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Utilization of Public Health Services in India: Evidence from National Family Health Survey

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Abstract: Inferring universal health coverage is an essential sustainable goal for countries to ensure healthy lives and promote well-being. The supply of the public facilities is never adequate to meet the growing demand in developing countries. However, the greater problem arises when the existing infrastructure is even less accessed. This study tried to highlight the underutilization of public health facilities in India both in the rural and urban areas and explored the reasons behind this situation. Poor quality of care and unavailability of health centres nearby were major concerns in the villages. The decisive factors in the urban areas were inconvenient timings of check-up and long waiting time. Highly educated heads and wealthier households preferred treatments in non-public health facilities. Increment in ANC4+ visit and institutional deliveries was noticed for all states of the country over ten years. Nevertheless, utilization of public health facility decreased with higher the mother's education. Health insurance scheme coverage was fairly low. Utilization of health care services not only differed according to the demographic and socio-economic characteristics of individuals but also on the accessibility and quality of the available services in a region. The government must understand this ground level reality before implementing new policies.

Keywords: Universal Health Care, underutilization of public health services and impediments to accessibility.

Introduction

The triad 'AAA' representing Availability, Accessibility, and Affordability to health care are the essential elements of the Universal Health Care system. Availability of healthcare system is delivery of health services to communities, families, individuals, most importantly to the sick and the needy by health professionals through prevention, diagnosis, and treatment. Accessibility refers to the timely service of available health facilities. Affordability is the cost that a person pays to an organisation for providing necessary health care (Institute of Medicine (US), 2003). In short, UHC provides health care without any financial hindrance to the user. It is identified essential for all countries to achieve sustainable development and global security by 65th World Health Congress, Geneva (WHO, 2012). Global coalitions around the globe stress the importance for saving lives, ending extreme poverty, building resilience against the health effects of climate change and ending deadly epidemics such as Ebola (Cheng, 2015). Nobel laureate, Amartya Sen, writes, "...like education, UHC is an important investment in human capital, which is necessary for economic growth and development; it lays the framework of opportunity for what Aristotle called "human flourishing" (Sen, 1979).The Affordable Care Act (ACA) (2010) structured "shared responsibility" between the government, employers, and individuals to ensure all Americans have access to affordable and good-quality health insurance (The Commonwealth

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Fund, 2017). The three levels of Australian government are jointly responsible for providing universal health care: federal; state and territory; and local. The federal government provides funding and indirect support to the states and health professionals, subsidizing primary care providers. The state and territorial government are responsible for public hospitals, ambulance services, public dental care, community health services, and mental health care (Dixit & Sambasivan, 2018). The Chinese central government has overall responsibility for national health legislation, policy, and administration, publicly financed insurance which covers primary, specialist, emergency department, hospital, and mental health care, as well as prescription drugs, and traditional medicine (Fang, 2018). The fee-for-service system includes a financial incentive covering care for patients with chronic diseases, and team ambulatory and home care in Japan (Matsuda, 2015).

In India, healthcare is one of the largest sectors in terms of revenue and employment and expanding rapidly (IBEF, 2019). Since independence, India has tried to achieve Universal health Coverage. The first mention was in the Bhore committee report which recommended a publicly financed national health services and system for comprehensive preventive and curative care for all (Bhore, 1946)the high-level expert group (HLEG), constituted by the Planning Commission of India (2010) recommended the development for various health sector viz. health financing, infrastructure, service norms, skilled human resources, access to access to medicines and vaccines, management and institutional reforms, and community participation (Planning Commission of India, 2012 and Singh, 2013). In 2018, 'Ayushman Bharat' programme aimed at addressing health holistically, in the primary, secondary and tertiary care system, covering both prevention and health promotion, the government is progressing towards the goal of Universal Health Coverage(GOI, 2017). The private sector accounts for more than 80 percent of total healthcare spending within India (Chakravarti, 2007). Estimates from household surveys show that, each year, around 100 million individuals are impoverished and another 150 million face severe financial difficulties due to direct health expenditure worldwide and more than 90 percent of people affected live in low-income countries (Xu et al., 2007). A recent survey says, only 29 percent of households have at least one usual member covered under health insurance or health scheme in India (IIPS & ICF, 2017). In 2015, an estimated 8 percent of the Indian population had been pushed below the poverty line by high out-of-pocket payments for health care (Kumar et al., 2015). Moreover, the health services that are provide in India have lot of challenges while accessing the facilities which are provided under different schemes for women and their children can take the benefits such as ANC services, institutional delivery of child, and child immunization. But the physical access, human power crisis, affordability and accountability become the major issues due to lack of knowledge and awareness (Kasthuri, 2018).

Hindrance to access in the financial, communal and cultural as well as regulations limits the utilization of services, even if they are available at the place (Gulliford et al., 2002). The main component to access any service is its physical reach which is defined by WHO as the ability of person to reach the facility within 5 km from the place of their residence or work (Munjanaja et al., 2012). One of the studies claimed that only 4 out of 10 patients were able to access the health care in-patient facility which is available within the limits of 5 km in rural India (Aitken et al., 2013). Further, Singh et al. (2016) found that when government fails to construct new health premises because of unavailability of land in the habitat ultimately leads to hindrances in the access to services. Due to severe shortage of workforce in the health sector and

uneven distribution of available human resource, an additional burden for accessibility of health care is created (Rao et al., 2011). Around 10 percent of the sanctioned posts for ANMs were lying vacant in 2018. In addition, one-fourth of the sanctioned positions for doctors at PHCs were also vacant at the time of reporting (MoHFW, 2018). Public health facilities are always cost effective. However, many public health facilities in India often lack the human resources, diagnostic equipments and drugs for complex situations. As a result patients often incline towards the growing private health care facilities. Few studies also conclude that persistent negative attitude towards Public health facilities in the country have ultimately led to their underutilization (Das and Hammer, 2007; Narang, 2011).

The government needs to understand the ground level reality to implement concerned policy and programmes in proper manner, which will benefit any person at any corner of the country. India faces enormous challenge to achieve UHC by 2022 like high disease prevalence, issues of gender equality, unregulated and fragmented health-care delivery system, non-availability of adequate skilled human resource, vast social determinants of health, inadequate finances, lack of inter-sectoral coordination and various political pull and push of different forces, and interests (Singh, 2013). This study attempts to understand the determinants for underutilisation of public health facilities in India on institutional deliveries, ANC4+ services, and full child immunization. Utilization of health care services not only differs according to the demographic and socio-economic characteristics of individuals but also on the accessibility and quality of the available services in a region. The study adds to the emerging literature of the dichotomy of public-private health care usage by giving a holistic outlook to the problem of underutilization of public health services in the country by analysing it from the receivers' viewpoint.

Methods

Data Source

Two rounds of National Family Health Survey in India (NFHS-3&4) conducted in 2005-2006 and 2015-2016 were. The surveys give information on demographic and health indicators at the national, regional, state and district levels (NFHS-4) from a nationally representative sample across the country. NFHS-3 collected information from sample of 109,041 households, 124,385 women age 15-49, and 74,369 men age 15-54 (IIPS and Macro International, 2007). While, NFHS-4 collected information from a sample of 601,509 households, 699,686 women age 15-49, and 112,122 men age 15-54 (IIPS and ICF, 2017).

Statistical Analysis

The analysis was done at the uni-variate and bi-variate level. At the uni-variate level, the percentage distribution of the household and ever-married women having accessibility to different health facilities and barriers to accessibility was shown. At the bi-variate level, logistic regression was performed to examine the statistically significant relationship between utilization of health care facility and independent variables by the household members in case of morbidity, maternal health issues and chronic illness. The variables like type of health facility, households that mainly go for treatment and having reasons for not going to public health facility like viz. no nearby health facility, facility timing not convenient, health personnel often absent, waiting time too long, poor quality of care, antenatal coverage, institutional delivery, full immunisation

coverage and types of health insurance coverage viz. Employees State Insurance Scheme, Central Government Health Scheme, State Health Insurance Scheme, Rashtriya Swasthya Bima Yojana, and Community Health Insurance Programme were taken as response variables for this study. Variables like type of residence, education of head of households and women, the age of head of households and women, marital status of head of households, caste, religion, card accessibility of below poverty line, wealth quintile and national regions were considered as predictor variables.

Results

Utilisation of Public Health Care Services according to Background Characteristics

Table 1 represents utilization of public health care facilities in accordance to different background characteristics. About 52.2 percent of rural households utilised public health facilities whereas that for urban households was 45.8 percent. Government health care facilities were significantly more utilised in the rural sector than the urban areas. Age of the head of the household did not influence in the choice of accessing health care facility but with increasing age of the head, the chances of using public health facilities significantly increased. About 62 percent households with a highly educated head preferred non-public health facilities. The chance of utilising public health facilities significantly was 27 times lower for higher educated individuals than heads with no education. According to religion, 64 percent of the households other than Hindu and Muslim had access to public health facilities. More than half the total Muslim households accessed public health facilities; the percentage was slightly lower for Hindu households. However, chances of utilisation of public health facilities were significantly lower for Muslim and other religions than Hindu households. Access to public health facilities was the maximum for Scheduled Tribe households (68%). There were significantly higher chances of ST households (1.47, p-value<0.01) to utilize public health facilities while OBC and households from other castes had significantly less chances than SC households. With increasing wealth quintile, rich households accessed less of public health facilities (39.1%) and had significantly less chances of utilization than poor households. About 54 percent of the households with minimum one member having BPL cards accessed public health facilities. In the Indian context, access to both public and non-public health facilities remained almost equal but region-wise variation was prominent with 79.5 percent of households from the north-east accessed public health facilities, and 60.4 percent of households of western India used non-public health facilities. However, chances of utilization of public health facilities were significantly high in the southern states (1.55, p-value<0.01) than the eastern part of the country.

Table 1: Utilization of public health care facilities

Background Characteristics	Public health facility utilization (percentage)	Utilization of public health facilities
		OR(L-U)
Type of residence		
Urban®	45.8	
Rural	52.2	1.17***(1.16-1.19)
Age of head of households		
14 – 20®	48.7	
21 – 30	49	1.16***(1.07-1.26)
31 – 40	49.8	1.22***(1.12-1.33)
41 – 50	50.5	1.29***(1.19-1.41)
51 – 60	50.8	1.31***(1.21-1.43)
61 and above	50.2	1.31***(1.20-1.43)
Education of head of households		
No education®	50.9	
Primary	54.7	1.20***(1.18-1.22)
Secondary	50.5	1.09***(1.07-1.10)
Higher	38.4	0.73***(0.71-0.75)
Religion		
Hindu®	47.6	
Muslim	52.5	0.92***(0.90-0.94)
Others	63.5	0.69***(0.67-0.70)
Caste		
SC®	49.5	
ST	68.4	1.47***(1.44-1.50)
OBC	42.6	0.75***(0.74-0.76)
Other	45.2	0.93***(0.91-0.95)
Marital status of head of households		
Never married®	53.7	
Currently married	49.5	0.92***(0.86-0.96)
Formerly married	53.7	1.01(0.96-1.05)
Wealth quintile		
Poor®	53.2	
Medium	50.4	1.00(0.99-1.02)
Rich	39.1	0.74***(0.72-0.75)
BPL card		
No®	47.9	
Yes	54	1.09***(1.08-1.11)
National region		
Eastern®	47	
Western	39.6	0.83***(0.81-0.85)
Northern	42.3	0.87***(0.86-0.88)
North-eastern	79.5	4.40***(4.30-4.51)
Southern	53.5	1.55***(1.52-1.58)
India	**50.2**	

Note: ®: Reference Category, OR-Odds ratio, *** “0.01”, ** “0.05” and * “0.10”.

Under Utilisation of UHC – Reasons for not accessing the public health facilities

Table 2 depicts the reasons for not accessing public health facilities by households according to the background characteristics. Households in urban India accessed more non-public health facilities. Long waiting hours (48%) at the centre was the chief reason for this shortage of usage. More than half of the rural households reported poor quality of care provided in the centres, thus not accessing public health facilities. Poor quality of care in urban areas and unavailability of health facilities nearby in rural areas were the other important reasons for the less access of public health facilities. The utilization of non-public health facilities decreased gradually with increase in the age of the head of the household. Level of education played a significant role in choice of health care facility and with increase in level of education of the head of the household, chances of not accessing public health facilities increased subsequently. Poor quality of care in the government facilities was one of the main reasons for less access with higher education. On the basis of religion, more than half the total Hindu households used non-public facilities. No nearby health facilities and poor quality of treatment in public health centres were the main reasons. Utilization of non-public health facilities was the least among ST households and the main reason for the underutilization was the unavailability of healthcare facilities nearby. For other households, poor quality of care was the main reason for not accessing public health facilities. Rich households utilised the non-public health facilities the most (61%). Poor quality of care and long waiting hours in public facilities were reported by this category of households as the main reasons for not accessing the government facilities. Poor households accessed more of public health care but poor quality of care and unavailability of health centres nearby obliged them to utilize the non-public facilities more. BPL households used less of non-public health facilities. At the national level, the western states used the maximum of non-public health facilities (60.4%), even more than the national average (49.8%). The north-eastern states (79.5%) used the maximum of public health care facilities in the country. Inaccessibility of public facilities was reported the most in the western states whereas poor quality of care in public centres was the reason for underutilisation in the north-eastern and national levels.

Access to Maternal Health Care

The utilisation of ANC4+ among Indian women increased in ten years, in both rural and urban areas but the percentage of urban women using ANC4+ services remained substantially higher in comparison with their rural counterpart (2015-16) (Table 3). However, utilisation of public health facilities for ANC4+ services was more in the rural regions, which increased almost 10 percent in the decade. Institutional deliveries in urban regions were higher than the rural India according to the latest statistics. A tremendous increase in utilization of public health facilities for institutional deliveries in rural India, from 18 percent to 56 percent in ten years was a remarkable achievement. Though age-wise utilisation of ANC4+ services did not show extreme variation, there was a notable decrease in the percentage of women going for institutional deliveries with increasing age. It also showed a gradual decrease in utilisation of public health facilities from 62.5 percent in 15-19 years to 39.6 percent in 40-49 years in this category. Mother's education played a significant role in utilization of ANC4+ services as well as institutional deliveries. More than 70 percent higher educated women received ANC4+ services and 94.5 percent of them went for institutional deliveries in 2015-16. However, the utilization for public health facilities for these services among the highly educated women remained extremely less compared to the uneducated in both the categories. There was

considerably higher utilization of ANC4+ services and institutional deliveries by women of other religions than Hindu or Muslim. Nevertheless, higher public health facility utilization was noted among the women in ST group. In the decade, utilization of public health facilities for ANC4+ services and institutional deliveries considerably increased for all background characteristics.

Table 2: Reasons for not accessing public health care facilities by households according to background characteristics

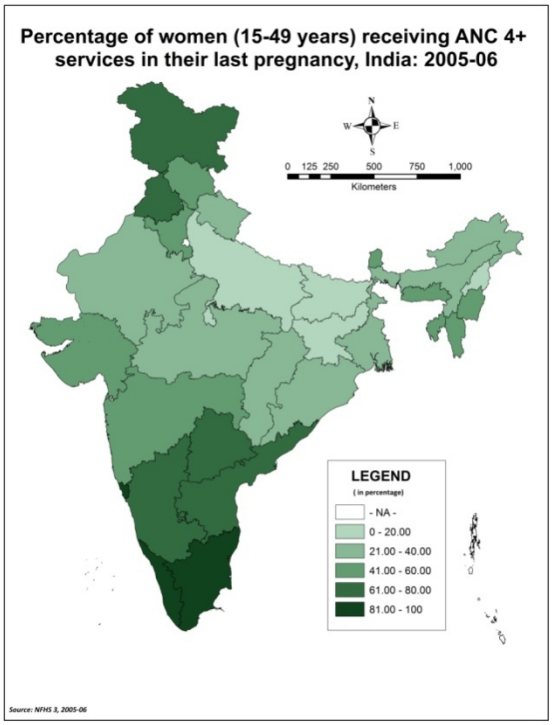
Background Characteristics	Non-public health facility utilization (percentage)	Reasons for not going to Public Health Facility (percentage)				
		No nearby facility	Facility timing not convenient	Health personnel often absent	Waiting time too long	Poor quality of care
Type of residence						
Urban	54.2	38	27.2	14.5	48.1	46.1
Rural	47.8	48.2	24.9	15.4	36.7	51.1
Age of head of households						
14 – 20	51.3	44.4	23.1	10.7	37.8	45.4
21 – 30	51	46.1	24.8	13.7	39.2	48.5
31 – 40	50.2	45.5	25.2	14.5	39.8	48.9
41 – 50	49.5	44.3	26	15.2	40.9	48.7
51 – 60	49.2	43.8	25.8	15.6	41.6	50.1
61 and above	49.8	44.6	26.3	16.1	40.8	50.8
Education of head of households						
No education	49.1	49.2	23.7	14	37	50.7
Primary	45.3	46.7	24.6	14.1	38.7	48.9
Secondary	49.5	43.2	26.4	15.9	42.4	49
Higher	61.6	36.2	30	16.8	45.9	48.7
Religion						
Hindu	52.4	45.1	26	15.3	39.8	49.7
Muslim	47.5	44.8	23.7	13.8	41.1	51.2
Others	36.5	41.3	25.2	15.3	46.1	44.5
Caste						
SC	50.5	46.7	24.4	14.2	40.2	51.3
ST	31.6	47.1	23.4	13.9	34.9	41
OBC	57.4	45.2	25.9	15.5	39.3	51.2
Other	54.8	41.3	27.2	15.8	45.5	49.9
Marital status of head of households						
Never married	46.3	41.7	23.3	13.6	42.5	43.4
Currently married	50.5	44.6	25.9	15.3	40.7	49.8
Formerly married	46.3	46	24.3	14.1	39.5	47.9
Wealth quintile						
Poor	46.8	50	23.1	13.7	34.7	50.6
Medium	49.6	41.6	26.9	15.5	43.7	47.9
Rich	60.9	37.8	29.6	18	48.9	49.9
BPL card						
No	52.1	43.1	25.4	14.7	42.5	49.6
Yes	46	47.7	26.3	15.8	36.9	49.2
National region						
Eastern	53	49.2	28.2	15.7	37.1	50.6
Western	60.4	42.1	24.5	11.6	41	35.4
Northern	57.7	45.3	23	14.8	41.8	55.3
North-eastern	20.5	36.2	24.1	12.6	36.7	37.8
Southern	46.5	41.8	34.6	19.4	42.3	41.1
India	**49.8**	**44.7**	**25.7**	**15.1**	**40.6**	**49.4**

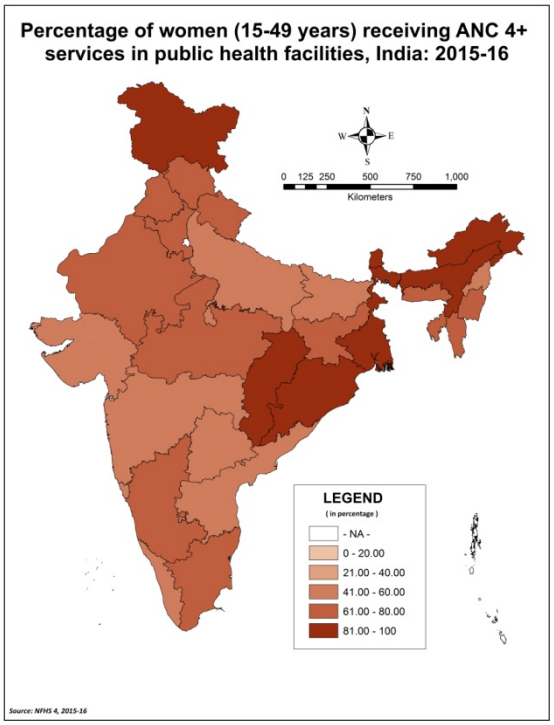
Table 3: Percentage of women aged 15-49 who received ANC4+ services and institutional deliveries during their last pregnancy in any public health facility by background characteristics

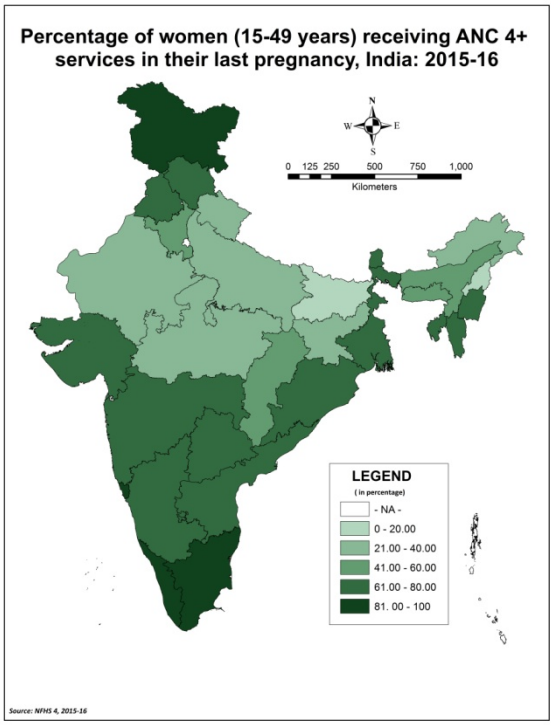
Background Characteristics	Utilization of ANC4+ services				Utilization of Institutional deliveries					
	Percentage		Within public health facilities		Percentage		Within non-public health facilities		Within public health facilities	
NFHS	3	4	3	4	3	4	3	4	3	4
Type of residence										
Urban	48.4	62.3	50.8	56.5	70	87.5	36.9	38.3	33.2	49.2
Rural	22	40.8	64	73.7	32	73.4	13.6	17.1	18.4	56.3
Age group										
15 – 19	25.7	45.2	65.2	75	36.7	80.2	15.8	17.7	21	62.5
20 – 29	29.6	47.6	58.1	68.4	44.3	79.5	20.7	22.7	23.5	56.8
30 – 39	29.6	45.7	58.9	65.7	40.7	73.6	19.8	24	20.9	49.6
40 – 49	17.6	31.2	75	65.5	23.1	55	10.3	15.4	12.8	39.6
Mother's education										
No education	12.6	26.2	72.6	79	19.5	60.8	7.7	10.3	11.8	50.4
Primary	24.9	39.5	70.8	77.3	36.4	70.7	11.5	13.7	24.9	57
Secondary	44.1	55.7	56.3	69.2	61.8	85.1	29.1	25.3	32.7	59.8
Higher	71.6	70	34.2	44.3	89.6	94.5	63.8	55.3	25.8	39.2
Religion										
Hindu	30.2	46.3	59.2	66.7	43.5	80.4	20.7	23.6	22.8	56.8
Muslim	25.6	46.1	56.6	70.9	38.7	70.4	18.8	21.5	19.9	49
Others	27.3	48.6	59.4	70.6	39.3	65.8	16.8	18.8	22.5	47
Caste										
SC	23.3	43	68.2	74.6	36.4	77.8	13.8	16.5	22.6	61.3
ST	17.7	41.1	74.9	80.9	23.9	63.2	6	9.6	17.9	53.6
OBC	28.1	43.9	57	63.5	42.1	79.9	22.3	26.4	19.8	53.5
Other	39.7	57.6	51.2	62.1	55.2	82.3	28	31.1	27.2	51.3
National region										
Eastern	19.4	35.9	75.4	72.7	31.2	71.3	12.6	16.8	18.6	54.5
Western	46.9	71.9	45.9	46.7	68.4	89.2	42	47.8	26.4	41.4
Northern	19.9	40.8	62.5	70.5	30	77.8	14.6	20.9	15.4	57
North-eastern	25.5	47.5	73.5	78.8	34.9	65.6	7.6	12.7	27.3	52.9
Southern	58.8	77.4	51.7	60.3	75.2	95.8	40.5	41.7	34.7	54.2
India	**29.1**	**46.5**	**59**	**67.8**	**42.2**	**77.1**	**19.8**	**22.7**	**22.3**	**54.4**

Note: Deliveries in Non-public health facilities do not include home deliveries and 3 & 4: Data from NFHS 3 & NFHS 4 respectively

Figure 1: Utilization of ANC4+ services in their last pregnancy in public health facilities, India







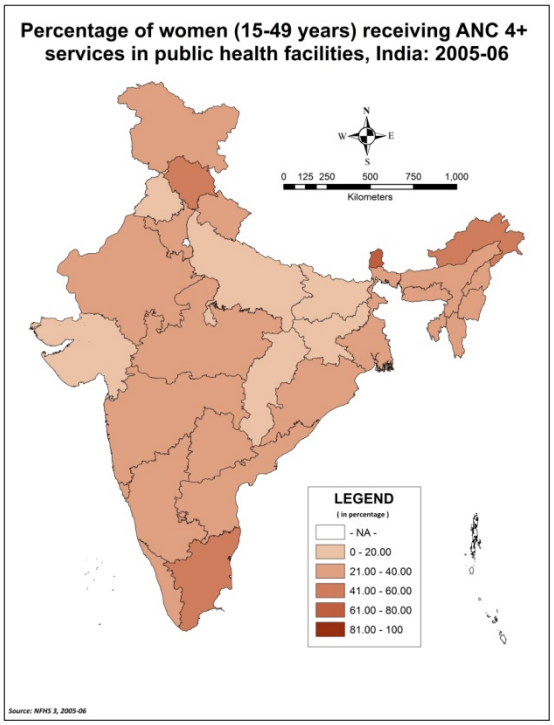
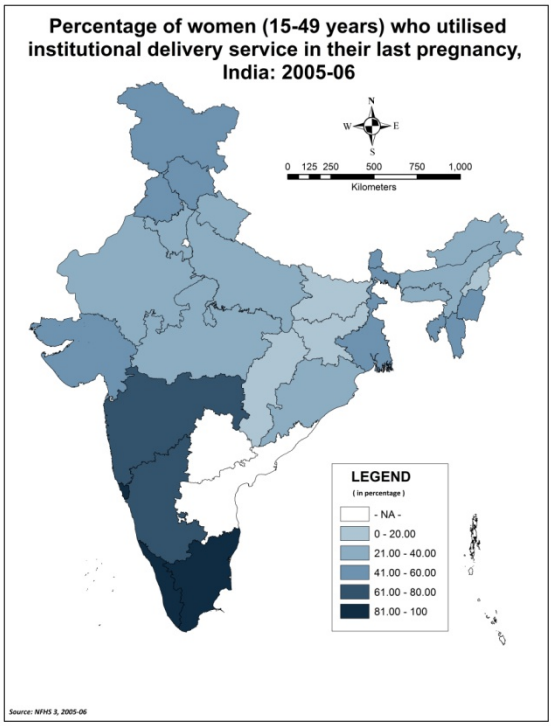
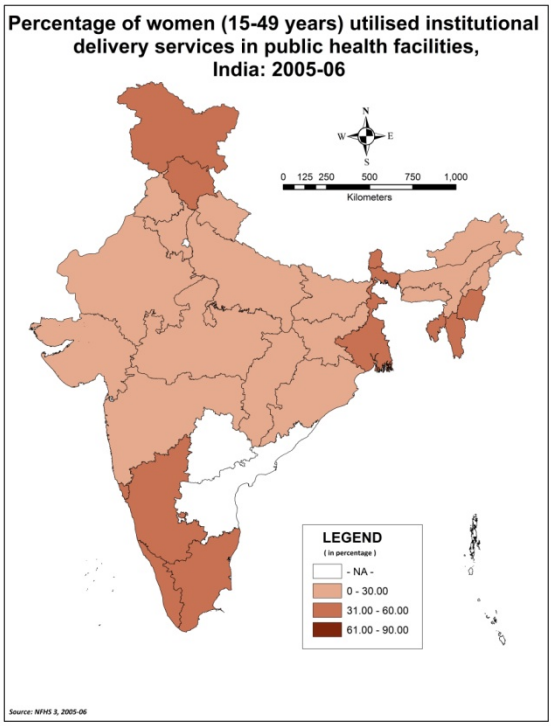
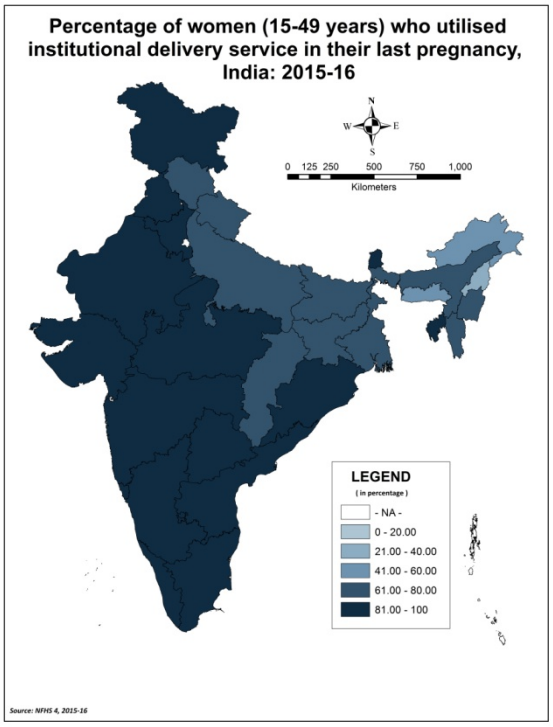
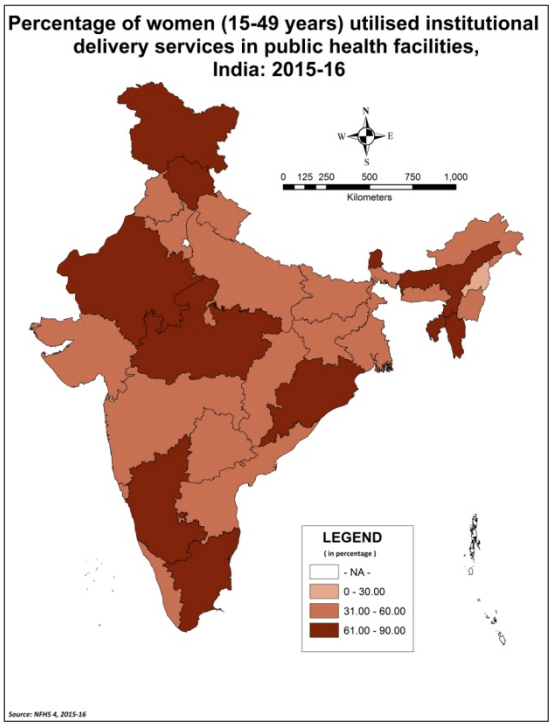


Figure 2: Utilization of institutional delivery services in their last pregnancy in public health facilities, India









At the national level, about 46.5 percent pregnant women used ANC4+ services and 77.1 percent went for institutional deliveries in 2015-16. However, regional variation was huge, with 77.4 and 71.9 percent of the pregnant women in the southern and western states accessed ANC4+ services and lowest in eastern India (36%). More women in the southern and the western states had institutional deliveries (95.8% and 89.2%). Except western India, utilization of the services from public health facilities was more than the non-public health facilities for these services. The state wise access to ANC4+ services during the last pregnancy of the woman, showed an overall increase except in Goa, Kerala, Tamil Nadu and Uttarakhand (Figure 1); but each of these states individually recorded more than 80 percent ANC4+ usage in 2015-16. The utilization of public health facilities for ANC4+ services was low in 2005-06. It increased in 2015-16, and nine states recorded 80 percent or more utilization of the public sector. The access in north eastern and eastern states increased dramatically over the decade. Southern India lagged behind in the utilisation of public health facilities

Institutional deliveries in 2005-06 were lowest in Nagaland (11.6 %). Chhattisgarh, Jharkhand, and Bihar recorded less than 20 percent for the same. Kerala (99.3 %), Goa (92.3 %) and Tamil Nadu (87.8 %) had the highest institutional deliveries. It increased in the next ten years in India from 42.2 percent to 77.1 percent. Five states (Andhra Pradesh, Maharashtra, Telangana, Sikkim, and Punjab) recorded more than 90 percent institutional deliveries. Holistically, the public sector utilization increased from 22.3 percent in 2005-06 to 54.4 percent in 2015-16 (Figure 2).

Access to Child Care Services

The percentage of children receiving full immunisation increased from 43.5 percent in 2005-06 to 62 percent of the total in 2015-16 for India (Table 4). Nagaland (21%), Uttar Pradesh (23%), Rajasthan (26.5%) and Arunachal Pradesh (28.4%) in 2005-06 had the lowest percentage of children in this category. Even after ten years, Nagaland (35.7%) and Arunachal Pradesh (38.2%) did not show much progress. Percentage of child immunization decreased in Haryana, Himachal Pradesh, Maharashtra and Uttarakhand in the decade, with a very steep decline for Tamil Nadu (80.9% to 69.7%). Over 80 percent of children in Punjab, Goa, West Bengal, and Kerala were immunised in 2015-16. Vaccination from public health facilities in India increased from 82 percent to 90.7 percent in ten years. Utilization of public health facilities were more in the northeast India in 2005-06, however, it declined after a decade. Accessing public health facilities for child immunization was over 70 percent in all states of India except Kerala (66%) in 2005-06. It increased over the decade for all states, except for Kerala (77.6%) and Goa (77.2%). Interestingly, a number of high performing states in 2005-06 witnessed a decline in public health facility utilization for these services in 2015-16. Odisha (98.3 %) had the highest access to public health facilities for child immunization.

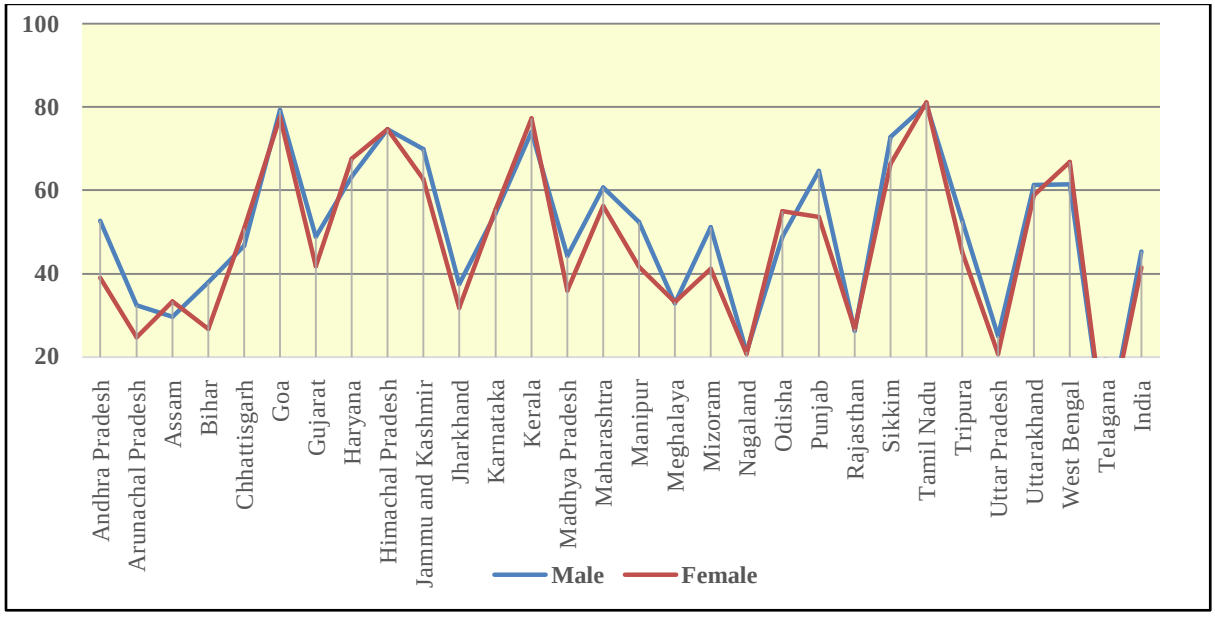
In India, the female child immunization was relatively lower than the males in 2005-06 (Figure 3(a)). Andhra Pradesh had the highest differential (about 14%) with more male children being immunized than the females. Bihar, Punjab, Manipur, and Mizoram recorded a difference of more than ten percent in 2005-06. However, Odisha, West Bengal, Assam, Chhattisgarh, Haryana, Kerala, and Karnataka had more female child getting immunized than the males for the same year. A decade later, the national figures were more balanced for both the sexes. Tripura recorded the highest differential with more male children being immunised (11%) than female

children. The number of states with more female child immunisation increased in 2015-16 and Goa (11%), and Rajasthan (10%) had the highest differential (Figure 3(b)).

Table 4: State wise percentage of children aged 12-23 months receiving full immunization and most of vaccinations from public health facilities

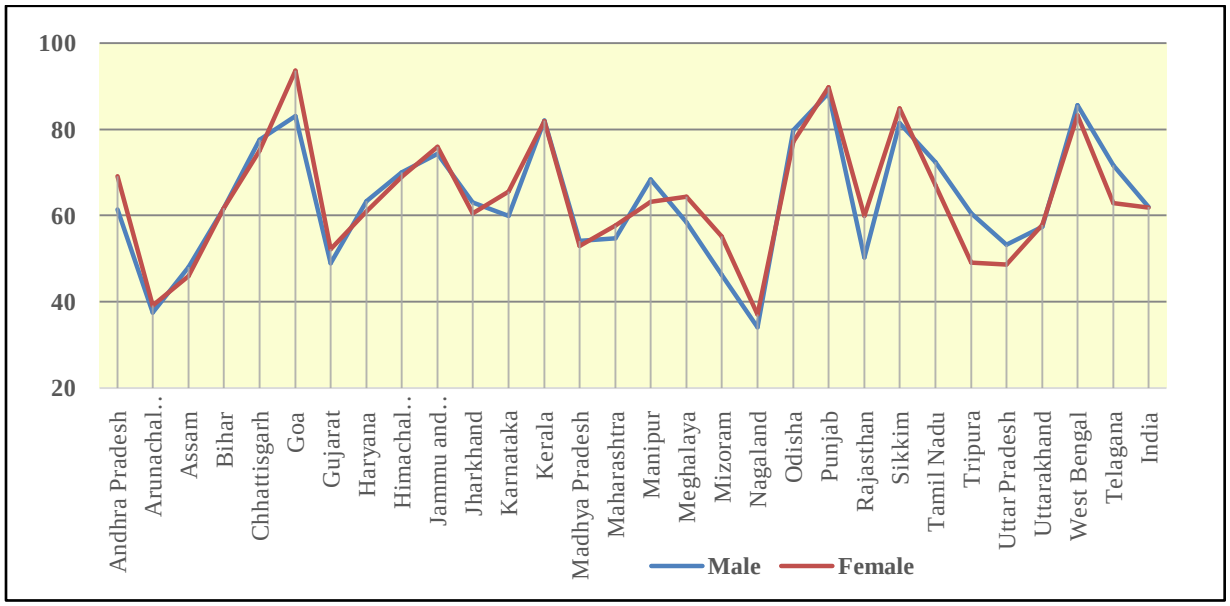
State	Utilization of full immunization among children aged 12-23 months			
	Percentage		Withinpublic health facilities	
	NFHS-3	NFHS-4	NFHS-3	NFHS-4
Andhra Pradesh	-	65.3	-	91.6
Arunachal Pradesh	28.4	38.2	95.4	93.9
Assam	31.4	47.1	87	93.3
Bihar	32.8	61.7	73.2	95.5
Chhattisgarh	48.7	76.4	93.8	96.4
Goa	78.6	88.4	83.2	77.2
Gujarat	45.2	50.4	82.2	87.1
Haryana	65.3	62.2	92.6	94.8
Himachal Pradesh	74.2	69.5	96.3	97.9
Jammu and Kashmir	66.7	75.1	91.5	97.5
Jharkhand	34.2	61.9	83	95.3
Karnataka	55	62.6	74.8	88.2
Kerala	75.3	82.1	66	77.6
Madhya Pradesh	40.3	53.6	86.7	95.7
Maharashtra	58.8	56.3	79.6	86.2
Manipur	46.8	65.9	92.7	92.9
Meghalaya	32.9	61.5	87	92.4
Mizoram	46.5	50.5	93.7	92.2
Nagaland	21	35.7	93.1	91.7
Odisha	51.8	78.6	86.4	98.3
Punjab	60.1	89.1	85.5	89
Rajasthan	26.5	54.8	87.2	94.4
Sikkim	69.6	83	98.6	94.1
Tamil Nadu	80.9	69.7	75	86.1
Tripura	49.7	54.5	87.2	97.4
Uttar Pradesh	23	51.1	80.5	84.5
Uttarakhand	60	57.7	81.7	91
West Bengal	64.3	84.4	92.5	96.6
Telagana	-	68.1	-	83.7
India	**43.5**	**62**	**82**	**90.7**

Figure 3(a). Gender differential in coverage of full immunization of children, 2005-06



Note: Data not available for Telangana separately for NFHS 3 (2005-06)

Figure 3(b). Gender differential in coverage of full immunization of children, 20015-16



Coverage of Health Insurance Schemes

The health insurance coverage in India is extremely low with only 28.7 percent of the total households having a member covered under any of the Health Insurance Scheme (NFHS-4). The rural-urban divide is minimal and even less than one-thirds of the households have health insurance irrespective of their place of residence in the country (Table5). With increase in the

age of the head of the household there was a significantly higher chance of having a health insurance scheme both in the urban and rural sectors. However about 30 percent of the urban households and 28.9 percent of the rural households with heads above 60 years of age had health insurance in 2015-16. Education of head of the household did not play any significant role in the possession of health insurance for households in Indian villages where the primarily educated heads of households owned health schemes (30%). However, in the urban regions, with higher level of education of the head a higher percentage of households possessed health insurance (34%). Only about 20 percent of the Muslim households possessed any health scheme, both in urban and rural India. According to caste, households other than SC, ST and OBC category had fairly low possession of health insurance both in urban and rural parts. With an increase in standard of living, the richer households had more health insurance than the poorer households in both urban and rural India. About one-fifth of the poorest category households in rural India were covered under any health schemes. BPL cardholder households had significantly higher coverage under health insurance with almost 40 percent of them having health schemes both in urban and rural India. Region wise, southern India had the highest percentage (62.6% in rural areas and 49.3% in urban areas) of coverage even more than the national average. The lowest was in northern (15.8% in rural areas and 17.4% in urban areas) and western India (17% in rural areas and 18.3% in urban areas). For all the background characteristics the maximum coverage of health insurance schemes was either State Health Insurance Scheme or Rashtriya Swastha Bima Yojana. In accordance to the place of residence, SHIS covered about 50 percent of the rural households and 45 percent of the urban households. RSBY on the other had coverage of 41 percent of the rural households and around 20 percent of the urban households.

State-wise distribution of Health Insurance Schemes showed that more than 50 percent rural households in southern and eastern parts of the country especially Andhra Pradesh, Telangana, Chhattisgarh, Tamil Nadu, Tripura, Arunachal Pradesh, Odisha and Mizoram were in possession of any of the Health Insurance Schemes. Less than 10 percent households in villages of Jammu and Kashmir, Manipur, Uttar Pradesh, Nagaland, Haryana and Assam were covered by health schemes. Households in the urban areas of the states of Andhra Pradesh, Chhattisgarh, Tamil Nadu, Arunachal Pradesh and Telangana were covered by health insurance schemes the most whereas that of Manipur, Nagaland, Jammu and Kashmir, Uttar Pradesh and Bihar had less than 10 percent coverage of health schemes (Figure 4).State Health Insurance Scheme (SHIS) and Rashtriya Swasthya Bima Yojana (RSBY) were the most widely used public health insurance schemes used in the country (Figure 5). More than 80 percent of the households in Andhra Pradesh, Telangana, Arunachal Pradesh and Tamil Nadu irrespective of the place of residence were covered by SHIS. RSBY scheme was most effective in the rural parts of Tripura, West Bengal, Jharkhand, Mizoram and Kerala in 2015-16.

Table 5:Households having any usual member covered by a health scheme according to background characteristics and place of residence

Background Characteristics	Rural							Urban						
	Health Insurance	ESIS	CGHS	SHIS	RSBY	CHIP	Others	Health Insurance	ESIS	CGHS	SHIS	RSBY	CHIP	Others
Age of head of households														
14-20	16.7	0.3	4.6	30.9	59.4	1	0.8	10.5	8.2	5.8	49.9	24.6	0.7	5.7
21-30	20.3	1.9	2.8	51.3	41.3	0.6	0.7	21.2	13.4	5	52.8	16.6	0.6	3.7
31-40	28.3	1.8	2.6	52.4	39.9	0.5	0.7	26.8	10.3	6	51.2	18.3	0.9	3.6
41-50	32	1.8	3.2	50.4	41.7	0.5	0.7	30.5	9.6	6.9	49.7	19.9	0.8	3.7
51-60	31	2.2	3.7	47.3	43.7	0.6	0.8	31.2	10.7	8.5	43.6	21.1	1	3.8
61 and above	28.9	1.9	3.8	50.5	39.9	0.4	0.6	30	9.4	9.6	40.3	21.6	1	4.1
Education of head of households														
No education	29.5	0.8	2.1	55.5	40.5	0.4	0.3	26.7	3.5	3.3	62.9	26.5	0.5	1.1
Primary	31.4	1.3	3	46.8	47.5	0.4	0.4	28	4.8	3.6	51.7	32.9	0.7	1.8
Secondary	27.5	2.6	4.3	47.1	40.8	0.6	0.9	27.7	10	7.6	47.7	20.2	0.9	3.7
Higher	26.5	9.2	6.8	45.2	25.1	1.2	2.9	34	18.9	12.9	31	6.6	1.2	7.2
Religion														
Hindu	29.9	1.9	3.2	52.2	39.6	0.5	0.7	30.5	11	7.8	47.5	17.8	0.9	4
Muslim	20.2	1.9	2.4	23.1	68.6	0.4	0.6	20.4	4.5	4.5	45.4	36.5	0.8	2.2
Others	31.4	2.3	5.3	53.9	33.6	0.4	0.6	29.5	11.1	9.1	41.6	17.7	1.4	4.6
Caste														
SC	32.1	1.6	2.8	52.7	41.2	0.3	0.4	30.1	9.1	6.8	53.5	22.8	0.7	2.8
ST	31.6	0.9	2.3	43.2	54.3	0.3	0.3	26.7	7.4	6.5	43.2	34.4	0.5	1.9
OBC	29.3	2	3.2	58.7	33.1	0.6	0.8	33.2	8.8	6.1	58.6	17.2	0.8	3.2
Other	23.6	3.2	5.2	36.1	46.3	0.7	1.2	24	13.9	10.4	24.8	18.9	1.1	5.9
Marital status of head of households														
Never married	22.8	2.9	3.6	43.7	46.5	0.5	1.3	20.5	14.3	9.2	37.3	17.8	0.5	5
Currently married	28.8	2	3.4	49.8	41.5	0.5	0.7	29.2	10.8	7.7	46.8	19.1	0.9	3.9
Formerly married	30.7	1.3	2.7	53.1	40.4	0.4	0.6	27.7	5.9	5.9	49.2	26.1	0.8	2.8
Wealth quintile														
Poorest	20.4	0.7	1.8	32.4	66	0.3	0.1	24.7	3.1	2.5	53.4	37.6	0.6	0.7
Poorer	25.9	0.7	2.1	39.8	56.6	0.4	0.2	27.5	5.7	4.2	59.2	24.9	0.7	1.7
Middle	31.6	0.8	2.3	53.7	41.1	0.4	0.3	28.7	9.8	5.6	55.3	20.3	0.8	2.8
Richer	35.4	1.7	2.9	63.4	28.9	0.5	0.6	28.5	13.5	10	44	13.8	1.1	5.2
Richest	31.9	5.3	6.8	52.6	26	0.8	1.9	35	17.3	13.9	26.6	6.9	1.3	7.6
BPL card														
No	20	3.7	5.7	47.9	35.5	0.6	1.4	24.8	13.5	10.4	40.9	13.2	1	5.4
Yes	39.5	0.9	1.9	51.5	45	0.5	0.2	40.4	4.5	2.4	57.4	32.1	0.7	0.9
National region														
Eastern	27.3	1.4	2.3	16.7	81.5	0.3	0.3	22.3	12.7	10.5	8	51.6	1	5.1
Western	17	2	9.1	28.7	39.9	1	1.9	18.3	8.7	11.5	16.3	14.5	1.5	7.4
Northern	15.8	2.6	5.7	42.5	43.2	0.4	0.6	17.4	12.8	13	35.6	18.9	1.2	3.6
North-eastern	18.3	1.9	3.3	16.2	70.8	1	1.5	18.3	8.2	9.6	21.7	43.6	0.7	2.6
Southern	62.6	1.9	1.9	76.7	17.6	0.5	0.7	49.3	9.4	4.2	66.3	14.6	0.7	2.8
India	**28.9**	**1.9**	**3.3**	**50.2**	**41.4**	**0.5**	**0.7**	**28.2**	**10.6**	**8**	**45.9**	**19.5**	**0.9**	**3.8**

Note: Employees State Insurance Scheme**:** ESIS, Central Government Health Scheme: CGHS, State Health Insurance Scheme: SHIS, Rashtriya Swasthya Bima Yojana:RSBY and Community Health Insurance Programme: CHIP(Source: NFHS-4).

Figure 4: Coverage of Health Insurance Schemes in India according to place of residence, 2015-16

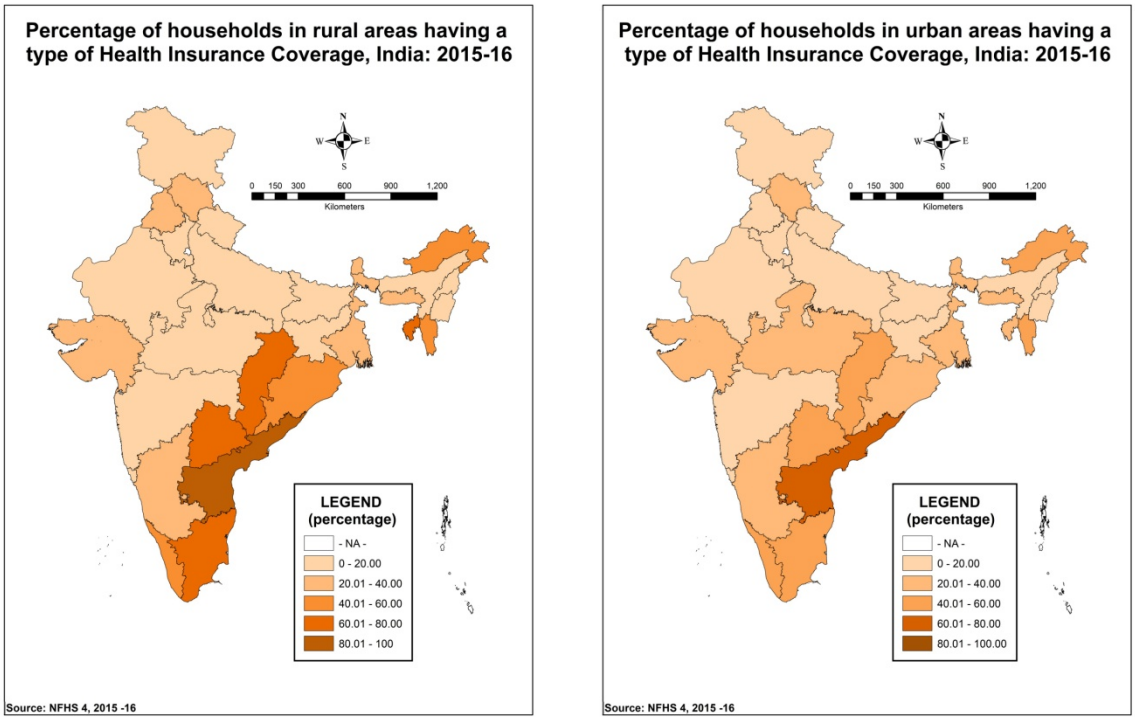
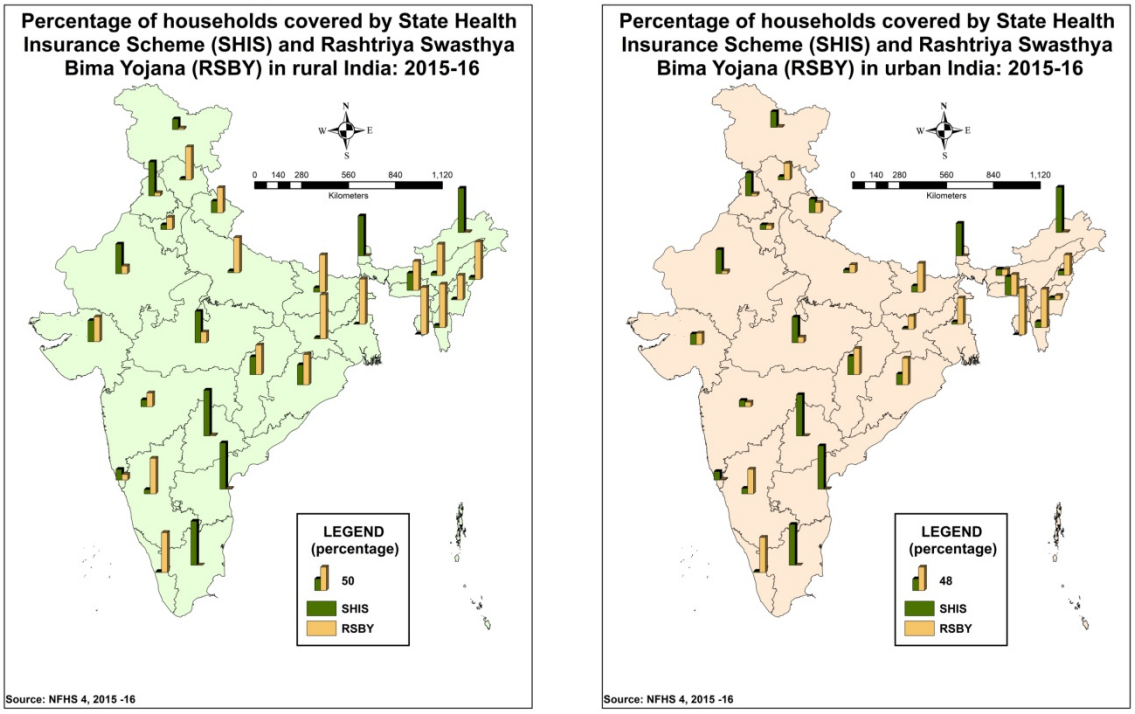


Figure 4: Coverage of two most widely used Health Insurance Schemes in India according to place of residence, 2015-16



Discussion

This study highlights the recent pattern in health care utilization in India which is more decisive on underlying factors like availability, accessibility and quality of care provided. The public health facilities in the country often lack in these aspects, resulting in the underutilization of the services. Public health facility utilization was more in rural India than in their urban counterparts. More than 55 percent of the households in India do not utilize public health facilities. Determinants for lesser accessibility were varied like long waiting time in urban areas whereas poor quality of care in the rural areas. The unavailability of a public health care facility nearby was a concern throughout the country. Public health facilities were generally more depended upon by the households belonging to ST category, poor in standard of living index and BPL cardholders. Location of tribal households in remote places with less health facilities (Barik and Thorat, 2015) often gave them less option for choices. A vast majority of the poor people continued to rely on public health centres for utilization of inpatient services in India (Dash and Mohanty, 2019). Higher standard of living played a significant role in not accessing public health facilities because of possibility for them to afford other facilities. Ensor and Cooper (2004) mentioned that though the root cause for this unequal utilization of health facilities are poverty and low education, still it is the responsibility of the government to monitor the situation effectively. Region-wise, most households in the north-eastern part of the country utilized public health facilities.

More women in their reproductive age groups from both urban and rural areas relied on public facilities for maternal health care. More utilization of public health care depend on the provision of government-subsidized services (Kumar and Prakash, 2011) led to high utilization of public health facilities especially for RCH care. Public sector delivery had also been efficient (Prinja et al., 2012). Programs like Janani Suraksha Yojana were effective in increasing the services in public sectors. As a result, maternal mortality declined considerably over the last decade in India (UN, 2016). Multiple studies suggest that higher maternal education was associated with higher odds of accessing maternal healthcare compared to those with no formal education (Fotso et al., 2009; Munsur et al., 2010; Regassa, 2011; Greenaway, 2012 and Nuamah et al., 2019). However, with higher educated mothers, public health care utilization considerably decreased. Unlike prior studies, with increasing age there was a decrease in maternal care utilization (Chakraborty et al., 2003; Tsawe et al., 2015 and Nuamah et al., 2019). A clear north-south division within the country in accessibility of ANC4+ services was observed. Uttar Pradesh, Bihar, Jharkhand, and Nagaland had the lowest percentage of pregnant women utilizing the services. The southern states recorded the maximum institutional deliveries. Rao (2014) explained that most southern states were better off in having health workers than poorer regions of central and northern India.

Percentage of children receiving full immunisation increased for the country in the last decade. Universal Immunisation Programme (1978), re-designated as the Expanded Programme of Immunisation and later renamed as the former (1985) implemented in all districts of the country proved effective in bringing down the under-five mortality (Singh, 2013). However, the percentage of full vaccination went down in many regions of India. There was more utilization of public health facilities with an exception in the two of the most urbanized states in 2015-16

(Kerala and Goa). Availability of free drugs and vaccines, satisfactory hospital treatment and unable to go elsewhere are some of the main reasons explained in previous studies (Sharath, 2006; Singh et al., 2011 and Ramana et al., 2017). Health insurance enclosure for India was extremely low. Maximum coverage was in the southern and north-eastern part and the lowest in northern India. A study by Prinja et al. (2019) showed more utilization of public health facilities for population registered under Government schemes and state health insurance schemes in comparison to those under RSBY and private insurances. To address the issues of inequality of the services in healthcare, all population groups need to receive equal coverage of universal health care (Ghosh, 2014). We observed that the most widely used public health insurance scheme in the country was State Health Insurance Scheme (SHIS) followed by Rashtriya Swasthya Bima Yojana (RSBY) in 2015-16. The NFHS 4 report supports this in accordance to the national average.

In a nutshell, this paper provided a comprehensive view of the pattern of utilization of health services according to background characteristics of households and at regional pattern along with the respondents' decisive factors behind underutilization of public health facilities, explored the utilization of mother and child care services in the public health facilities and also tried to highlight the health insurance utilization in the country. A few limitations should be noted. First, we did not consider the disease variation in the study. Even, complex and sensitive situations like gynaecological disorders, pregnancy complications, abortions, heart diseases etc. might give opposite public health facility utilization scenario and we have not captured the minor and major ailment treatment patterns. Secondly, choice for underutilization of public health facilities was available only at the household level, so we failed to capture the individual level preference. Further studies should incorporate micro level data to better understand utilization outcomes at the primary health care level.

Conclusion

India has made considerable efforts since its independence to reduce inequalities in the health sector. The primary health care system of the country comprises of its long chain of primary health centres and the sub-centres. Tremendous efforts resulted in the improvement of health outcome though considerable barriers remain in the access of the health facilities specifically in the public sector. Choice of non-public health care facilities over public health care facilities is an indication that the public health care facilities have failed to meet the evolving health requirements in the country. A huge difference is observed between the rural and urban areas. It can be concluded that accessing public health facility is an option at unfavourable characteristics of the households. Most high educated, rich and urban households access non-public health facilities. The privatization of the medical services has played a vital role in minimizing the medical accessibility gap in the country. The supply and demand network of public health facilities lack at this point. This study highlights that the quality of care and unavailability of nearby services are important determinants of not accessing public health facilities in rural regions. Similarly, long waiting time is a decisive factor for underutilisation of public health facilities in urban areas. It is essential to enhance the practical working of the existing public health facilities by improving the infrastructure and raising more awareness about the ongoing programs. Well maintained infrastructure like electricity, ambulance services, and

better roads are essential to access health care, especially to the remote areas. In the 21st century, preventive, curative and affordable health facilities should indeed be available for all.

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