Demography India (2016)
Vol.45, Issue: 1&2, pp: 17-30

ISSN: 0970-454X

Research Article

Barriers and Opportunities for Universal Health Coverage in India: Evidence from District Level Households Surveys in Demographically Developed States

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Abstract

Demographic and epidemiological transition in India at high rate has resulted into population health challenges in enormous scale. Despite of lot of efforts on strengthening the healthcare facilities, awakening people regarding the benefits of utilizing healthcare facilities, yet the utilization has not been as predicted even in demographically developed states of India. Study suggests that accessibility of health care facilities has marginally improved but not in all the states. Moreover, the barriers faced by population due to non-availability of doctors have restrained women from utilizing maternal health services in public health facility. Education is the only factor supporting the use of healthcare facilities for availing the maternal and child health services. The shift from public health facility to private together with poor healthcare financing has plunged a large section of society into poverty. A lot more effort is needed to reduce the gaps in implementation through corrective measures to achieve universal health care coverage in India.

Introduction

The parallel processes of demographic and epidemiological transition are currently occurring at remarkable speed in India. The dramatic and widespread nature of these current and ongoing shifts indicates that the population challenges that India is facing are sure to occur in an enormous scale. This change present complex health, economic and social challenges to which this heterogeneous country must rapidly adapt at both present and continuing to the future. The achievement of India in last 5 decades has been a continuous investment in strengthening health infrastructure. It started with Alma Ata Conference when the national goal set by the Indian policy makers was Health for all by 2000.

Since then a lot of planning, effort and public expenditure has been devoted to improve the human health both in rural and urban parts of India. Previously also the Indian government had made a lot of efforts in the context of health in India. The first thing adopted was the formation of a committee in 1946 which was headed by Sir Joseph Bhore, which was also known as Health Survey, and Development Committee. This committee was guided by a lofty principal as 'nobody should be denied access to health services for his inability to pay'. As per the recommendations of this committee 'Primary Health Center' was setup to provide promotive, preventive, curative and rehabilitative services to entire rural population. In continuation, India was the first country to launch family planning programme to stabilize the population. With the initiation of National Health Policy in 1983, there was an architectural correction in health system of India. Further, Universal Immunization Programme (UIP) launched in 1985 provided universal coverage of infants and pregnant women with immunization against identified vaccine preventable diseases. From the year 1992-93, the UIP has been strengthened and expanded into the Child Survival and Safe Motherhood (CSSM) Project. All the above programmes were clubbed together into one broad programme as

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Reproductive and Child Health (RCH) Programme in 1997 which focused on child health, maternal health, family planning, treatment and control of reproductive tract infections and adolescent health. RCH-2 was introduced in 2005 to strengthen and improvise RCH-1, and it aimed at bringing about a comprehensive integration of family planning into safe motherhood and child health through sector wide, outcome oriented program based approach with emphasis on decentralization, monitoring and supervision.

Later, when the outcome of health programme in India was measured it was not uniform because of the diversity in Indian states. Ashish Bose, the demographer in his letter to then Prime Minister Rajiv Gandhi wrote about underdeveloped states coined as BIMARU (meaning 'sick') states in India which consisted of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. These states were underdeveloped in terms of demography specifically in terms of health and had poor economic conditions which were dragging down the GDP growth rate of India. Eventually, with the population growth some more states were added to BIMARU states and were termed as Empowered Action Groups (EAG) states which included Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Orissa, Rajasthan, Uttar Pradesh, Uttaranchal and Assam. The Non EAG state includes all the other states which are excluded from the EAG states. The difference between the two is that the outcome of health indicators in Non EAG states are measured through Annual Health Survey and the outcome in EAG states are measured through National Family Health Survey.

Gradually, the National Health Mission (NHM) was introduced in the year 2011-12 which encompasses its two Sub-Missions, the National Rural Health Mission (NRHM) and the newly launched National Urban Health Mission (NUHM) with components of Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A), and Communicable and Non-Communicable Diseases to strengthen Health System in India. But, the limitation of NRHM is that it does not touch the major issues which tend to reach the Million Development Goals (MDGs). To develop a more concrete health system in India, a High Level Expert Group (HLEG) was constituted who proposed a framework for easy accessible and affordable health care as a strategy of Universal Health Coverage in October 2010 for 10 years. This strategy specifically focused on social and economic determinants of health, process of consultations, health financing and financial protection, access to medicines, vaccines and technology, trained human resource for health, reformation of management and information system, community participation and citizens engagement. For better understanding the HLEG has defined Universal Health Coverage as 'Ensuring equitable access for all Indian citizens, residents in any part of the country, regardless of the income level, social status, gender, caste or religion to affordable, accountable, appropriate health services of assured quality (promotive, preventive, curative and rehabilitative) as well as public health services addressing the wider determinants of health delivered to individuals and populations, with the government being the guarantor and enabler, although not necessarily the provider of health and related services.'

Despite of all efforts taken by the government and private sectors for improving health conditions in India, the utilization has not been as predicted. There have always been barriers in accessing health care services in rural and urban areas. Though, in urban areas people have access to private health facilities, but in rural areas where there is lack of exposure to privatization and globalization, they have to opt for government health facility for which the barriers for accessing health care services is much more which can be summed up to socio-cultural barrier, economic barrier and structural barrier. Hence, the purpose of this study is to see the barriers and utilization of health care services in demographically developed states by measuring three dimensions. Firstly, it considers the utilization of government health facility in case of any incidence of morbidity in any member of the household. In case, if the utilization is less then what are the barriers the households are facing for not rendering the health care services. Secondly, the paper tends to discern the service utilization for maternal health purpose by the women of rural areas.

Methods and Materials

The data used in this study has been taken from two rounds of District Level Health Survey in India (DLHS-3 and DLHS-4) conducted in 2007-2008 and 2012-2013. Both of these surveys have been conducted on the stewardship of Ministry of Health and Family Welfare, United Nations

Population Fund (UNFPA) and United Nations Children's Fund (UNICEF). The survey elicited information on demographic and health indicators at the national, regional, state and district levels from a nationally representative sample across the country. The data was collected using sample size of 15-49 years age group ever married women which was 247147 in DLHS-3 and 306021 in DLHS-4. The selected indicators of child health care services have been taken from NFHS-3 and factsheet of NFHS-4. The study has been focused on rural areas of demographically developed (Non-EAG) states because in EAG states i.e. demographically undeveloped states there is lack of access to health care, fertility is high, maternal and child health are not up to the mark and lacks elderly care. So, talking about universal health care in these areas would be inappropriate. Moreover, the urban areas of Non-EAG states are already developed infrastructural and people have capacity and are ready to pay as when needed. Hence, the center of this study has been the rural areas of Non-EAG states where despite of improved health care services, it does not really account to all.

Statistical analysis

Two levels of analysis were employed in this paper. At the univariate level, the percentage distribution of the study villages having accessibility to different health facilities and barriers to accessibility is shown. At the bivariate level, logistic regression was performed to examine the statistically significant relationship between independent variables and utilization of health care facility by the household members in case of any morbidity, maternal health issues and chronic illness.

Results and discussion

Accessibility and utilization of health care services

The utilization of health services depends on a number of factors, which can be understood through the demand–supply framework (Ensor & Cooper, 2004). Accessibility being the first and foremost barrier in Indian health system restricts population from utilizing the services. Second, though the facilities are accessible the factors that exist outside the control of potential health service users such as lack of drugs, equipment, finances, human resources, geographic distance all act as barrier in utilization of health services. Hence, this section deals with the accessibility and utilization of healthcare services in India. Accessibility of health facility in the villages shown in Table 1 portrays that overall 65 percent of villages in India have any health facility followed by 57 percent of villages have sub-health center and only 23 percent of villages have primary health centers in 2012-13 which has almost doubled from 2007-08. In 2007-08 states like Kerala, Mizoram, Sikkim and Tamil Nadu have more than 50 percent of Sub Health Centers that has declined in 2012-13. However, in 2012-13 almost all the states have more than 50 percent of SHCs except Arunachal Pradesh, Maharashtra, Meghalaya and Manipur. The scenario of the accessibility of Primary Health Centers (PHCs) in the villages for both the survey is very poor except Kerala where for both the periods more than 75 percent villages are covered under PHCs. Availability of Any Health facility (AHF) in the sampled villages is substantially high. Region wise accessibility of AHF shows that in DLHS-3; 58 percent of the villages in Southern region are covered by AHS followed by the North-eastern, Northern, Western and Eastern region (Figure 1). Likewise, the latest survey shows the coverage of 72 percent of sampled villages under AHF in Southern region followed by Eastern (67 percent) and Northern (64 percent) region. Therefore, southern region has emerged as one of the well-performing region in both the survey.

Utilization of public health facilities by any member of the rural households according to their socio-economic characteristics is shown in Table 2, which explains that higher is the educational level of household head, lesser is the utilization of public health facility in both the survey. In DLHS-3 where head of the households have completed below five years of education, 62 percent among them utilize public health facility. Those who have completed 5-9 years and 10-12 years of education among them 58 percent and 49 percent utilize public health facility respectively. As well, in DLHS-4 utilization of public health facility according to the educational qualification of the head of the

household follows same pattern as DLHS-3.In both the survey utilization of public health facility is substantially high among scheduled tribes (83 percent in DLHS-3 and 74 percent in DLHS-4) followed by scheduled castes and other backward castes. For the period 2007-08 in North-eastern region 91 percent of rural households utilize the facility which is considerably high as compared to other regions. The utilization has increased in all the regions over the period except North-eastern region where it has declined by 7 percent. In both the survey according to the standard of living index, household belong to poorest, poorer and middle wealth quintiles avail public health facility than their counterparts. As in DLHS-3, 64 percent of poorest and poor households use the facility, however 33 percent of households belong to richest quintiles avail the same. It is to be noticed that utilization of public health facility among the households belonging to richest wealth quintiles has increased by 12 percent over the period.

Results from logistic regression analysis indicate that in 2007-08 scheduled tribe households are 43 percent more likely to utilize public health facility than scheduled castes. On the contrary, as compared to scheduled caste, households belong to other backward caste and other castes are 25 percent and 26 percent less likely to utilize the facility. In DLHS-4 scheduled tribe households in rural areas are 9 percent more likely and OBC and other castes are 22 and 23 percent less likely to avail public health facility. Except western region all the regions are more likely to avail the facility, the eastern region and the scenario is almost same in both the survey periods. In DLHS-3 the likelihood of utilizing public health facility has been declining with the increase in standard of living as households belong to poorest quintiles are more likely to avail the facility than poorer, medium, richer and richest households. In DLHS-4 poorer, medium, richer and richest households are correspondingly 9 percent, 17 percent, 29 percent and 51 percent less likely to utilize the facility as compared to poorest households. As compared to the non-insured households, insured households in DLHS-3 are less likely to utilize the facility, though in DLHS-4 insured households are more likely to use the facility than the non-insured.

Perceived Barriers to the health care services offered through Public health facilities

Differences in the utilization of health care services are empirically proved in many studies [WHO] It is evident that despite of healthcare franchises in every state and districts provided by the government at lower cost, people intend not to utilize the provided services because of the poor health care delivery system. Even after the efforts of the government and incentives offered, medical students or doctors are not showing interest in working in governmental hospitals. Lack of sanitation facilities, proper infrastructure, effective management system and efficient usage of resources aggravates the situation (Peters, Garg, Bloom, Walker, Brieger, & Rahman, 2008), consequently diverting the people towards private health facilities where comfort and medical attention is provided. This section deals with the barriers that are perceived by women in utilizing public health facilities.

It is noted that in DLHS-3 overall 12 percent of rural households are not utilizing public health facilities due to unavailability of doctors and the percentage is almost same in DLHS-4. In 2007-08 33 percent of households did not visit public health facility due to the problem of waiting time, which has declined to 17 percent in 2012-13; additionally, Percent of rural households not utilizing public health facility due to poor quality of care has declined over time from 34 percent to 16 percent from 2007-08 to 2012-13. It is apparent from Table 3 that percentage of rural households not availing government health facility due to non-availability of doctor is remained same in both the survey. Nevertheless, percentage not using government health facility due to waiting time and poor quality of care has decreased by 16and 18 percent points respectively. Percentage of rural households with both the highly educated and uneducated household heads not availing public health facility because of non-availability of doctors has increased over the period. Except scheduled tribe, the other categories reason for not using government health facility due to non-availability of doctors has increased from DLHS-3 to DLHS-4. It is to be noticed that percentage of poorest households not using public health facility because of non-availability of doctors has declined from 11 percent to 8 percent over time. On the contrary, richest households with the same perception have increased from 13 percent to 18 percent. However, percentage of households with different castes and religions not

using public health facility due to waiting time and poor quality of care has declined from DLHS-4 to DLHS-3. In fact, percentage of rural households with both highly educated and uneducated household heads not availing public health facility with the perception of waiting time too long and poor quality of care has declined over the period. Percentage of poorest households with the perception of waiting time too long and poor quality of care has declined from 26 to 10 percent and 37 to 11 percent respectively. Likewise, percent of richest households not using public health facility due to waiting time has declined from 38 to 27 percent and because of poor quality of care has decreased from 30 to 23 percent.

Role of public sectors health facilities in enhancing maternal health care services

The practice of public health facility has been dynamic in India and the statuses of these facilities are found improving with every additional programmes focusing on the hurdles in reaching the pockets. A study by NCAER proved that Safe motherhood intervention by government of India through Janani Suraksha Yojana (JSY) has been successful in addressing the disparities in utilization of maternal healthcare services. This section deals with Antenatal care and Institutional delivery which is a part of JSY, is most vital among pregnant women as regular antenatal check-ups ensure maternal and foetal health and wellbeing. Results reveal that 83 percent of rural women aged 15-49 have received three or more antenatal check-ups in DLHS-3, which has increased to 86 percent in DLHS-4 (Table 4). Percentage of women aged 15-49 who received antenatal check-up in public health facility is almost same in both the surveys. Findings from logistic regression analysis reveal that in both the survey educated women are more likely to visit for antenatal check-up than their counterparts. In DLHS-3 women who have completed 10-12 years of schooling and 13 or more year of schooling are 1.7 and 2.9 times more likely to receive three or more ANC check-up than illiterates. Likewise, in DLHS-4 women who have completed 10-12 years of schooling and 13 or more year of schooling are 2.1 ($p<0.01$)and 2.5 ($p<0.01$) times more likely to receive the service. The likelihood of availing three or more ANC is comparatively high among OBCs and other castes than scheduled castes. In DLHS-4 OBCs are 1.1 times and other castes are 1.3 times more likely to receive 3 or more ANC check-up as compared to scheduled castes. Women belong to higher wealth quintiles are more likely to receive three or more ANC check-up then the poor. In DLHS-3 and DLHS-4, richest women are respectively 2.8 times and 1.7 times more likely to receive three or more ANC than the poorest. On the contrary, in both the survey percent of women receiving ANC check-up in public health facility is substantially high among the poorest than the richest. In DLHS-3, 81 percent of poorest women and 41 percent of richest women received ANC in public health facility. However, in DLHS-4, about 77 percent of poorest women and 47 percent of richest women utilize public health facility for ANC.

Institutional delivery is one of the main factors to reach Sustainable Development Goals (SDG). It provides skilled attendance which guides in reducing pregnancy complications, maternal deaths as well as neonatal or fetus deaths. The scenario of institutional delivery among rural women aged 15-49 during their last pregnancy is described in Table 5. It is observed that Institutional delivery among rural women has increased over the period from 63 percent 78 percent. In DLHS-3 institutional delivery among the literates is substantially high as compared to the illiterates. However, institutional delivery among illiterates has increased 3 times (25 percent to 75 percent) over the period. In fact, among all the caste and religion groups institutional delivery among rural women has considerably increased from DLHS-3 to DLHS-4. Among scheduled castes and scheduled tribes, it has increased from 60 to 82 percent and 40 to 56 percent respectively. In all the regions, institutional delivery among rural women has increased over time. Women belong to high standard of living deliver more in the institutions than the women belong to low standard of living in both the survey. However, institutional delivery among poorest women has increased by 20 percent over time.

Findings from multivariate regression analysis reveal that women aged 15-19 are more likely to deliver in an institution than their counterparts. In both the survey, literate rural women are more likely to deliver in institutions than the illiterates. In DLHS-3 women who have pursued 13 or more years of education are 8.8 times ($p<0.01$) more likely to deliver in the institutions than the illiterates.

Likewise, in DLHS-3 among literates the likelihood to deliver in the institution is 7.8 times ($p<0.01$) high than the illiterates. Among the caste groups, OBCs and Other castes are more likely to deliver in the institution than SCs. In both the period, the likelihood to deliver in an institution among Muslims and Christians is less as compared to Hindus. In DLHS-3 and DLHS-4, rural women from southern region are 2.9 ($p<0.01$) times and 3.4 ($p<0.01$) times more likely to deliver in an institution than the women in eastern region. In DLHS-4 women from western region are more likely to deliver in the institutions than the eastern region In the previous survey however, likelihood of institutional delivery among the women from western region is less as compared to eastern region. It is observed that higher is the standard of living the occurrence of institutional delivery is more. For both the survey period, women belong to high standard of living are more likely to deliver in the institutions than the poorest and poor women. The result also portrays that in DLHS-3 out of the total delivery among rural women, 33 percent of delivery are conducted in public health facility, which has increased to 51 percent over the period. It is noticeable that the delivery in public health facility among rural women of all the age, education, caste, religion groups has substantially increased from DLHS-3 to DLHS-4.

Contribution of public health facilities in promoting Child health care services

It has been estimated that more than half of global under-5 deaths are attributable to a few conditions, namely pneumonia, diarrhea, malaria, measles, and HIV/AIDS (Caulfield and Black, 2002) and similar is estimated in India too. Nevertheless, there has been a reduction in under-5 mortality in India as a number of key preventive activities to improve child health have been included in the Maternal and Child Health Programme by Govt. of India. These activities include antenatal care, post natal care, institutional delivery, appropriate immunization, framed under one umbrella Janani Sishu Suraksha Karyakram (JSSY) and Integrated Child Development Scheme (ICDS) which are implemented through web of public health facilities namely District hospitals, sub-district hospitals, community health centers (CHC) and primary health centers (PHC) at the lowest level. Table 6 portrays one of the activities i.e. immunization of children age 12-23 months in public health facilities. In rural areas, the percentage of fully immunized children has increased in most of the states over the period of time. The increase is highest in Punjab (by 31 percent point) followed by Meghalaya (26 percent point), Andhra Pradesh & West Bengal (24 percent point each), Manipur (19 percent point), Goa & Sikkim (17 percent point each), Arunachal Pradesh & Mizoram (15 percent point each) and Kerala & Karnataka (13 percent each). However, the coverage in Tamil Nadu and Himachal Pradesh has decreased by 17 percent and 4 percent points respectively. It is also evident from the table that percentage of children received most of the vaccination from public health facility has marginally increased in the rural parts of all the states from NFHS-3 to NFHS-4. The highest increase is observed in Kerala (from 82 to 96 percent), followed by Tripura (87 to99 percent) and Tamil Nadu (84 to 92 percent).

Discussion and Conclusions

It is evident from the study that the utilization of public health facilities has increased over time and this is true across various socio-economic groups and geographic regions. The accessibility of public health facilities has also tremendously increased over time that has decreased the barriers in the utilization of healthcare services. We can conclude that there is remarkable improvement in the availability and accessibility of the government health facilities. However, utilization of public health facilities is higher in households in which household head is less educated, scheduled tribe households and poorer households, which might be because the outreach programme of the government has been a success to provide proper healthcare services. Moreover, expenditure on health through private health facility would be unaffordable for the poor. The healthcare system is extremely privatized in India and the vulnerable population has very limited access to it, which is supported by the finding of this study that a large majority of rural households mainly goes for treatment to government health facilities when any household members fall sick supports it. However, this percentage is found decreasing with increasing education of head of household as well as household belonging to urban areas. Though the universal health coverage of public health facility ensures better services for all, the

issues faced by population such as perceived poor quality of care, doctors not available and waiting time too long has not been taken care off. This further fails to promote integration of the delivery of care resulting into people opting private health facility.

The finding also reveals that maternal health services provided through ANC, PNC and institutional delivery, has also improved over the period. However, very less women received it in public health facility. The percentage of women who received 3 or more antenatal check-ups during their last pregnancy increases with mother's education and this has been observed in both rounds of the survey. It is evident that education has been playing a vital role in sensitizing women for themselves and their children health benefits since ages. The women who belong to richest category and who had insurance coverage were more likely to have visited public health facility for ANC, PNC and institutional delivery which shows a great impact of insurance. The healthcare system in developing country like India largely runs on the finance that is out of pocket expenditure. Many a times, the sole earner of the family does not suffice to provide better healthcare services to the family members. Additionally, the government expenditure on health is also very limited in the country. This in return possesses a greatest barrier to access health facility, plunging a sizeable section of society into poverty and impoverishment leading to direct loss of household well-being.

The study also counters on the point that accessibility of healthcare facilities are more pronounced in rural parts of Southern India; however, utilization of public health facilities is higher in north-eastern region compared with other parts of the country. Inter-personal relationship between the provider and the client is the key to improved client satisfaction. Literatures suggest that healthcare facility is more clients oriented in southern parts of the country comparatively. [Indian Healthcare Review]. Higher utilization of public health services in North-eastern states might be due to the tribal belt which most of the time lack exposure or access to private healthcare facilities due to poor infrastructural resources.

This study on demographically developed states shows the unfortunate condition of public healthcare system and shift towards private facilities. Though, accessibility has increased considerably over a period of time the scope for improvement is immense. It can be noted that if this situation pertains in demographically developed states, one can view the condition of the EAG states. To achieve the targets it is clear that there is an urgent need for greater investment in the public healthcare delivery. The government to address this issue has initiated several policies and programs. However, many of these programs are questionable, as they have not attained the predefined goals mainly due to several gaps in their implementation. Monitoring the working of a public health facility would help understand the reasons for underutilization of such facilities. This would facilitate the government to take corrective measures to improve healthcare utilization. Along with accessibility, good quality of care is also needed to maximize the utilization and reach. Therefore, the National Health Policy 2017 tends to assure progressive universal health coverage through increasing health budget and reducing financial barriers and aligning private sector along with public health goals to make it more inclusive.

Table 1: Percentage of villages having different health facilities within the village* by states

States	Sub-Health Centre		Primary Health Centre		Any Health Facility	
	DLHS-3	**DLHS-4**	**DLHS-3**	**DLHS-4**	**DLHS-3**	**DLHS-4**
Andhra Pradesh	46.6	73.1	10.6	23.9	46.7	73.6
Arunachal Pradesh	41.2	27.7	16.7	13.2	44.4	44.9
Goa	49.0	90.0	14.3	50.0	65.3	94.0
Haryana	46.6	59.9	12.6	22.7	49.1	68.6
Himachal Pradesh	45.3	51.9	8.4	19.8	49.1	65.3
Karnataka	37.2	58.1	14.4	22.3	42.1	61.6
Kerala	99.6	84.2	79.1	75.5	99.8	97.4
Maharashtra	37.5	48.0	11.4	19.5	42.6	55.2
Manipur	28.4	26.8	10.3	16.8	39.3	47.6
Meghalaya	27.8	46.1	13.7	9.8	48.5	53.0

Mizoram	64.5	65.8	13.9	15.8	69.8	67.4
Punjab	40.0	54.5	4.9	16.2	43.8	59.9
Sikkim	56.3	50.4	9.8	15.3	64.5	63.4
Tamil Nadu	58.2	56.3	18.7	30.9	61.8	70.5
Tripura	62.3	87.2	23.4	22.4	78.3	93.6
West Bengal	38.6	66.5	5.0	10.9	40.0	66.7
Total	**46.8**	**57.0**	**16.0**	**23.0**	**51.2**	**65.0**

*: Within 2 Km of village boundary

Table 2: Percentage of rural households that mainly go for treatment to government health facilities if any member of household get sick according to some socio-economic characteristics

Socio-economic Characteristics	DLHS-3				DLHS-4			
	%	**Odd Ratios**	**L**	**U**	**%**	**Odd Ratios**	**L**	**U**
Education of head of households								
Non-literate®	52.6				51.3			
Below 5 years	61.6	1.39***	1.16	1.67	60.5	1.43***	1.35	1.50
5-9 years	58.4	1.47***	1.22	1.77	59.3	1.43***	1.36	1.50
10-12 years	48.6	1.43***	1.19	1.72	53.5	1.33***	1.26	1.40
13 or more years	40.3	1.22**	1.01	1.48	52.1	1.27***	1.19	1.35
Caste								
SC®	54.8				57.7			
ST	83.4	1.43***	1.36	1.50	74.1	1.09***	1.05	1.14
OBC	49.5	0.75***	0.72	0.78	52.3	0.78***	0.76	0.81
Other	42.1	0.74***	0.72	0.77	48.9	0.77***	0.75	0.80
Religion								
Hindu®	51.4				56.6			
Muslim	48.3	0.96*	0.91	1.00	56.8	1.12***	1.06	1.18
Christian	82.3	0.75***	0.71	0.79	75.5	0.81***	0.77	0.86
Others	55.7	0.73***	0.70	0.76	51.6	0.57***	0.55	0.60
States region								
Eastern®	46.7				56.5			
Western	40.0	0.77***	0.73	0.81	46.0	0.72***	0.68	0.76
Northern	37.5	1.28***	1.21	1.34	50.2	1.62***	1.53	1.71
North-eastern	91.4	12.17***	11.39	13.00	84.3	4.97***	4.64	5.33
Southern	53.5	1.51***	1.45	1.58	56.5	1.20***	1.14	1.27
Standard of living index								
Poorest®	63.6				66.7			
Poorer	63.9	0.90***	0.86	0.93	63.6	0.91***	0.87	0.95
Medium	63.1	0.84***	0.81	0.88	59.1	0.83***	0.79	0.86
Richer	54.7	0.69***	0.66	0.72	54.3	0.71***	0.68	0.74
Richest	33.3	0.37***	0.35	0.39	44.8	0.49***	0.47	0.51
Coverage of Insurance!								
No®	56.4				57.9			
Yes	45.6	0.83***	0.78	0.87	57.3	1.07***	1.04	1.10
Any Health Facility								
No®	52.4				57.2			
Yes	61.2	0.95	0.89	1.01	58.2	1.39***	1.32	1.46
Sub-Health Centre								
No®	57.9				59.3			
Yes	60.7	1.17***	1.10	1.25	56.8	0.71***	0.67	0.74
Public Health Centre								
No®	57.5				56.8			
Yes	66.9	1.57***	1.52	1.63	61.5	1.39***	1.35	1.43
Total	**55.7**				**57.8**			

Note: ! Represents any member of households having insurance coverage, ®Denote as the reference category, L-Lower value, U-Upper value of confidence interval and the value at *p<0.10, **p<0.05 & ***p<0.01 statistically significant.

Table 3: Percentage of rural households having reasons for not going to government health facility if any member of household falls sick according to some socio-economic characteristics

Socio-economic Characteristics	Doctor not available		Waiting time too long		Poor quality of care	
	DLHS-3	**DLHS-4**	**DLHS-3**	**DLHS-4**	**DLHS-3**	**DLHS-4**
Education of head of households						
Non-literate	8.0	15.3	20.0	15.1	26.7	17.2
Below 5 years	11.3	10.3	28.9	14.9	34.3	14.2
5-9 years	11.2	11.5	33.8	16.7	33.2	15.1
10-12 years	11.7	14.1	36.0	19.9	33.0	17.6
13 or more years	11.9	15.8	37.2	21.7	33.1	18.8
Caste						
SC	10.7	12.0	32.0	17.3	31.9	16.2
ST	13.2	7.1	24.3	7.9	32.2	8.3
OBC	11.2	14.0	35.2	19.0	39.5	19.0
Other	11.8	15.6	33.1	23.0	30.6	19.7
Religion						
Hindu	10.9	12.5	32.5	17.0	37.0	16.3
Muslim	10.6	12.3	31.8	17.8	34.6	16.8
Christian	12.7	6.0	27.1	8.4	26.8	8.0
Others	14.6	15.4	38.9	22.8	20.5	19.9
States region						
Eastern	10.5	8.9	26.7	17.7	17.1	12.1
Western	8.2	12.8	27.6	18.6	32.9	14.2
Northern	12.0	16.5	37.9	23.6	27.8	20.0
North-eastern	17.0	4.1	25.0	5.0	23.9	5.7
Southern	12.3	13.3	34.4	16.8	45.4	19.0
Standard of living index						
Poorest	10.7	8.0	26.0	10.2	37.2	10.9
Poorer	11.1	10.1	29.3	12.9	37.7	13.2
Medium	10.8	11.7	31.3	16.1	36.3	15.8
Richer	11.3	13.4	34.7	19.0	34.3	17.8
Richest	12.5	18.3	38.4	27.0	29.5	22.6
Coverage of Insurance!						
No	11.4	11.7	33.0	17.2	33.9	15.8
Yes	13.1	12.7	33.3	16.3	38.4	16.6
Any Health Facility						
No	10.8	12.1	34.4	17.6	34.3	16.2
Yes	12.8	12.6	29.9	16.6	34.0	15.9
Sub-Health Centre						
No	11.3	12.1	29.7	16.8	34.6	15.4
Yes	12.6	12.3	30.0	17.1	33.8	16.4
Public Health Centre						
No	11.8	12.4	30.0	17.3	34.5	16.4
Yes	14.2	11.8	29.0	15.6	34.9	14.4
Total	**11.5**	**12.2**	**33.0**	**16.9**	**34.2**	**16.0**

Note: ! Represents any member of households having insurance coverage

Table 4: Percentage of rural women age 15-49[1] who received 3 or more antenatal check-up (ANC) during last pregnancy by socio-economic characteristics

Socio-economic Characteristics	Three or more ANC								Received in Public Health Facility	
	DLHS-3				DLHS-4				DLHS-3	DLHS-4
	%	Odd Ratios	L	U	%	Odd Ratios	L	U	%	%
Age group										
15-19®	80.5				88.1				67.6	64.3
20-24	82.7	0.98	0.88	1.10	86.4	0.89	0.74	1.07	65.1	64.2
25-29	83.6	0.95	0.85	1.07	85.9	0.91	0.76	1.10	62.5	64.6
30-34	82.8	0.91	0.79	1.04	85.5	0.97	0.79	1.18	62.4	65.0
35+	79.9	0.93	0.78	1.10	83.9	1.04	0.83	1.31	67.7	69.1
Mother's education	**85.9**				**87.3**					
Non-literate®	66.4				87.1				85.1	53.1
Below 5 years	75.5	0.93	0.56	1.56	83.5	1.13	0.88	1.45	80.2	75.4
5-9 years	83.3	1.21	0.73	2.02	86.0	1.39***	1.10	1.74	69.7	69.0
10-12 years	89.9	1.72	1.03	2.89	88.8	1.65***	1.31	2.08	53.8	59.3
13 or more years	94.5	2.87	1.67	4.92	90.6	1.90***	1.46	2.46	32.5	44.2
Caste										
SC®	78.8				83.9				74.0	70.0
ST	77.0	0.90*	0.80	1.01	81.6	0.84***	0.74	0.95	86.1	80.6
OBC	88.8	1.11**	1.01	1.22	89.4	1.11**	1.00	1.22	54.3	56.8
Other	81.6	1.07	0.97	1.16	87.3	1.31***	1.17	1.45	55.1	53.3
Religion										
Hindu®	83.6				87.7				62.6	63.8
Muslim	82.1	0.85***	0.75	0.96	86.5	0.93	0.79	1.10	55.3	60.5
Christian	81.7	1.28***	1.12	1.45	81.7	0.93	0.80	1.07	81.3	77.1
Others	78.1	1.36***	1.24	1.50	78.2	1.16***	1.05	1.29	65.0	65.1
States region										
Eastern®	71.0				87.0				80.9	75.0
Western	83.4	1.29***	1.15	1.45	88.8	0.74***	0.62	0.89	58.3	64.9
Northern	69.2	0.37***	0.33	0.42	74.6	0.21***	0.18	0.25	62.6	60.3
North-eastern	77.9	0.79***	0.69	0.90	80.2	0.50***	0.42	0.61	87.9	84.2
Southern	95.3	6.14***	5.35	7.04	92.3	1.17*	0.99	1.38	52.0	57.1
Standard of living index										
Poorest®	74.2				82.0				80.7	76.9
Poorer	78.9	1.26***	1.14	1.39	87.0	1.25***	1.12	1.39	75.2	70.9
Medium	82.0	1.54***	1.39	1.71	88.1	1.38***	1.22	1.57	71.2	67.1
Richer	86.3	1.95***	1.75	2.18	87.3	1.53***	1.36	1.73	60.8	60.0
Richest	89.2	2.76***	2.43	3.13	85.5	1.74***	1.53	1.99	40.7	47.4
Coverage of Insurance!										
No®	82.2				84.6				65.2	66.6
Yes	91.4	1.05	0.88	1.25	90.2	1.23***	1.12	1.34	48.3	59.4
Any Health Facility										
No®	83.4				84.9				61.3	67.2
Yes	81.4	1.13	0.97	1.31	86.6	1.07	0.93	1.25	69.8	63.5
Sub-Health Centre										
No®	76.3				84.9				71.3	67.9
Yes	81.5	0.96	0.83	1.11	86.7	0.95	0.82	1.09	69.7	62.6
Public Health Centre										
No®	77.5				85.3				71.4	65.7
Yes	86.5	1.13**	1.02	1.25	88.1	1.08	0.98	1.19	64.1	61.9
Total	**82.7**				**86.0**				**64.2**	**64.9**

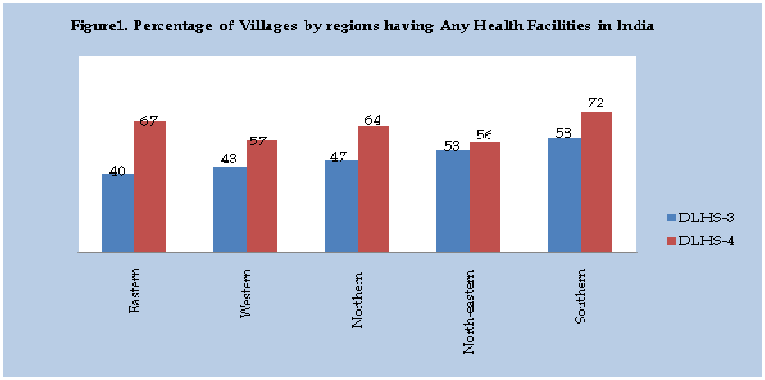
Table 5: Percentage of rural women age 15-49[1] who received institutional delivery during their last pregnancy by socio-economic characteristics

Socio-economic Characteristics	Institutional Delivery								Received in Public Health Facility	
	DLHS-3				DLHS-4				DLHS-3	DLHS-4
	%	Odd Ratios	L	U	%	Odd Ratios	L	U	%	%
Age group										
15-19®	60.7				81.3				35.5	57.9
20-24	64.4	0.81***	0.74	0.89	82.2	0.85***	0.73	1.00	35.0	55.1
25-29	64.0	0.76***	0.69	0.83	78.5	0.70***	0.59	0.82	32.9	50.8
30-34	63.3	0.79***	0.71	0.89	74.7	0.74***	0.63	0.88	31.7	47.2
35+	52.4	0.77***	0.67	0.88	60.9	0.66***	0.55	0.80	28.8	40.4
Mother's education									**36.3**	**52.6**
Non-literate®	25.0				75.1				17.4	43.6
Below 5 years	44.1	1.53	0.92	2.55	61.9	1.25**	1.04	1.49	31.5	49.1
5-9 years	65.9	2.59***	1.55	4.31	79.2	2.13***	1.80	2.51	40.1	56.7
10-12 years	81.8	4.07***	2.44	6.78	90.2	3.52***	2.96	4.18	36.6	52.8
13 or more years	93.6	8.78***	5.17	14.89	95.2	7.54***	5.97	9.53	24.5	39.3
Caste										
SC®	59.6				81.9				38.5	59.3
ST	39.7	0.61***	0.55	0.67	55.7	0.56***	0.50	0.62	33.2	45.1
OBC	75.4	1.21***	1.12	1.31	87.2	1.02	0.93	1.13	33.6	51.2
Other	69.5	1.18***	1.09	1.27	84.0	1.02	0.92	1.12	29.5	45.7
Religion										
Hindu®	66.7				84.1				34.8	55.5
Muslim	64.4	0.70***	0.63	0.77	71.7	0.50***	0.44	0.56	26.8	43.1
Christian	47.6	0.95	0.86	1.04	50.9	0.77***	0.70	0.86	35.4	38.1
Others	58.0	1.55***	1.43	1.68	71.1	1.26***	1.15	1.39	29.1	43.9
States region										
Eastern®	50.7				69.9				39.1	56.1
Western	65.4	0.98	0.88	1.08	88.9	2.24***	1.94	2.58	29.7	56.0
Northern	55.1	0.31***	0.28	0.34	77.7	0.44***	0.39	0.51	20.6	46.9
North-eastern	44.9	0.55***	0.49	0.61	49.2	0.54***	0.47	0.62	39.5	42.3
Southern	81.3	2.97***	2.69	3.28	90.8	3.04***	2.66	3.46	37.7	55.2
Standard of living index										
Poorest®	39.3				59.0				29.7	47.2
Poorer	51.1	1.45***	1.34	1.56	77.7	1.52***	1.40	1.65	34.2	57.9
Medium	61.9	2.05***	1.89	2.22	83.7	2.00***	1.80	2.21	38.9	56.8
Richer	74.0	2.94***	2.70	3.21	85.0	2.28***	2.06	2.52	38.0	52.0
Richest	85.1	5.09***	4.60	5.65	89.0	3.36***	2.99	3.77	26.2	41.1
Coverage of Insurance!										
No®	61.8				76.2				33.4	51.1
Yes	82.6	1.07	0.94	1.22	83.3	1.14***	1.05	1.23	33.6	50.9
Any Health Facility										
No®	65.3				72.9				33.4	49.4
Yes	58.4	1.01	0.90	1.13	80.6	1.11	0.97	1.26	33.3	52.0
Sub-Health Centre										
No®	48.8				73.5				29.3	50.1
Yes	59.8	1.15**	1.03	1.28	81.0	1.09	0.97	1.23	33.9	51.8
Public Health Centre										
No®	51.5				75.6				30.6	50.5
Yes	68.1	1.32***	1.22	1.43	85.5	1.33***	1.22	1.46	35.8	53.0
Total	**63.0**				**77.7**				**33.4**	**51.0**

Note:[1]Women who had their last live/still birth since 01-01-2004 for DLHS-3 & 01-01-2008 for DLHS-4, ! Represents any member of households having insurance coverage, ®Denote as the reference category, L-Lower value, U-Upper value of confidence interval and the value at *p<0.10, **p<0.05 & ***p<0.01 statistically significant.

Table 6: Percentage of rural children age 12-23 months who received full immunization by states

States	Children age 12-23 months who were fully immunized		Children age 12-23 months who received most of vaccinations from public health facilities	
	NFHS-3	**NFHS-4**	**NFHS-3**	**NFHS-4**
Andhra Pradesh	42.9	67.2	-	94.9
Arunachal Pradesh	21.1	36.4	95.4	95.1
Goa	73.0	90.1	82.9	86.4
Haryana	60.3	65.1	95.3	96.6
Himachal Pradesh	73.6	69.9	96.3	98.1
Karnataka	52.2	64.8	82.3	96.1
Kerala	69.4	82.0	66.0	81.7
Maharashtra	49.8	56.7	92.2	92.3
Manipur	42.8	61.7	92.8	92.9
Meghalaya	32.6	58.5	90.8	94.3
Mizoram	36.6	51.3	93.7	98.3
Punjab	58.1	89.3	91.5	94.3
Sikkim	66.7	83.7	98.9	95.1
Tamil Nadu	83.7	66.8	84.4	91.9
Tripura	47.9	51.2	86.6	99.2
West Bengal	62.8	87.1	96.4	99.0



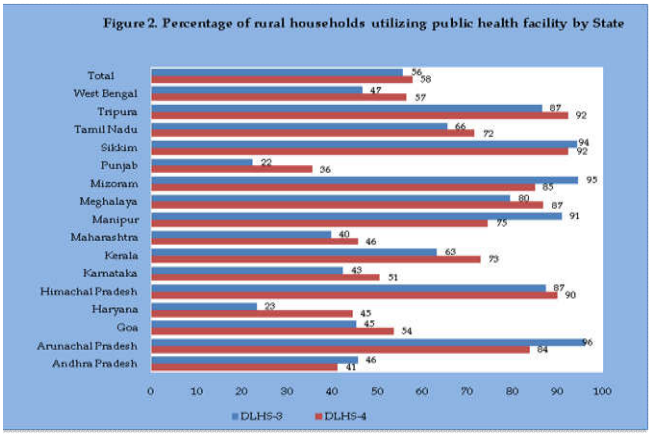


Figure 3a. Percentage of rural households not utilizing government health facility due to non availability of doctors by states

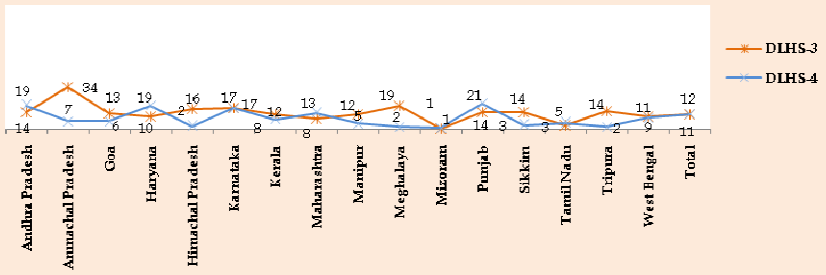


Figure 3b. Percentage of rural households having reasons as waiting time too long for not going to government health facility by states

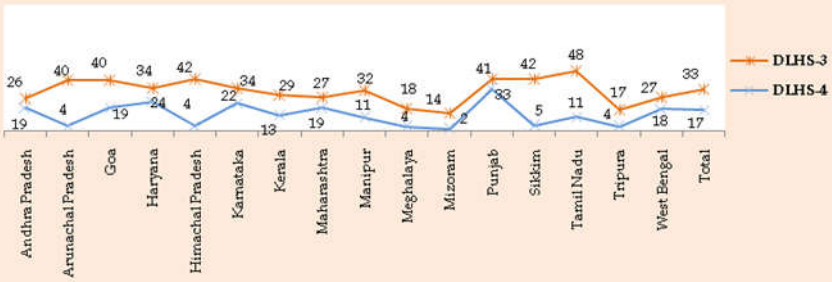


Figure 3c. Percentage of rural households having reasons as poor perceived quality of care for not going to government health facility by states

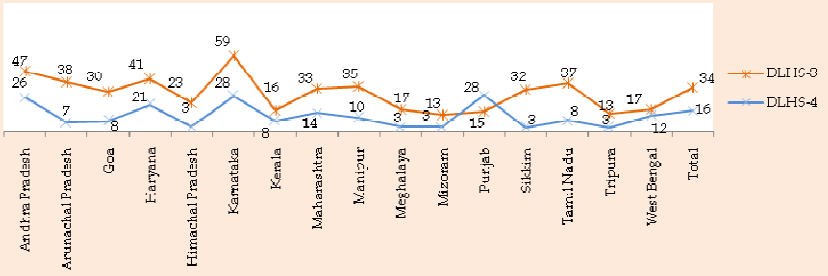
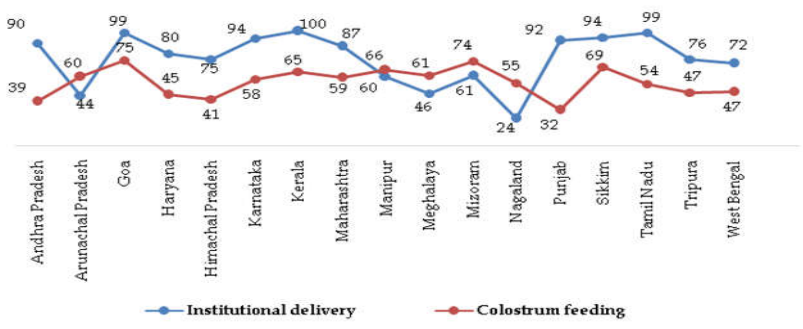
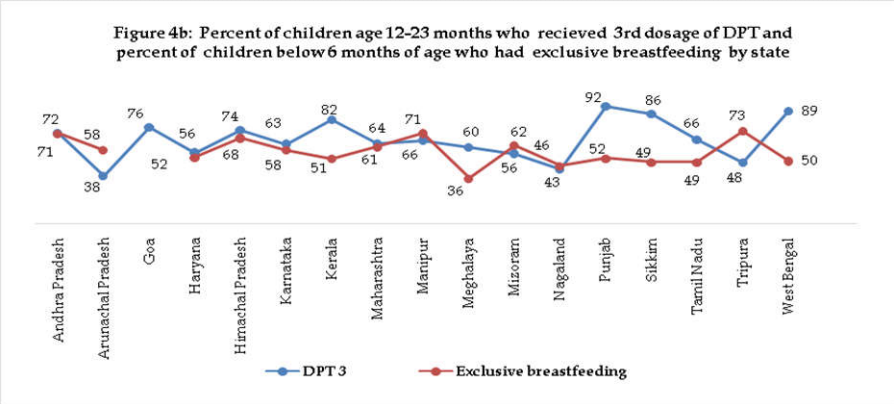


Figure4a.Prevalence of institutional delivery and colostrum feeding by state





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