (11027 children from NFHS-3 and 49888 from NFHS-4) included for the analysis.

A rate (percentage) has calculated for key indicators Full Antenatal care (ANC), institutional delivery (ID), postnatal care (PNC), child Immunization to know the utilization of MCH services across states of India. Full ANC includes at least four ANC visits, at least 100 iron-folic acid tablets and at least two

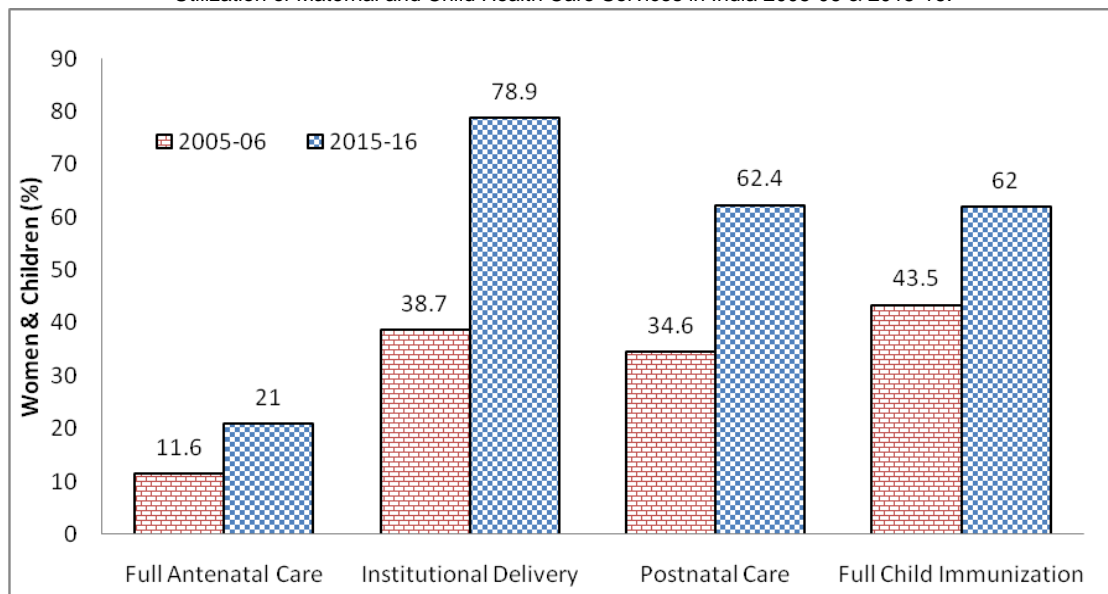
tetanus injections before childbirth by pregnant women. ID indicates the delivery of the child by pregnant women in any health facility (government and private). PNC includes health check-up of the mother after delivery within 48 hours and within six weeks by health professionals. Full Immunization comprises children at the age of 12-23 months who received at least one dose of BCG vaccine, three doses of diphtheria, pertussis, tetanus (DPT) vaccine, three doses of the polio vaccine, and one dose of measles vaccine at any time before the survey.

Inequality is measure in term of the percentage difference in the use of MCH services in different states. Tables, Diagrams and Maps have been used to present the final results of the analysis. SPSS software has used for data analysis and Arc Map software also used to show the regional distribution of services through Maps.

4. Results

Figure 1 presents the utilization of MCH services in India during the last two rounds of NFHS viz. 2005-2006, and 2015-2016. Figure 1 shows the significant improvement occurs in Institutional Delivery and PNC, but full ANC result is not as expected. However, in the last one decade ID increased by 40 percentage points in India (from 38.7% in 2005-2006 to 78.9% in 2015-2016), and the use of PNC 27.8 percentage point from 2005-2006 to 2015-2016.

Figure-1
Utilization of Maternal and Child Health Care Services in India 2005-06 & 2015-16.



Source: National Family Health Survey, India, 2005-06, 2015-16.

Table 1 shows the percentage point change from 2005-06 to 2015-16 in the utilization of full ANC, ID, PNC and Child immunization in major populated states of India. Improvements occur in full ANC in India from 2005-06 to 2015-16, but not evenly distributed among the states. Access to full ANC increased highest in north-eastern & northern states of India, e.g. Manipur, Mizoram, Himachal and Meghalaya. While in the state such as Kerala, Uttar Pradesh and Bihar utilization of full

ANC declined up to five percent point (negative) from 2005-06 to 2015-16.

Highest improvements found in institutional delivery in India from 2005-06 to 2015-16. Higher institutional delivery found in Empowered Action Group (EAG) state of India as compared to other states of India, such as Chhattisgarh (55.9%), Madhya Pradesh (54.6%), Rajasthan (54.4%), Orissa (49.7), Assam (48.2%) percentage points improvement. While in the state such as Kerala, Goa, Tamil Nadu Mizoram,

Nagaland and Meghalaya, least increased in institutional delivery from 2005-06 to 2015-16.

Most significant improvements in access to PNC observed in EAG states of India over the last one decade from 2005-06 to 2015-16, e.g. Chhattisgarh (42.7%), Uttar Pradesh (41.7%), Orissa (41.5), Assam (40.8%) and Rajasthan (36.8%), highest percentage points improvement. While in the state such as Kerala, Arunachal Pradesh, Andhra Pradesh, Karnataka have least increased in used of PNC from 2005-06 to 2015-16. Tamil Nadu is the only state where access to PNC declined (Negative -11.6 %) over the last decade.

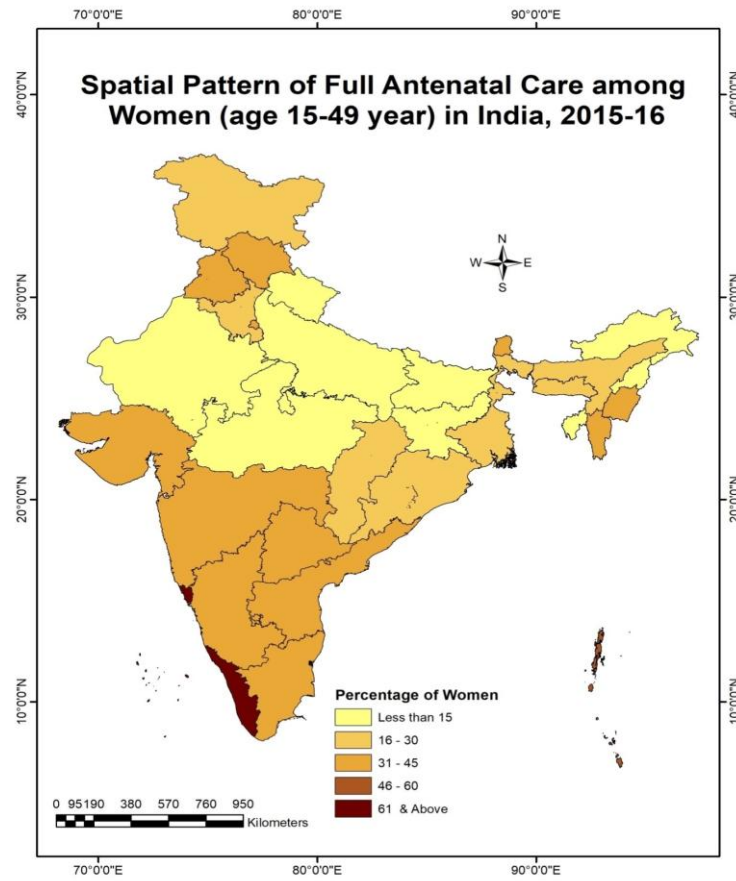
Overall in India, full Immunization among children 12-23 months has been increased from 2005-06 to 2015-16, but not evenly across the state. There are five states, which recorded negative trends for full immunization coverage. Tamil Nadu (-11.2%), Himachal Pradesh (-4.7%), Haryana (-3.1%), Maharashtra (-2.6%) and Uttaranchal (-2.4%) shows declined full immunization from 2005-06 to 2015-16. The improvement in full Immunization mostly observed in the EAG & Northern states of India, e.g. Punjab, Bihar, Meghalaya, Rajasthan and Uttar Pradesh from 2005-06 to 2015-16.

Table-1
Percentage changed in uses of MCH services in India, from 2005-06 to 2015-16

State	Full Antenatal Care	Institutional Delivery	Postnatal Care	Child Immunization
Andhra Pradesh	15.4	22.9	8.5	19.3
Arunachal Pradesh	-1.4	23.7	7.4	9.8
Assam	11.4	48.2	40.8	15.7
Bihar	-0.9	43.9	28.9	28.9
Chhattisgarh	16.1	55.9	42.7	27.7
Delhi	14.7	25.5	12.2	5.6
Goa	6	4.6	16.8	9.8
Gujarat	10	35.8	11.5	5.2
Haryana	7.6	44.7	28	-3.1
Himachal Pradesh	21	33.4	34.5	-4.7
Jammu & Kashmir	14.1	35.4	30.3	8.4
Jharkhand	3.1	43.6	28.8	27.7
Karnataka	8	29.3	8.9	7.6
Kerala	-5.5	0.6	4.1	6.8
Madhya Pradesh	6.7	54.6	30	13.3
Maharashtra	17.7	25.7	21.4	-2.6
Manipur	28.1	23.2	19.1	19
Meghalaya	19.3	22.4	20.2	28.5
Mizoram	26.5	19.9	14.9	4.2
Nagaland	1.8	21.2	12.1	14.4
Orissa	10.7	49.7	41.5	26.8
Punjab	18.9	39.2	34.1	29
Rajasthan	3.4	54.4	36.8	28.3
Sikkim	16.6	47.5	29.3	13.4
Tamil Nadu	17.5	11.1	-11.6	-11.2
Telangana	17.3	26.8	25.1	12.5
Tripura	0.2	33	35.8	4.8
Uttar Pradesh	3.2	47.2	41.7	28.1
Uttaranchal	-1.2	36	27.1	-2.4
West Bengal	12.1	32.1	25	20.1
India	9.4	40.2	27.8	18.5

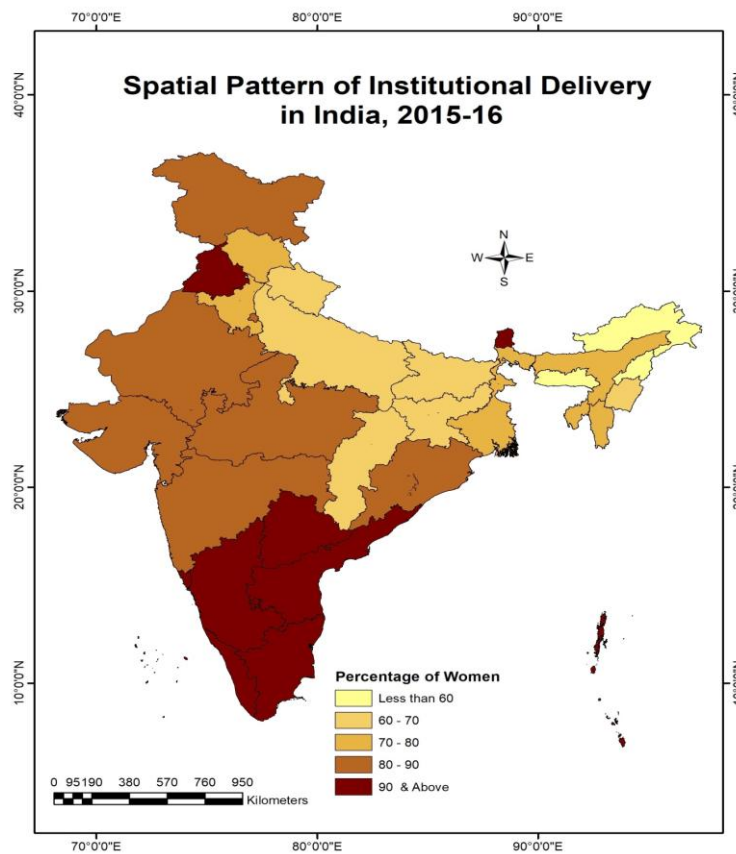
Source: National Family Health Survey, India, 2005-06, 2015-16.

Map: 1



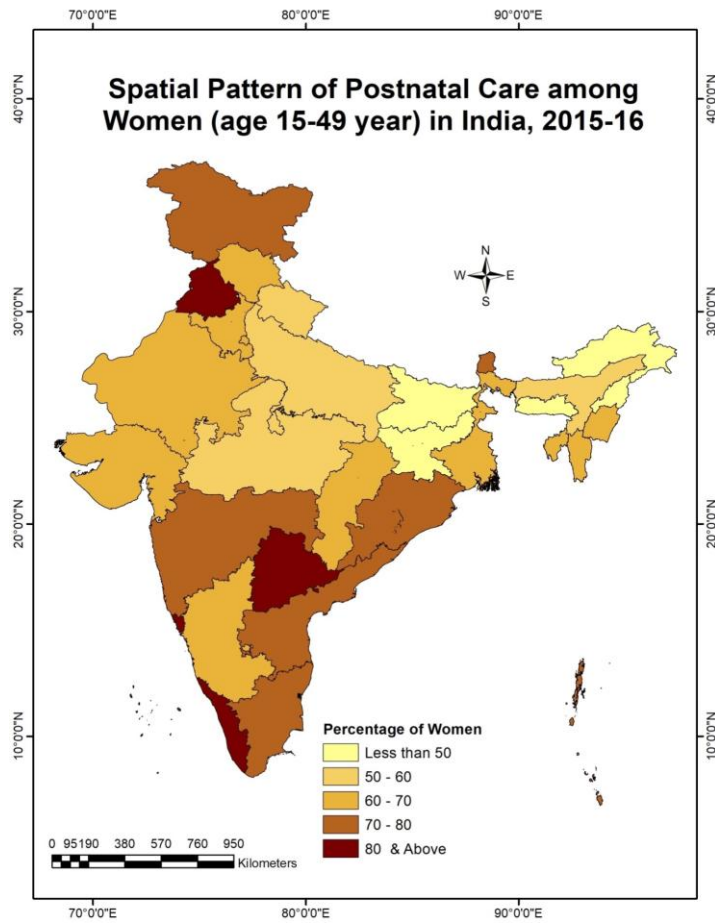
Source: National Family Health Survey, India, 2015-16.

Map: 2



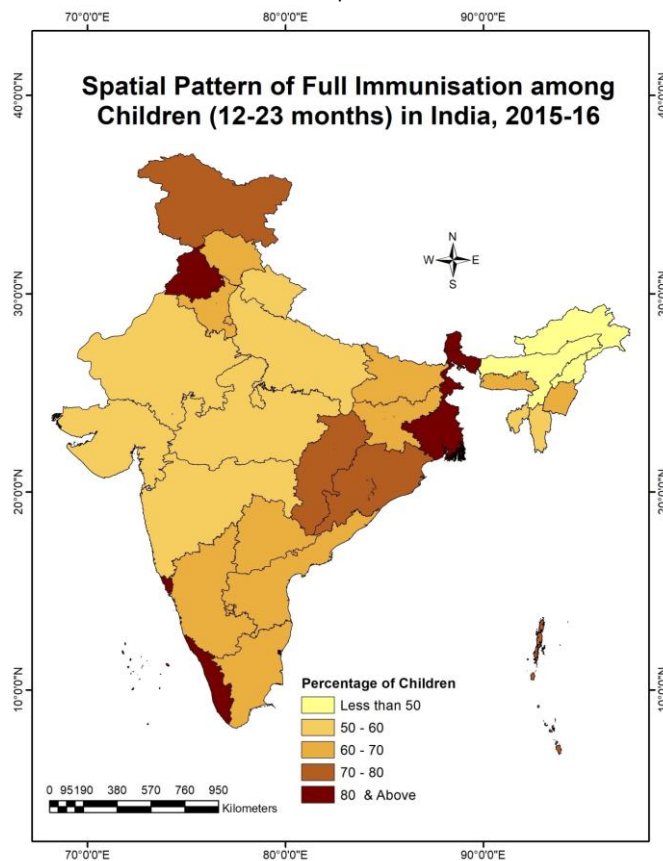
Source: National Family Health Survey, India, 2015-16.

Map: 3



Source: National Family Health Survey, India, 2015-16.

Map: 4



Source: National Family Health Survey, India, 2015-16.

4.1 Antenatal Care

Map 1 shows that concentration of utilization of full ANC mostly seen in the southern states of India in 2015-16. In 2015-16, higher access to full ANC also found in southern states such as Goa (63%), Kerala (61%), Tamil Nadu (45%), Andhra Pradesh (44%), Telangana (42%). While, women in the North-eastern States and eastern state have the least access to full ANC, e.g. in Nagaland (2.4%), Bihar (3.3%), Arunachal Pradesh (3.5%) Uttar Pradesh (5.9%), Tripura (7.6%), Jharkhand (8%) in 2015-16.

4.2 Institutional Delivery

Maps 2 show the utilization of health facilities for last birth delivery also seen higher in the southern states of India in 2015-16 (above 90%). In 2015-16, the highest institutional delivery observed in Kerala (99.9%), Tamil Nadu (98.9%), Goa (96.4%), Sikkim (94.7%) and Karnataka (94%). While, lowest institutional delivery observed in Nagaland (32.8%), Meghalaya (51.4%), Arunachal Pradesh (52.2%) and Jharkhand (61.9%) in 2015-16.

4.3 Postnatal Care

Map 3 shows that utilization of PNC mostly concentrated in the southern states of India in 2015-16. Access to PNC among women highest observed in Goa (92.1%), Kerala (88.7%), Punjab (87.2), Telangana (81.7%) and Andhra Pradesh (79.7%), While, women in the North-eastern States and Eastern state have least access to PNC, e.g. in Nagaland (22.3%), Arunachal Pradesh (28.8%), Bihar (42.3%), Jharkhand (44.4%) and Meghalaya (47.5%) in 2015-16.

4.4 Child Immunization

Map 4 shows that receiving of full Immunization among children at age 12-23 months not concentrated in one geographical region of India in 2015-16. A higher percentage of children who received full Immunization found in Punjab (89.1), Goa (88.4%), West Bengal (84.4%), Sikkim (83%), Kerala (82.1%), while less than half of children of children in the North-eastern states received full Immunization in 2015-16, e.g. in Nagaland (35.4%), Arunachal Pradesh (38.2%), Assam (47.1 %).

5. Discussion & Conclusion

In terms of full ANC, Postnatal Care, child immunization considerable difference seen among different states. However, the improvement occurs, that is not uniform among across the states of India, because of different socio-economic characteristics and health expenditure between the states of India. Government financial incentive programs for institutional delivery helps in reducing the gap.

Antenatal care is significant during pregnancy to reduce the risk of life for child and mother at the time of delivery. Early detection of any disease/sickness among pregnant women health check-up is needed. In India, around 18 percent of pregnant women did still not receive any antenatal care during pregnancy for all births in the last five (NFHS-4). The primary source of ANC reported by women in private hospitals (35 %),

followed by government hospitals (21%), Anganwadi centre (19%) in India. The huge difference of full ANC not only found according to states such as (Kerala 60 % vs Bihar 3%) but also the place of residence creates a difference in utilization of ANC. The health facilities are located in the urban area as compared to the rural area.

In India, around 14 % of delivery still occurs at home. The intuitional delivery increased due to monetary incentive by government schemes (JSY). Rapid improvement in institutional delivery occurred due to JSY (Iyengar et al., 2009). JSY most successful interventions to improve the institutional delivery in EAGs state and the effect of monetary incentive is low in southern states because they already achieved the highest level of institutional delivery. The Ministry of Health and Family Welfare (MoHFW) recommends that all women who deliver in a health facility receive a postnatal health check within the first 24 hours after delivery. Women giving birth outside of a health facility should be referred to a health facility for a postnatal check within 12 hours after giving birth (Balram Paswan et al., 2017; International Institute for Population Sciences (IIPS) and ICF, 2017). Postpartum check-up after delivery among mother is significantly less in India. According to the place of residence, the highest difference (23 percentage point) to received PNC found in Odisha. Even after higher institutional delivery, the percentage of women who received PNC is still lower.

In India, significant death occurs under five years of age. The complete vaccination of children for diseases such as diarrhea malaria hepatitis BCG etc. could prevent these deaths. Government of India implemented many programs for eliminating many diseases from children. Around 30 percent of children are partial Immunization. The share of full Immunization could be improved, If all children get all the doses of vaccines and dropout reduced to Zero. There is nine percent of children do not receive any vaccination against diseases in India 2015-2016.

Geographically, women belong to southern states of India such as Kerala, Tamil Nadu, Karnataka has the highest access to MCH services. However, north-central states (Ganga-belts) states of India, such as Rajasthan, Chhattisgarh, UP, Uttarakhand, Assam, Odisha are showing the improvement in institutional delivery, but access to full ANC still deprived. Regarding recommended vaccination among children, a higher imbalance is observed in north-east states of India.

Defiantly, access to maternal and child health care services improved over the last one decade, and differences also reduced to some extend for institutional delivery. However, full ANC, child immunization indicates that spatial inequality still exists in India. There is a need for urgent government intervention for antenatal care services primarily in north-east state and the EAG state of India.

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