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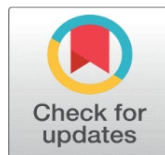
INTER-STATE DISPARITIES IN HEALTHCARE COSTS, HEALTH INSURANCE COVERAGE AND FINANCIAL PROTECTION IN INDIA: A COMPARATIVE ANALYSIS OF NATIONAL SAMPLE SURVEYS FOR 1986-87, 1995-96, 2004 AND 2014

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ABSTRACT

By analysing data from the National Sample Survey for four rounds (1986–87, 1995–96, 2004 and 2014) this research focuses on changes in people's health seeking behaviour, the cost of treatment, and principal factors affecting health insurance premium payments by BPL and APL families. With variations between states, it is discovered that over time, less people sought care from public providers and more people preferred private providers. Despite the fact that both men and women are now more likely to seek treatment for their illnesses, a sizeable portion of the population (more in rural than in urban areas), still refuses treatment because they believe their illness is not serious enough to warrant it. Whilst the cost of healthcare has gone up over time, the difference between public and private costs of treatment has shrunk, possibly as a result of the higher recurring cost in public health facilities and imposing of user fees and cutting on the delivery of free medication. Since the middle of the 2000s, public insurance companies have offered low-cost hospitalisation insurance programmes like the Jan Arogya Bima Policy and Rashtriya Swasthya Bima Yojana (RSBY) to help with the healthcare needs of the underprivileged sector of society. According to the insurance premiums, more households that paid premiums in 2004 and 2014 belonged to groups with higher Monthly Per Capita Expenditures (MPCE) and were not economically in the poorest tier. The inter-quintile MPCE differential (between the top and bottom quintile) also reveals significant inter-state disparities in terms of the percentage of households that paid a premium and the percentage of households that had health insurance. The factors that determine whether a family enrolls in health insurance imply that increasing enrolment from the poor households got coverage through RSBY. At the national level, BPL/APL households with insurance reported, on average, higher hospitalisation costs than non-insured households, with the difference being significantly higher for urban households. This finding suggests the prevalence of insurance collusion and moral hazard, particularly in the cities from developed states of Punjab, Haryana, Gujarat, and Maharashtra. Further, BPL households, particularly from rural India, have received very little financial relief as a result of the insurance.

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Keywords: Health Insurance Coverage, Financial Protection, Healthcare Costs

1. INTRODUCTION

Healthcare system in India is a typical mix of public and private providers with wide inter-state disparities in terms of their spread and coverage. The total health expenditure (THE) for India is estimated to be 3.16% of Gross Domestic Product (GDP) of which public sector contributed 40.61%, household out-of-pocket (OOP) 48.21%, the Private Health Insurance 6.57% and the remainder by Social Security and External Donors (National Health Accounts 2018-19, [Government of India. \(2022\)](#)). Since the inception of National Health Accounts, the total health expenditure as percentage of GDP has continuously declined from 4.2% in 2004-05 to 3.8% in 2015-16 and further to 3.2% in 2018-19. It is interesting to note that the contribution of government has increased from 22.5% in 2004-05 to 40.6% in 2018-19, that of the household OOP decreased from 69.4% to 48.2% whilst that of private health insurance increased from 1.6% to 6.6% during the same period. The Central and State governments' health expenditure together account for just 1.3% of GDP which is drastically below the 5% norm required to support the Universal Health Coverage mission.

Several evidences both quantitative and qualitative have consistently demonstrated that the high level of household OOP health expenditure on treatment including private health insurance premium is responsible for pushing people into poverty [Gumber \(2000\)](#); [World \(2001\)](#); [Van et al. \(2006\)](#); [Selvaraj and Karan \(2009\)](#); [Berman et al. \(2010\)](#). It may be noted that private health expenditure is higher than public expenditure across all major states. The burden of OOP expenditure falls on a quarter or a third of the households with incomes below the poverty line [Deolalikar et al. \(2008\)](#), which has impacted the reduction in consumption expenditure on food and other essential items, increased indebtedness, and growing untreated illness; and which could further lead to gender bias in health-seeking behaviour [Sen \(2003\)](#).

Although public health system has not equally spread-out geographically and has several shortcomings in terms of providing both quantity and quality of services in India, even then it has been evident from the previous National Sample Survey Organisation (NSSO) Survey Rounds on Healthcare Utilisation that public health services are the preferred option, particularly, for inpatient care [Gumber \(2002\)](#), [Gumber \(2021\)](#). Moreover, health outcomes, especially, infant mortality, respond more to public health and local clinical interventions than to hospital care [Deolalikar et al. \(2008\)](#), and these may vary across states.

This paper presents the health and morbidity scenarios prevalent in India at four time points using the NSSO surveys for 1986-87, 1995-96, 2004 and 2014 and thereby examines the trends in the use of healthcare services separately for rural and urban residents by public and private providers and their associated expenditure on treatment as inpatient and outpatient. It further explores inter-state disparities in health insurance enrolment/coverage and the extent of financial protection received by insured households. These four survey rounds depict three important periods of growth, namely the liberalization period of the 1980s, the period of fiscal contraction in the 1990s that saw the decline in social spending [Bhat and Jain \(2006\)](#), [Selvaraj and Karan \(2009\)](#), the phase of globalization and the launch of National Rural Health Mission in 2005. The paper also discusses whether the states have made a notable progress towards achieving Universal Health Coverage (UHC) goals in terms of improving equity in accessing healthcare services and reducing financial hardship to meet the catastrophic hospital treatment cost.

The analysis took into account 17 of India's largest states; however, the computation of "All-India" averages included all major and smaller states and union territories. There have been a few splits in states after November 2000; hence we have added back Chhattisgarh to Madhya Pradesh, Uttaranchal to Uttar Pradesh and Jharkhand to Bihar (which depicts a pre-bifurcation scenario) in order to compare statistics between NSSO Rounds. Furthermore, to account for inflation between survey rounds we converted the cost of treatment in real terms by deflating the OOP expenditure by the wholesale price index of pharmaceutical products at 1993-94 prices. Pharmaceutical prices are a significantly better reflection of the actual rising cost of Indian healthcare services than the deflator based on consumer price/wholesale price index for all commodities. The inflation rate of pharmaceutical products has turned out to be higher than those for all commodities. The wholesale price for pharmaceutical product is estimated to have increased by 318 per cent against 240 per cent for prices of all commodities during the period 1994-95 to 2011-12 (This is computed from RBI report on Wholesale Price Index for various years under sub-category - Manufacture of Pharmaceuticals, Medicinal Chemical and Botanical Products). Since much of the household's recurring health expenditure is incurred on purchasing the necessary drugs as an inpatient/outpatient, the use of price index for pharmaceutical items than any other price index is more appropriate to demonstrate the financial burden of rising healthcare expenditure on people seeking treatment in India.

The paper is structured in five sections, including the introduction. Section 2 presents a summary health scenario for India. The healthcare utilisation pattern and associated cost of treatment for inpatient and outpatient care for rural and urban residents are examined in Section 3. The amount of household financial and health insurance protection is shown in Section 4 for the major states. The summary and conclusions are presented in the final section.

2. HEALTH SCENARIO IN INDIA

With the increasing attention towards achieving better population health, India has significantly improved its health in terms of higher life expectancy and lower levels of mortality over the last 50 years. According to health indicators provided by the Central Bureau of Health Intelligence, [Government of India. \(2018\)](#), the birth rate decreased from 25.8 in 2000 to 20.4 in 2016 and the crude death rate decreased from 8.5 to 6.4 during the same period. Other health metrics, such as the infant and maternal mortality rates, have also decreased over time as a result of the numerous programmes included in previous Five Year Plans. Between the 1970s and 2015, the infant mortality rate dropped from 120 per 1,000 live births by more than a third to 37. Similarly, the maternal mortality ratio decreased from 400 maternal deaths per 100,000 live births in 1997-98 to 167 in 2011-13. In spite of these improved health outcomes, substantial disparities in these health indicators continue to prevail among the states [Balarajan et al. \(2011\)](#).

In contrast to other Asian nations like China, Indonesia, Thailand, Malaysia, the Republic of Korea, and Sri Lanka, India's progress has lagged behind. Due to the continuous epidemiological transformation and the explosive increase of non-communicable diseases, the nation is also dealing with the new challenge of a "double burden of disease." Even though India has made tremendous progress in containing communicable diseases, their disease burden on the nation is still significant. The prevalence of chronic non-communicable diseases (NCDs), such as cardiovascular disease, diabetes, chronic obstructive pulmonary disease, malignancies, common mental disorders, and accidents, has gradually increased

along with the drop in morbidity and mortality from communicable diseases. The National Health Policy 2015 states that communicable diseases still account for 24.4% of all disease burden while maternal and neo-natal ailments contribute to 13.8%. The NCDs (39.1%) and injuries (11.8%) now constitute the bulk of the country's disease burden.

The government health spending in India must significantly grow in light of the prevalent disease burden. The supply and financing of various health services between the federal government and the states are clearly demarcated. The financing and provision of curative healthcare are both regarded as state matters. The Employees' State Insurance Scheme (ESIS), primary healthcare facilities, and hospital services are entirely funded by the state. The federal government fully funds programmes for family welfare and medical education. The majority of national disease control programmes are funded on a 50:50 share basis by the federal government and the states. However, the state's contribution to the overall cost of these programmes turns out to be around three-fourths, i.e., only basic inputs are shared equally. The state has to bear all the administrative cost including salaries of the staff. The centre and states share equally the capital investment. The federal government's share is little over 40% in the total expenditure on medical education and research. Broadly, thus the states fully manage and fund all curative care services. This implies that State's economic and financial conditions as well as human resources have a direct impact on people's health outcomes.

Table 1

Table 1 Key Health Financing Indicators for India across NHA Rounds				
		NHA 2004-05	NHA 2013-14	NHA 2014-15
1	THE as % of GDP	4.2	4	3.9
2	THE per capita (Rs)	1201	3638	3826
3	CHE as % of THE	98.9	93	93.4
4	Total Govt. Health Exp. As % of THE	22.5	28.6	29
5	OOPE as % of THE	69.4	64.2	62.6
6	Social security expenditure on health as per cent of THE	4.2	6	5.7
7	Private Health Insurance as a % THE	1.6	3.4	3.7
8	External/Donor Funding for health as per cent of THE	2.3	0.3	0.7

Note: THE, CHE, and OOPE refer to Total Health Expenditure, Current Health Expenditure, Out-of-Pocket Expenditure, respectively.

Source: Government of India, 2017a, National Health Accounts, 2014-15, p.11.

Four key facts emerge from key indicators presented in the NHA 2014-15 [Table 1](#): (1) the increase in the share of total government health spending to 29%; (2) the decline in OOP expenditure from 69.4% in 2004-05 to 62.6%; and (3) 0.3% increase in the private health insurance in 2014-15 and decrease by the same amount in the social security expenditure compared to NHA 2013-14, but with a notable increase compared to NHA 2004-05.

Against this general backdrop, we examine in the following section the pattern of health care utilisation across 17 major states over four survey rounds.

3. PATTERN OF HEALTHCARE UTILISATION AND COST OF TREATMENT

3.1. HEALTH SEEKING BEHAVIOUR

The share of illness episodes treated following on a medical advice is more an indicator of the health-seeking behaviour of consumers rather than of morbidity alone. The gender differences in the number of illnesses treated, as shown in [Figure 1](#), highlight the disparities between rural and urban residents' patterns of health-seeking behaviour. It demonstrates that over the all-India, the proportion of illnesses treated in urban regions for both genders continuously remained greater than those in rural areas in all four rounds. This might be primarily because urban areas have better access to medical facilities. In 2014, the rural-urban divide is found to be smaller than that was in 1986–1987. Additionally, the gender difference favouring men that was evident in the prior three rounds disappeared by 2014. However, there are significant differences in health seeking behaviour between men and women and between rural and urban areas and within select states indicating positive and negative trends over the four rounds.

Figure 1

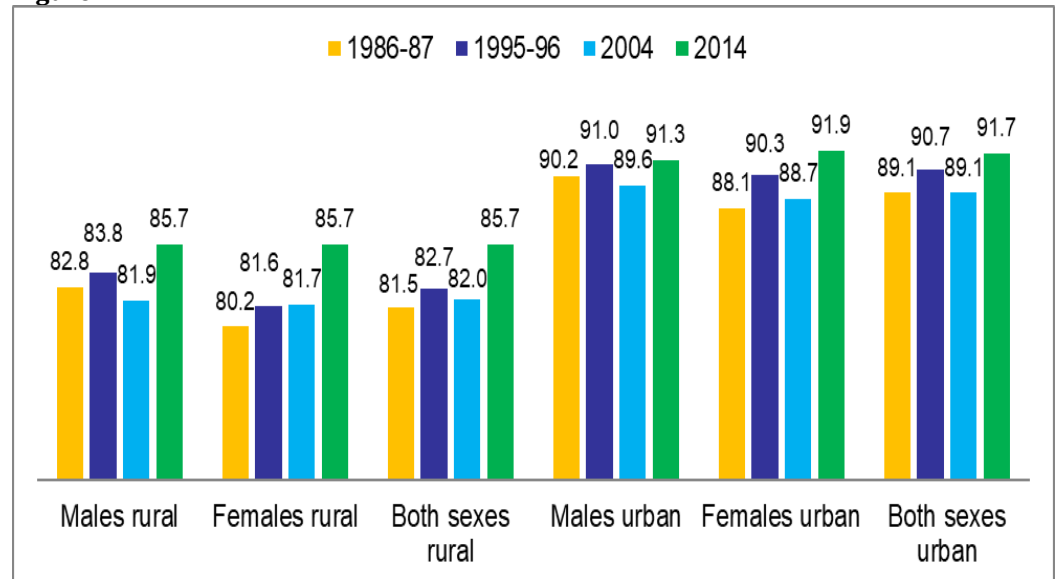


Figure 1 Share of treated illnesses by sex and rural-urban residence (%)

When compared to 1986–1987, there has been a little improvement in health seeking behaviours across all-India for both sexes in 2014. Compared to 1986–1987, rural areas of Andhra Pradesh, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, and Tamil Nadu saw a noticeable improvement in health seeking behaviour in 2014 but Assam, Bihar, and West Bengal saw a decline. To our surprise, urban regions in Assam, Bihar, Jammu & Kashmir, Odisha, and Punjab saw a decline in health seeking behaviour whereas Andhra Pradesh and Maharashtra saw a notable improvement. In numerous states, particularly in rural areas, significant gender disparities in ailment treatment have been noted (for more information, see [Gumber et al. \(2017\)](#)).

Despite the diagnosis of illness, not everyone seeks medical help/assistance due to underlying various socio-economic and cultural reasons. One of such reasons could be because “respondents are known to underestimate both latent illness and chronic illness and the perception of being ill is known to be dependent on cultural factors, health awareness and access to care” [Sundarraman and Muraleedharan](#)

(2015). The NSS surveys had collected responses on the underlying reasons for 'not seeking treatment' for their ailments, which could be due to: (a) non-availability of medical facility nearby; (b) lack of faith; (c) lengthy waiting period; (d) financial reasons; (e) ailment not regarded as serious; and (f) all other remaining reasons. In rural and urban India, 15.4% and 1.3% of ailments respectively were not treated due to lack of medical facility in 2014. The access to a nearby medical facility in rural areas is a cause of concern. This suggests that a particular segment of the population is denied access to basic primary healthcare.

The cost and affordability of seeking care also plays a significant role in whether or not the poor and vulnerable individuals seek medical attention. The number of respondents from rural and urban areas who stated that they were unable to receive medical treatment during the NSS rounds increased, which suggests that the gap in access to healthcare is expanding. It has been noted that when there is an illness, the poor are more prone to mention financial costs as justifications for skipping care. Both rural and urban areas have seen an increase in this tendency over time Balarajan et al. (2011). According to a previous survey, approximately half of those in the lowest quintile of spending avoid medical care due to cost Gumber (1997). In some of the poorest states, the main barrier to receiving treatment was financial. The proportion of untreated illnesses in rural versus urban areas was significantly correlated, according to state-level data, and the size of the correlation coefficient grew over time, going from 0.643 in 2004 to 0.815 in 2014. This demonstrates unequivocally that both rural and urban populations are impacted by state-level socioeconomic conditions and the size of health infrastructure.

3.2. PUBLIC AND PRIVATE HEALTHCARE PROVIDERS

The health of the impoverished is significantly influenced by access to public health services. People might be forced to pay exorbitant fees or decide not to use any health services at all if they don't have a choice Sen et al. (2002). It is critical to comprehend the role played by public health providers in both inpatient and outpatient care in a nation where private health spending hovers around 60% on average. The private sector's involvement in the delivery of health care is expanding quickly. The government actively promotes the entry of new private players by offering tax breaks and subsidising land and capital for the construction of hospitals. The inter-state examination of private health providers' growth through time could not be done in this paper since there are no official records for keeping track of hospitals, nursing homes, and clinics in rural and urban locations. However, Hooda (2015) compiled the estimates from various sources including NSSO Enterprise Surveys and estimated that there were 1.04 million private health enterprises in India in 2010-11 (See Table 2). Their number expanded considerably in the post-liberalisation phase of 1990s which further got accelerated exponentially in the 2000s specifically in urban locations (the share of private health enterprises in rural locations in 2010-11 was just 18%).

The public health sector has grown throughout time as well, although in the last 10 years the expansion of number of hospitals and beds increased substantially. This was primarily motivated by the need to promote institutional births and lower maternal and newborn mortality rates in order to achieve the global sustainable development objectives agenda. The improvement indicator of people served per hospital bed between 2004 and 2014 reflects some of these developments. It's interesting to note that the expansion of the public health sector in rural areas has received a much fairer allocation than the expansion of the private health sector,

which dominated in urban areas in the 2000s. According to the MoHFW's National Health Profile, which is shown in Table 2 for the period 2004–14, the quantity of public hospital beds in rural areas actually grew at a much faster pace from 111,872 to 183,602 (64% rise) than in urban areas from 357800 to 492177 (38% rise).

However, the rate of growth of government hospital beds in rural areas varied greatly by state; Jammu and Kashmir showed the largest decadal growth (222%), followed by Rajasthan (182%), Tamil Nadu (176%), and Uttar Pradesh (172%). On the other hand, during the same time period, Punjab and Gujarat saw a decline in the number of hospital beds in rural areas. The National Rural Health Mission financing has resulted in the misclassification or reclassification of several urban hospitals as rural hospitals over time, and some states have classified CHCs or upgraded PHCs as rural hospitals. As a result, these results should be evaluated with caution. Because of this, we have seen negative or insignificant growth rates in the number of government hospital beds in urban areas during 2004-14 in various states, including Bihar, Andhra Pradesh, and Rajasthan.

In Jammu and Kashmir (196%), Uttar Pradesh (89%), Assam (81%) and Madhya Pradesh (72%), there was a noticeable increase in the number of government rural and urban hospital beds between 2004 and 2014. The population served per government hospital bed increased in Gujarat, Andhra Pradesh, and Bihar between 2004 and 2014 due to a decline in the number of government hospital beds in these states. Bihar, Andhra Pradesh, and Uttar Pradesh's public health infrastructure, as measured by the population served per hospital bed, remained deficient in 2014. On the other end of the spectrum, Himachal Pradesh, Kerala, and West Bengal provided better health infrastructure.

3.3. RELIANCE ON PUBLIC HEALTH SERVICES FOR INPATIENT CARE

The information in Table 3 demonstrates that at all-India level, the share of public providers in inpatient care for rural residents though declined from 59.7% in 1986-87 to 41.7% in 2004 but exhibited improvement to 50.3% in 2014. During 1986 to 2014, the decline in the share of public providers for rural people is relatively less, compared to the decline witnessed for urban people at all-India level. The share of public providers in urban India fell from 60.3% in 1986-87 to 35.5% in 2014. If we consider only 2004-2014 period, in contrast to increase in utilisation for rural residents, the share of public providers decreased slightly from 38.2% to 35.5% for urban residents.

At the state level, the situation is more or less comparable to that of all-India, where a general reduction between 1986–1987 and 2014 is visible, although an increase in the share of public providers is noted between the years of 2004 and 2014. Haryana, Himachal Pradesh, Madhya Pradesh, Odisha, Punjab, Rajasthan, Tamil Nadu, and Uttar Pradesh all adhere to this pattern.

Even while a few states recorded a decrease in the proportion of public providers in 1995–96 compared to 1986–1987, they subsequently consistently improved. This group includes Madhya Pradesh and Assam. Public providers for inpatient treatment for rural people have consistently decreased in Andhra Pradesh, Gujarat, Karnataka, Kerala, and Maharashtra from 1986 to 1987. This is concerning, as the percentage is lower than the 2014 average for all-India.

Andhra Pradesh, Gujarat, Haryana, Karnataka, Kerala, Rajasthan, Maharashtra, and West Bengal are the states that exhibit a constant fall in the share of public providers for inpatient treatment in urban areas, similar to the situation for all-

India. The share of public providers in other states—aside from Rajasthan and West Bengal—is lower than the national average. Assam, Bihar, and Punjab are states that have experienced a revival over the past ten years (2004–2014). While Uttar Pradesh's ranking stayed stable, Madhya Pradesh's standing somewhat worsened in 2014 compared to 2004.

In rural areas the increase in availability of government hospital beds over time directly altered the healthcare utilisation pattern for rural residents. First of all, the inter-state correlation coefficient between population served per government hospital bed with percentage share of treated illnesses in 2014 was highly significant (-0.720 for rural and -0.611 for urban areas). Further, the population served per government hospital bed was also significantly correlated (-0.619) with percentage change in share of treated illnesses between 2004 and 2014 in rural areas; thus signifying improvement in the access to government health facilities in a state leads to better health seeking behaviour for their rural residents.

The improvement (reduction) in reliance on public health facilities for inpatient care particularly by rural populations in various states during 2004-14 is directly associated with the expansion (contraction) of government health infrastructure. Assam, Madhya Pradesh, Punjab, and Uttar Pradesh exhibited an upward directional relationship, while Andhra Pradesh and Gujarat showed a downward directional association. Haryana, Himachal Pradesh, and Kerala showed a stable position, while the remaining states showed a mixed association. The percentage share of public providers for inpatient care and variations in the number of government hospital beds were generally shown to be positively correlated at the state level (0.532 for 2004; 0.500 for 2014). We also discovered a negative correlation between the number of private enterprises per 100,000 people (as shown in Table 2) and the percentage share of public providers in inpatient care (-0.536 for 2004 and -0.593 for 2014) for 17 major states. Hooda (2015) observed that the expansion of private health enterprises at the state level was negatively correlated with the reliance on public hospitals.

3.4. SHARE OF PUBLIC PROVIDERS FOR OUTPATIENT CARE

For both rural (28.3%) and urban (21.2%) people across all of India, the reliance on public providers for outpatient care in 2014 was found to be significantly lower than that for inpatient care. It is interesting to note that compared to 1986–1987, the proportion of public providers providing outpatient care to rural households has improved in 2014. Assam, Kerala, Madhya Pradesh, Odisha, Punjab, Tamil Nadu, Uttar Pradesh, and West Bengal are the states that are following this trend, whereas the other nine states have experienced a fall. Since 1986–1987, only Haryana has had a continuous fall. We have seen that two of those nine states—Bihar and Maharashtra—restored reliance on public providers between 2004 and 2014.

Even in urban India, the percentage of public providers for outpatient treatment has decreased from 1986–1987, though stagnation was seen between 1995–1996 and 2004. Since 1986–1987, the share of public providers in urban Karnataka and West Bengal areas has consistently decreased. Since 2004, a few states, including Assam, Kerala, Maharashtra, Punjab, and Uttar Pradesh, seem to have resumed relying on public services. In urban areas of Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Odisha, and Rajasthan, the proportion of public providers providing outpatient care has decreased since 2004.

To some extent in 2014, the public providers in outpatient care has played a dominant role for either rural or urban or in both populations of hilly states of India (Assam, Himachal Pradesh, and Jammu and Kashmir) and in Odisha. Additionally, between 2004 and 2014, states that expanded their public health infrastructure also saw an improvement in how many people used outpatient treatments. We discovered a strong negative association (-0.521) between the percentage share of public providers in outpatient care for urban areas in 2014 (as shown in [Table 2](#)) for 17 major states and the population served by a government hospital bed.

Table 2**Table 2 Distribution of Government Hospital Beds in Rural and Urban areas (2004 and 2014) and Private Health Enterprises (2010-11) by Major States**

Major States	Government Hospital Beds**							Population served per Govt. Hospital Bed**				Private Health Enterprises* (2010-11)	
	Rural Areas			Urban Areas			All Areas					Number	Per 100,000 population
	2004	2014	% Annual Change	2004	2014	% Annual Change	% Annual Change	2004	2014	% Change	Annual		
Andhra Pradesh	3005	7380	14.56	32106	12468	-6.12	-4.33	2297	4381	9.07		74603	88
Assam	3000	7504	15.01	4382	5877	3.41	8.13	3800	2369	-3.77		7109	23
Bihar*	4440	10129	12.81	23468	6837	-7.09	-3.92	4419	8130	8.40		79322	58
Gujarat	11893	8945	-2.48	23163	18983	-1.80	-2.02	1564	2196	4.04		46111	76
Haryana	1068	2454	12.98	6050	5210	-1.39	0.77	3185	3481	0.93		36312	143
Himachal Pradesh	2388	3328	3.94	5398	5448	0.09	1.27	817	795	-0.27		4302	63
Jammu & Kashmir	1820	5867	22.24	1475	3893	16.39	19.62	3212	1245	-6.12		4953	39
Karnataka	7320	9884	3.50	33984	43138	2.69	2.84	1343	1154	-1.41		48178	79
Kerala	7771	18082	13.27	18068	20318	1.25	4.86	1299	918	-2.93		34846	104
Madhya Pradesh*	10398	11542	1.10	12869	28657	12.27	7.28	3553	2532	-2.87		65779	67
Maharashtra	11460	12398	0.82	30593	39048	2.76	2.23	2409	2277	-0.55		95684	85
Odisha	4721	7099	5.04	8425	9584	1.38	2.69	2971	2505	-1.57		19782	47
Punjab	4590	2900	-3.68	4383	8904	10.31	3.16	2824	2420	-1.43		40489	146
Rajasthan	7465	21088	18.25	24615	10760	-5.63	-0.07	1910	2229	1.67		40490	59
Tamil Nadu	3318	9150	17.58	40249	55093	3.69	4.75	1498	1069	-2.86		43605	60
Uttar Pradesh*	9900	27146	17.42	25963	40764	5.70	8.94	5796	3472	-4.01		245662	117
West Bengal	10946	19684	7.98	47570	58882	2.38	3.43	1447	1170	-1.91		112470	123
All	111872	183602	6.41	357800	492177	3.76	4.39	2336	1833	-2.15		1035497	86

Source: * NSS 2010-2011 (67th Round), Unincorporated Non-Agricultural Enterprises; Hooda (2015: p14).

** National Health Profile for various years, Centre Bureau of Health Intelligence, DGHS, MoHFW, Govt. of India, New Delhi.

Notes: For a couple of states data for government rural/urban hospital beds were not available for 2004 or 2014; these were replaced by later years.

Table 3**Table 3 Share of Public Providers in Treated Illnesses, 1986-87 to 2014**

State	Inpatient Care								Outpatient Care							
	Rural				Urban				Rural				Urban			
	1986-87	1995-96	2004-05	2014-15	1986-87	1995-96	2004-05	2014-15	1986-87	1995-96	2004-05	2014-15	1986-87	1995-96	2004-05	2014-15
Andh	30.8	22.2	27.	26.	41.7	35.4	35.	23.7	21.6	22.0	22.	15.	22.	19.0	20.	12.

State	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014
Assam	89.8	69.2	75.0	91.7	82.4	63.0	55.2	62.6	53.0	29.0	35.6	84.3	29.6	22.0	29.1	44.6
Bihar	50.1	24.1	21.7	56.1	46.8	31.9	26.5	49.1	16.9	13.0	7.8	13.9	18.0	33.0	16.9	12.3
Gujarat	56.0	31.4	31.3	27.5	61.8	36.3	26.1	24.5	35.1	25.0	22.0	23.7	19.6	22.0	18.0	15.0
Haryana	54.1	30.3	20.6	39.9	56.7	37.0	29.0	23.2	16.9	13.0	12.0	10.6	21.7	11.0	19.9	8.5
Himachal Pradesh	88.0	86.5	78.1	77.3	78.9	91.3	89.7	75.5	60.7	39.0	68.6	43.3	47.7	48.0	86.1	79.4
Jammu & Kashmir	96.5	97.7	91.2	94.0	96.1	95.9	86.4	82.2	59.8	44.0	53.8	48.4	47.4	28.0	50.9	41.0
Karnataka	59.8	45.0	40.0	37.3	50.0	29.3	28.9	23.2	36.4	26.0	34.6	26.1	31.3	17.0	16.7	14.5
Kerala	43.6	39.5	35.6	34.4	56.3	37.3	34.6	33.0	34.0	28.0	38.0	36.3	34.8	28.0	24.0	31.1
Madhya Pradesh	80.4	40.4	57.2	67.4	79.0	54.7	48.7	48.2	27.1	23.0	22.7	29.5	25.9	19.0	24.8	24.0
Maharashtra	45.8	30.9	28.7	26.9	49.4	30.7	28.0	24.4	36.5	16.0	17.4	20.2	35.3	17.0	11.7	14.6
Odisha	90.7	84.2	79.1	84.2	82.2	77.9	73.1	61.4	52.7	38.0	56.8	75.5	47.9	34.0	58.3	54.4
Punjab	49.2	37.7	29.4	36.1	52.0	26.5	26.4	31.7	13.4	7.0	17.6	16.8	15.6	6.0	18.9	22.5
Rajasthan	81.0	63.3	52.1	65.6	86.5	72.1	63.7	58.0	56.1	36.0	45.5	44.1	57.5	41.0	53.9	29.1
Tamil Nadu	56.9	40.4	40.8	45.4	58.2	34.2	37.2	32.6	38.7	25.0	30.7	42.3	35.5	28.0	22.1	28.6
Uttar Pradesh	58.3	46.1	27.8	43.9	61.1	39.0	31.5	31.6	10.4	8.0	11.7	14.6	17.2	9.0	15.3	16.1
West Bengal	91.9	79.9	78.7	77.5	75.9	71.3	65.4	55.1	19.6	15.0	21.1	22.5	25.3	19.0	21.4	14.8
All-India	59.7	43.8	41.7	50.3	60.3	41.9	38.2	35.5	25.6	19.0	24.1	28.3	27.2	20.0	20.0	21.2

3.5. PROVISION OF FREE HEALTH SERVICES BY THE PUBLIC SECTOR

In the delivery of free healthcare services for both inpatient and outpatient care, private sector organisations have a very little role. As a result, free medical care is available to people who use government facilities. [Table 4](#) gives data on the proportion of patients who got free hospital beds (as a proxy for free inpatient care) and free medicine (as a proxy for free outpatient care) in order to capture this element.

Similar to the share of public providers in rural areas, free provision of beds in inpatient care has decreased from 60.7% in 1986-87 to 37% in 2004 and then improved to 47.3% in 2014 at the all-India level. In urban areas across all-India, a same trend is also evident, but the percentage rise from 2004 to 2014 is just 2.6.

However, as pointed out by [Sundarraman and Muraleedharan \(2015\)](#), this pattern shows how public health care consumption is geared towards the poor. Most states, particularly for rural residents, follow this tendency, including Bihar, Haryana, Jammu and Kashmir, Kerala, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. No state has a steadily rising trend in its free hospital bed offerings. While free bed provisions in Assam and Himachal Pradesh continue to fall, they have stagnated in Odisha since 2004. In terms of providing free beds for rural inhabitants, Assam outperformed all other states in 1986–1987 with a 95.5% share; however, by 2014, this percentage had dropped to just 50.6.

As was already mentioned, in 2014, all of India saw a slight improvement in the free availability of beds in urban areas. This pattern is seen in the urban areas of Assam, Bihar, Gujarat, Haryana, Kerala, Madhya Pradesh, Maharashtra, and Punjab. The number of free beds available to the urban population in some states has consistently decreased between 1986–1987 and 2014; these states include Andhra Pradesh, Jammu & Kashmir, Odisha, Rajasthan, Tamil Nadu, and West Bengal. Even lower than the national average of 34.6% is the proportion of free bed providing in urban Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, and Punjab. Again, no state exhibits a rising trend in the provisioning of free beds.

Table 4**Table 4 Percentage of Patients Receiving Free Hospital Bed and Free Medicine 1986-87 to 2014**

State	Free Hospital Bed (Inpatient care)								Free Medicines (Outpatient care)							
	Rural Inpatient				Urban Inpatient				Rural Outpatient				Urban Outpatient			
	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014
Andhra Pradesh	33.3	21.9	31.1	32.8	41.3	36.8	33.9	30.1	20.8	20.1	10.3	9.3	24.2	8.5	6.9	7.5
Assam	95.5	76.5	60.2	50.6	76.1	58.0	41.3	42.9	31.0	12.6	2.7	2.6	10.5	6.0	5.6	3.9
Bihar	47.7	20.0	22.4	48.2	56.5	38.9	30.4	41.8	5.2	1.5	0.2	1.1	26.6	10.4	3.7	0.4
Gujarat	40.0	26.1	27.7	26.3	39.4	25.4	18.7	22.8	21.5	9.5	8.6	15.0	13.9	10.2	11.7	8.8
Haryana	54.0	29.6	11.6	32.8	53.3	16.7	20.1	22.2	8.2	3.7	1.3	0.4	12.2	1.7	3.2	2.0
Himachal Pradesh	86.5	79.0	74.1	70.0	77.3	71.0	80.5	48.3	24.1	4.5	3.6	0.9	8.8	6.8	9.0	0.5
Jammu & Kashmir	93.4	96.8	83.2	91.1	91.6	88.1	78.5	75.2	20.3	5.1	3.6	1.1	12.7	5.2	2.8	0.4
Karnataka	58.8	37.8	38.2	32.9	36.6	25.3	28.2	20.8	26.5	16.3	14.6	4.9	25.4	8.2	4.8	3.4
Kerala	45.1	37.5	33.6	35.4	45.2	31.7	29.5	31.3	29.8	9.3	11.1	14.4	25.4	8.7	6.6	9.3
Madhya Pradesh	77.2	39.2	49.1	64.6	73.3	49.1	41.6	47.0	24.5	3.3	2.9	12.2	17.9	7.8	7.7	8.2
Maharashtra	42.8	28.7	22.5	25.3	39.7	28.6	20.6	23.1	17.0	8.6	6.3	11.4	21.9	8.8	4.5	7.0
Odisha	88.7	83.1	78.8	78.8	88.0	75.2	65.1	55.2	25.0	8.0	7.8	4.9	24.6	5.0	5.1	4.2
Punjab	46.3	26.8	11.5	30.5	46.1	18.7	10.7	16.8	6.5	0.6	1.2	1.8	7.6	2.3	1.6	4.0
Rajasthan	81.8	65.8	50.8	66.9	84.9	70.5	61.3	56.0	15.6	0.1	3.2	24.5	17.5	9.8	7.5	17.8

Tamil Nadu	59.5	42.9	42.5	52.0	57.8	38.9	37.8	36.8	37.3	27.8	25.7	35.3	34.3	25.1	20.6	24.4
Uttar Pradesh	59.1	39.8	16.8	39.8	56.1	32.6	21.8	34.7	6.0	1.8	2.2	3.0	10.5	4.0	4.5	6.7
West Bengal	90.4	79.6	71.8	72.6	69.4	64.5	51.9	48.7	15.4	3.7	4.0	2.6	18.5	8.2	4.9	1.5
All-India	60.7	41.6	37.0	47.3	55.2	38.2	32.0	34.6	17.5*	7.7	6.4	9.4	19.7*	9.3	6.8	9.3

Note: * denotes the All-India average based on the weighted average of 17 major states (states are weighted according to their share in the total estimated hospitalised / ill persons).

3.6. PROVISION OF FREE MEDICINES

People become prone to debt when they purchase medications, especially when they do so frequently for a chronic illness. Provision of free medications would significantly lessen this vulnerability. The NHA 2014–15 estimates that the overall pharmaceutical spending in 2014–15 was Rs. 171025 crores, or 37.9% of the current health expenditures (CHE). According to the NHA 2014–15, pharmaceutical spending includes money spent on prescription drugs used in medical interactions, money spent on self-medication (often referred to as over-the-counter products), and money spent on pharmaceuticals used in inpatient and outpatient care from prescribing physicians (Government of India, 2017a, p. 10). Prescription drugs made up Rs. 128887 crores, or 28.6%, of the total Rs. 451286 crores of the CHE (Government of India, 2017a, p. 22).

Overall, provision of free medicines during 1986-87 to 2014 decreased to 9.4% and 9.3% in rural and urban areas at all-India level. Tamil Nadu is the only state where more than 25% of rural patients have received free medicines; whilst this percentage is lower for urban patients. Tamil Nadu and Rajasthan are the two states where the percentage of patients reporting free medicines in 2014 is high for both rural and urban populations, thanks to the drug procurement model adopted in both the states.

According to reports, more than 20% of rural patients in 10 states received free medications in 1986-87. In 1995–96, there were only two states left (Andhra Pradesh and Tamil Nadu), and by 2004 there was only one state left (Tamil Nadu). However, Rajasthan and Tamil Nadu both appear on this list in 2014. In Haryana, Himachal Pradesh and Jammu and Kashmir, less than 1% of rural patients have reported getting free medicines and in another seven states this was less than 5%.

In the urban areas also, free provisioning of medicines which was at 19.7% in 1986-87 has decreased to 9.3% in 2014 (though better than the 6.3% in 2004). All the states, including Tamil Nadu that is hailed as the model for other states to follow in provisioning of medicines [Lalitha \(2009\)](#) have recorded steep decline in the free provisioning of medicines in 2014 compared to 1986-87.

The fact that the share of medications in inpatient and outpatient treatment is higher than that of other components shows how much of a burden this is on the population. According to [Berman et al. \(2010\)](#)'s analysis, the OOP expenditure to cover healthcare expenditures, particularly those brought on by the lack of free drugs, will further bankrupt the poor. Additionally, we observe a discrepancy between the states that have improved urban services and those that have improved rural services. Concerningly, "among various components, highest expenditure was incurred on medicine both in public and private health care institutions and this varied within a range of 38-66 percent" (p.31), according to the National Health Accounts for 2004–2005. In public health care facilities, around 66% of

expenditures were made on medicine for the rural population, compared to a slightly lower 62% for the urban population (Table 5). The cost of medicines in the public sector has increased as a result of the lack of medications for inpatient care.

Table 5

Table 5 Components of Inpatient Care Expenditure in Public and Private Sector (%)								
Type of Hospital	Sector	Doctor's fee	Diagnostic Test	Bed etc.	Medicine	Blood etc.	Food	Total
Private	Rural	26	9	17	40	3	5	100
	Urban	27	11	17	38	4	3	100
Public	Rural	4	12	4	66	4	9	100
	Urban	5	15	6	62	5	8	100

Source: Government of India. (2005): Table 4.3, National Health Accounts, 2004-05.

3.7. COST AND BURDEN OF TREATMENT

Without a question, cost is the main factor to take into account when deciding between a public and private institution, particularly for the treatment of chronic and serious illnesses. The National Health Policy 2015 states that 60% of inpatient care and 80% of outpatient care are provided by the private sector. The statistics in Table 6 show how much more expensive private hospitals are as compared to public hospitals. Between 1986–1987 and 2014, the ratio of the cost of treatment for inpatient care at constant prices nearly quadrupled (from 1.6 to 4.5) for rural residents and nearly doubled (from 2.4 to 4.1) for urban residents at the national level in India. It is interesting to note that the gap in inpatient costs between private and public providers in rural and urban areas is narrowing down. Alternatively, it implies that the cost of treatment between private and public hospitals is closing in the 2000s. This could be due to the following factors: (1) severe competition within the private sector has brought down prices for their services; (2) public sector has started levying user charges in several states which in turn increased their cost of treatment, almost equivalent to the private sector; and (3) user fees has been implemented for the services provided by the private sector under the scheme of public-private partnership. User fees for hospital services were first instituted in Karnataka in 1996, followed by Odisha, Madhya Pradesh, 1998, Uttar Pradesh, 2000, West Bengal, and Rajasthan in 2001 Shariff and Mondal (2009).

It would be interesting to examine the cost trend for both rural and urban residents in various states. Assam, Kerala, Rajasthan, and Tamil Nadu all had an increase in the private-public cost ratio for inpatient care for rural population during the course of the four-year period (1986–87 to 2014). Implicitly, it shows the growing cost difference between private and public hospitals in these states, which may be related to the public hospitals' superior performance in these states. Does the relative cost of therapy for rural individuals decrease over time in any states? Several states reported lower costs in 1995–96 than in 1986–87, but then increased costs in 2004 and 2014.

These include West Bengal, Bihar, Gujarat, Jammu and Kashmir, Karnataka, Odisha, Tamil Nadu, and Uttar Pradesh. For rural inhabitants requiring inpatient care, we have observed an increase in costs between private and public providers in 14 of the 17 states since 2004. Kerala, Madhya Pradesh, Rajasthan, and Tamil Nadu have the largest cost ratio differences, with the private sector becoming much more expensive. The Tamil Nadu situation is really odd. Tamil Nadu has the greatest

private-public cost ratio across all years. Only Tamil Nadu has recorded a double-digit ratio, specifically in 2004 and 2014, demonstrating the stark contrast between public and private providers for both rural and urban populations (24.8 and 17.9, respectively). In contrast, these ratios have remained stable throughout all four periods only in Gujarat for both rural and urban populations (ranged between 2.1 and 2.9 only).

Between 1986–1987 and 2014, the cost ratios for urban people increased in Andhra Pradesh and Assam while being stable in Gujarat, Madhya Pradesh, Punjab, Uttar Pradesh, and West Bengal. The majority of states have seen an increase in the cost of inpatient care for urban inhabitants over the past ten years (2004–2014) between private and public providers. The ratio across all of India increased to 4.1 in 2014 from 3.1 in 2004, but it stayed below the norm in eight states (Bihar, Haryana, Gujarat, Himachal Pradesh, Madhya Pradesh, Punjab, Rajasthan, and Uttar Pradesh). In contrast, the cost ratio in Himachal Pradesh decreased from 3.4 in 2004 to 1.1 in 2014, showing that the price of inpatient care for urban patients ended up being the same at public and private hospitals.

Table 6

Table 6 Ratio of Cost of Treatment between Private and Public Provider, 1986-87 to 2014																
State	Inpatient								Outpatient							
	Rural				Urban				Rural				Urban			
	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014	1986-87	1995-96	2004	2014
Andhra Pradesh	2.2	3.8	2.5	4.0	5.2	5.4	9.1	8.4	1.8	4.1	1.8	2.4	4.2	2.3	2.6	1.8
Assam	0.6	1.0	1.9	4.5	3.4	3.2	7.5	5.7	0.8	0.6	1.5	1.6	0.4	0.9	0.9	5.5
Bihar	1.3	1.2	1.6	3.6	1.6	1.6	0.9	3.5	0.6	1.2	0.6	0.4	1.7	3.0	0.8	0.7
Gujarat	2.3	2.2	2.8	2.1	2.9	2.2	2.6	2.9	1.6	2.3	1.6	3.1	1.5	1.7	2.7	1.5
Haryana	1.5	1.3	0.5	2.7	1.9	0.6	0.6	2.7	1.6	0.8	1.4	1.1	1.9	0.5	1.1	1.6
Himachal Pradesh	1.8	1.1	2.4	2.2	3	3.2	3.4	1.1	0.8	NE	0.7	0.9	1.3	NE	1.7	0.9
Jammu & Kashmir	2.1	1.0	2.3	6.2	5.5	2.6	5.5	4.3	0.8	NE	1.2	1.3	1.0	NE	0.6	2.5
Karnataka	2.8	2.3	3.1	5.2	3.3	2.9	6.2	6.4	1.8	2	2.1	1.4	1.4	1.4	1.8	1.5
Kerala	1.6	1.7	2.1	7.4	2.6	1.5	1.9	6.8	1.5	1.6	1.3	1.9	1.6	1.6	1.2	1.9
Madhya Pradesh	1.7	1.6	1.8	8.8	2.8	2.3	3.5	2.5	1.7	1.7	1.0	1.1	1.9	0.5	1.8	2.3
Maharashtra	2.9	2.5	3.2	6.1	5.1	3.7	3.8	7.6	1.2	2.0	1.3	2.9	1.3	1.6	2.7	2.5
Odisha	2.0	1.5	2.6	5.6	0.9	5.5	2.3	5.3	0.7	1.2	1.0	1.0	1.9	0.9	0.6	2.1
Punjab	1.3	1.7	1.4	3.4	2.1	1.1	2.2	2.5	0.8	1.2	0.8	1.1	1.0	0.8	0.3	0.7
Rajasthan	1.1	1.5	1.7	6.6	1.2	1.9	1.8	3.4	0.9	0.8	0.4	2.2	1.0	1.3	1.1	0.8
Tamil Nadu	9.0	5.8	13.4	24.8	12.4	6.2	10.5	17.9	5.1	7.5	4.0	4.1	4.1	5.0	13.6	2.4
Uttar Pradesh	1.4	1.1	1.2	4.1	1.5	1.3	2.4	2.2	0.7	0.6	2.1	1.0	0.7	0.9	1.54	0.8
West Bengal	6.0	2.1	4.3	3.6	5.6	5.8	4.0	5.5	1.4	0.8	1.1	1.4	1.9	1.9	1.1	1.4
All-India	1.6	2.1	2.8	4.5	2.4	2.4	3.1	4.1	0.7	1.4	1.3	1.2	0.9	1.2	1.44	1.4

For both rural and urban populations, the private-public cost ratio for outpatient treatment is not as high as it is for inpatient care. The increase in the cost gap between rural and urban areas in India as a whole has been slower during the time period under examination. It's interesting to note that in 2014, the cost difference for outpatient care is greater for rural people of Andhra Pradesh, Gujarat, Maharashtra, Punjab, and Tamil Nadu compared to urban residents. Tamil Nadu's outpatient costs are noticeably greater than those in other states, similar to inpatient cost ratios.

In some jurisdictions, the outpatient cost of a private provider is less than the national average, despite the fact that there is no discernible pattern between rural and urban residents. In other words, in 2014, both rural and urban people of Bihar and Himachal Pradesh found private providers to be less expensive than public providers, whereas only urban residents of Punjab, Rajasthan, and Uttar Pradesh found this to be the case. Although there are user fees paid in public hospitals in Odisha, Rajasthan, and Madhya Pradesh, it can also be claimed that the private sector prices have not increased as much as in other states like Tamil Nadu or Karnataka, despite the fact that it is partly reflecting on the general health seeking conduct of people. It can also be because the public sector in such states performs better. "A well-functioning public health care system not only assures effective services to those at the lower end of the socio-economic hierarchy but can also set a ceiling for the prices and a norm for the quality in the private sector. It can, therefore, be a major anchor for equity overall in the health service system. Inter-state comparisons within India appear to confirm this as states with better public health services have lower prices in the private sector" (cited in [Sen et al. \(2002\)](#)).

3.8. COST OF INPATIENT TREATMENT

For each hospitalisation episode in 2014, the average cost of treatment (including fees, medications, clinical and diagnostic tests, surgery, and hospital bed charges in real terms) was Rs. 3965 for rural people and Rs. 7109 for urban people across the nation ([Table 7](#)). Due to the cost of living and the type of care sought, it makes sense that urban patients' treatment costs were greater than those of rural patients. For both rural and urban populations across all of India, the cost of treatment has grown in real terms for inpatient care ([Table 7](#)). Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, and West Bengal are among the states that have noticed this tendency, especially among rural residents.

Kerala, Tamil Nadu, and West Bengal had the highest annual percentage change in costs for rural residents between 1986 and 2014 (22.1, 17.3, and 11.3, respectively), which is significantly higher than the national average of 5.4%. In contrast, this was the lowest in states that are comparatively less developed (Bihar, J&K, Assam, Rajasthan, Odisha, and Uttar Pradesh). It is important to note that, with the exception of Odisha (where there has been a marginal drop), rural inhabitants in the majority of states had a sharp increase in the cost of inpatient care in 1995-96. In every other state, either 2004 or 2014 saw a decrease in treatment expenses. As a result, 2.8 is the national average for the percentage of yearly change from 1995 to 2014, compared to 1.8 from 2004 to 2014. Between 2004 and 2014, the percentage of yearly change in inpatient costs for rural inhabitants in five states—Andhra Pradesh, Gujarat, Kerala, Maharashtra, and West Bengal—was higher than the national average. In Assam, Bihar, Haryana, Rajasthan, and Uttar Pradesh, rural residents have experienced a negative yearly percentage change, indicating a decrease in the true cost of treatment during 2014. Punjab reportedly had the

highest inpatient cost for rural people in 2014 (Rs. 7356), followed by Kerala (Rs. 5551) and Maharashtra (Rs. 5369).

Similar to the overall Indian trend, a rise has been seen in all four periods for the cost of inpatient care for the urban population in 14 of the 17 states. Bihar, Jammu and Kashmir, and Punjab are exceptions. Since the average yearly change for all 10 states between 1986 and 2014 was 8.1%, Tamil Nadu, Haryana, Andhra Pradesh, Madhya Pradesh, Assam, and Kerala all saw very high growth rates of between 19% and 21%. With the exception of Bihar, Jammu and Kashmir, and Punjab, the percentage changes between 2004 and 2014 are negative. Changes in the context of Gujarat, Haryana, and Rajasthan are less than the national average of 3.9% among the remaining states where the change in cost is positive. Overall, compared to other states, the cost of inpatient care was greater for all inhabitants in Tamil Nadu, Punjab, and Haryana, while it was lower in Jammu & Kashmir and Rajasthan.

3.9. COST OF OUTPATIENT CARE

At all-India level, the cost of outpatient care for rural residents has increased from Rs.141 (1986-87) to Rs.182 (2004) and then to Rs.176 (in 2014) (Table 8). But for urban residents, outpatient costs have consistently increased from Rs.152 in 1986-87 to Rs.225 in 2014. At all-India level, the cost of outpatient care for rural residents increased from 1986-87 to 2004 and then declined in 2014. Rural residents of Andhra Pradesh, Haryana, and Karnataka exhibit this trend. Thus, there is an increase in treatment expenses from 1986 to 2014, a drop from 1995 to 2014, and a flattening from 2004 to 2014. In some states, the cost of outpatient care has decreased in 1995–1996 when compared to 1986–1987, increased in 2004, and then decreased in 2014. This wave pattern is seen in Kerala, Assam, Bihar, and Gujarat. In these situations, the cost in 2014 was lower than the cost in 1986–1987, resulting in a negative annual change from 1986–2014. For rural residents, nine states—Haryana, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, Uttar Pradesh, and West Bengal—have seen changes that are more than the 0.9% national average.

In all four time periods, outpatient costs for urban inhabitants in India as a whole increased, with an average yearly growth of 1.8% from 1986 to 2014. A notable percentage change was observed in Assam, where costs were at their lowest in 1986-87. Only Andhra Pradesh, Assam, Odisha (with a very slight real-term increase nonetheless), and Tamil Nadu have recorded a cost increase throughout the course of all four time periods. Due to the sharp increase in costs in 2014, the annual change in outpatient costs for urban residents in the recent ten years (2004-2014) has increased by 2.8%, more than it did in 1986-2014 and 1995-2014. Assam, Haryana, Himachal Pradesh, Rajasthan, and Tamil Nadu all experience a sharp increase in cost in real terms.

People should have enough insurance coverage to protect themselves from financial risks due to the rising costs of treatment, especially for inpatient care, as is covered in the section that follows

Table 7

Table 7 Cost of Treatment for Inpatient Care, 1986-87 to 2014 (at 1993-94 prices)				
State	Average Cost of Treatment (Rs)		Annual Percentage Change	
	Rural inpatient	Urban Inpatient	Rural inpatient	Urban inpatient

	1986 -	1995 -	200 4	201 4	1986 -	1995 -	2004	2014	1986 -	1995 -	2004 -	1986 -	1995 -	2004 -
	87	96			87	96			2014	2014	2014	2014	2014	2014
Andhra Pradesh	1291	5273	344 2	409 2	1470	4008	5427	9228	8.0	-1.2	2.1	19.5	7.2	7.8
Assam	900	1595	222 5	167 4	1655	3109	6087	1021 9	3.2	0.3	-2.8	19.2	12.7	7.5
Bihar	2089	3166	377 6	280 4	1984	3055	5953	5738	1.3	-0.6	-2.9	7.0	4.9	-0.4
Gujarat	1481	2184	323 6	385 2	2084	2729	4718	5678	5.9	4.2	2.1	6.4	6.0	2.3
Haryana	2438	2645	509 7	494 1	1391	5362	7967	8836	3.8	4.8	-0.3	19.8	3.6	1.2
Himach al Prades h	1719	2075	470 5	510 3	1862	2168	5223	7630	7.3	8.1	0.9	11.5	14.0	5.1
Jammu & Kashmir	1163	2090	301 5	214 4	1148	2963	4195	3444	3.1	0.1	-3.2	7.4	0.9	-2.0
Karnataka	1626	2458	347 0	371 3	2150	2947	4459	6307	4.8	2.8	0.8	7.2	6.3	4.6
Kerala	796	1881	224 9	555 1	843	1581	3048	5137	22.1	10.8	16.3	18.9	12.5	7.6
Madhya Pradesh	1205	1797	270 6	314 1	1041	2276	3760	6460	6.0	4.2	1.8	19.3	10.2	8.0
Maharashtra	1628	2534	343 6	536 9	2682	3279	5365	8072	8.5	6.2	6.2	7.4	8.1	5.6
Odisha	1353	1346	246 0	251 1	1282	3173	3545	5274	3.2	4.8	0.2	11.5	3.7	5.4
Punjab	2524	4092	715 8	735 6	2795	4686	1135 4	8296	7.1	4.4	0.3	7.3	4.3	-3.0
Rajasthan	1856	2492	446 5	341 7	1329	2583	4517	4575	3.1	2.1	-2.6	9.0	4.3	0.1
Tamil Nadu	845	2330	312 9	480 2	1246	3227	6379	8467	17.3	5.9	5.9	21.5	9.0	3.6
Uttar Pradesh	2266	3567	521 1	421 4	3266	4836	5285	8615	3.2	1.0	-2.1	6.1	4.3	7.0
West Bengal	757	1605	247 4	307 0	1914	2639	4876	6824	11.3	5.1	2.7	9.5	8.8	4.4
All-India	1605	2627	340 8	396 5	2227	3216	5272	7109	5.4	2.8	1.8	8.1	6.7	3.9

Table 8

Table 8 Cost of Treatment for Outpatient Care, 1986-87 to 2014 (at 1993-94 prices)

State	Average Cost of Treatment (Rs)								Annual Percentage Change					
	Rural Outpatient				Urban Outpatient				Rural Outpatient			Urban Outpatient		
	1986	1995	200	201	1986	1995	200	201	1986	1995	2004	1986	1995	2004
	-	-	4	4	-	-	4	4	-	-	-	-	-	-
	87	96			87	96			2014	2014	2014	2014	2014	2014
Andhra Pradesh	126	135	156	133	119	141	184	203	0.2	-0.1	-1.6	2.6	2.4	1.1
Assam	158	124	184	120	23	148	239	547	-0.9	-0.2	-3.9	86.1	15.0	14.4
Bihar	297	175	239	226	175	174	181	186	-0.9	1.6	-0.6	0.2	0.4	0.3
Gujarat	154	129	181	154	175	179	240	146	0.0	1.1	-1.6	-0.6	-1.0	-4.3
Haryana	136	155	240	182	134	340	140	299	1.3	1.0	-2.7	4.6	-0.7	12.6
Himachal	247	71	140	179	222	109	179	326	-1.0	8.4	3.1	1.7	11.1	9.2

Pradesh														
Jammu & Kashmir	192	154	179	255	154	122	245	265	1.2	3.6	4.7	2.6	6.5	0.9
Karnataka	88	100	245	152	124	141	195	206	2.7	2.9	-4.2	2.4	2.6	0.6
Kerala	115	112	195	156	96	98	110	190	1.3	2.2	-2.2	3.6	5.1	8.1
Madhya Pradesh	141	127	110	217	220	308	190	241	2.0	3.9	10.9	0.3	-1.2	3.0
Maharashtra	190	135	190	161	192	152	183	245	-0.6	1.0	-1.7	1.0	3.4	3.8
Odisha	117	121	183	184	111	112	156	213	2.1	2.9	0.1	3.4	5.1	4.1
Punjab	154	144	156	173	151	133	199	243	0.5	1.2	1.3	2.3	4.6	2.4
Rajasthan	188	157	199	168	207	162	172	316	-0.4	0.4	-1.7	2.0	5.3	9.3
Tamil Nadu	77	84	172	155	87	106	156	184	3.7	4.7	-1.1	4.2	4.1	2.0
Uttar Pradesh	169	184	156	213	235	186	195	329	1.0	0.9	4.0	1.5	4.3	7.6
West Bengal	98	107	195	150	164	112	182	180	2.0	2.2	-2.6	0.4	3.3	-0.1
All-India	141	144	182	176	152	159	180	225	0.9	1.2	-0.4	1.8	2.3	2.8

4. HEALTH INSURANCE AND FINANCIAL PROTECTION

India's economy is expanding in the provision of health insurance coverage to its people. Inpatient hospitalisation and certain medical care are covered by health insurance companies in India. The Indian government has permitted private companies in the insurance industry since 2000. However, according to the National Health Policy 2015, 72% of all persons covered by insurance fall under government sponsored schemes. Of these, 60% were covered by government/public insurance companies with the remaining being covered by private insurance companies.

The central government of India has implemented creative measures from the middle of the 2000s to enhance public health care. Low-cost hospitalisation insurance programmes were created by the public insurance companies as part of this effort to address the healthcare requirements of the underprivileged section of the society. These included the *Rashtriya Swasthya Bima Yojana* (RSBY) in 2008 and the *Jan Arogya Bima* Policy in the middle of 2000. A number of state governments, including Karnataka, Tamil Nadu, and Rajasthan, have introduced a unique state-level medical insurance programme to shield their citizens from the financial hazards brought on by catastrophic illnesses. Over time, the RSBY scheme's coverage and benefits package were increased to include informal sector workers in households that were above the poverty line (Government of India, 2015). In terms of health insurance expenditure (HIE), the private sector accounted for Rs. 17755.31 crores in 2014–15, while the government-financed health insurance schemes (which include the RSBY and other state government sponsored programmes) accounted for Rs. 4589.84 crores (Government of India, 2017a, p.28).

4.1. HEALTH INSURANCE SUBSCRIPTION AND EQUITY

A question about the amount of health insurance premium paid by the household during the last 365 days has been asked by the NSS since 1995-96 Round. It's analysis in terms of the percentage of households reporting subscription was 0.5% in 1995-96, 1.9% in 2004 and rose to 6.1% in 2014. The response to the question on amount of annual premium paid was turned out to be data artefact especially in the NSS 71st Round (2014) whilst the BPL households under the RSBY got enrolled without paying any charges. As a result, the predicted subscription rate proved to be inaccurate. However, during the NSS 71st round, a new question on enrolment in privately or in government-funded health insurance programmes,

such as RSBY, was asked to every household member. From the database, we computed a variable called "household health insurance coverage" where at least one person had signed up for any government or private health insurance plan (regardless of whether they had paid any annual premium). Therefore, only information from the NSS 71st round was analysed here to present facets of health insurance and financial protection received by subscribers.

Table 9 lists the socioeconomic characteristics of households together with their health insurance coverage. A larger percentage of households who had health insurance cover were from higher Monthly Per Capita Expenditure (MPCE) group as well as from upper social strata and were residents in urban areas (see Table 9). As expected, its coverage was low among backward caste and Muslim households. The percentage of families registered in health insurance plans across MPCE quintiles varies significantly between states (see Table 10). This may show how different states are able to adopt health insurance plans specifically or other plans in general. In comparison to the All-India average, health insurance coverage was higher in only five states: Andhra Pradesh, Kerala, Odisha, Rajasthan, and Tamil Nadu. On the other hand, Assam, Bihar, Madhya Pradesh and Uttar Pradesh reported an extremely low coverage. Additionally, the differential in inter-quintile MPCE (between the top and bottom quintile) reveals enormous inter-state inequities in health insurance coverage. Interestingly those states reporting higher coverage have addressed equity issues well, i.e., the coverage was higher in bottom vs. top MPCE quintile households. The highly equitable states were Andhra Pradesh, Kerala, Odisha, and Rajasthan. On the other hand, the low coverage states particularly Haryana, Karnataka, Maharashtra and West Bengal were found to have reported a highly inequitable coverage.

Table 9

Table 9 Percentage of Households having at least one member Enrolled to Health Insurance (Coverage) by Socio-Economic Status, 2014

Socio-economic groups	% Insurance Coverage		
	Rural	Urban	All
MPCE quintile			
1 (Bottom)	13.10	9.26	12.68
2	14.28	12.13	13.91
3	18.53	15.7	17.83
4	22.22	19.55	21.19
5 (Top)	24.55	29.53	28.21
Social group			
SC & ST	18.20	18.13	18.19
OBCs	17.75	21.86	19.06
Other	13.96	23.29	18.29
Religion			
Hindu	17.86	22.36	19.27
Muslim	11.27	15.38	12.82
Other	16.57	30.99	21.93
All	17.03	21.84	18.60

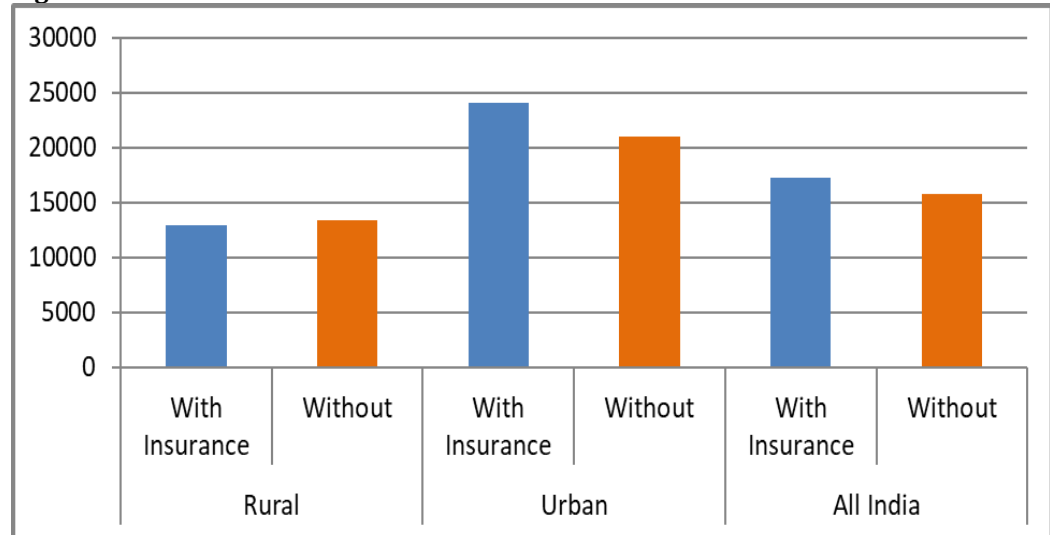
Table 10

Table 10 Percentage of Households with Health Insurance Coverage by Major States, 2014									
Major States	Rural	Urban	All	MPCE Quintile					Ratio (Top/Bottom)
				Bottom	2nd	3rd	4th	Top	
Andhra Pradesh	72.93	50.42	65.74	54.08	68.39	72.80	72.15	49.20	0.91
Assam	2.26	12.99	3.70	2.64	2.25	1.39	8.55	9.20	3.49
Bihar*	7.15	5.41	6.97	8.86	6.95	4.60	4.51	4.71	0.53
Gujarat	13.77	18.83	15.98	15.06	11.47	10.47	13.47	25.42	1.69
Haryana	3.00	19.75	8.88	0.03	1.92	5.17	8.19	21.70	684.84
Himachal Pradesh	13.13	16.58	13.57	7.23	7.92	8.33	15.12	23.26	3.22
Jammu & Kashmir	9.04	18.24	11.11	7.57	14.44	7.93	4.24	20.67	2.73
Karnataka	9.92	20.26	14.16	6.23	6.57	8.49	14.74	34.17	5.49
Kerala	51.15	42.54	47.22	79.18	58.56	51.75	49.23	41.97	0.53
Madhya Pradesh*	0.44	8.68	2.61	0.69	0.19	2.52	4.72	13.42	19.41
Maharashtra	3.39	17.39	9.87	0.84	2.84	1.81	5.31	24.75	29.41
Odisha	23.70	13.99	21.92	30.10	16.32	11.10	10.53	19.05	0.63
Punjab	4.30	11.33	7.07	0.23	5.11	3.75	4.58	11.31	49.69
Rajasthan	24.39	29.38	25.75	39.93	21.36	18.75	18.56	34.68	0.87
Tamil Nadu	19.34	26.29	22.87	6.19	14.52	19.52	22.65	32.20	5.20
Uttar Pradesh*	4.90	8.87	5.86	4.93	6.42	3.04	3.16	16.34	3.31
West Bengal	16.46	23.01	18.54	13.87	18.13	18.73	13.08	32.71	2.36
All	17.03	21.84	18.60	12.68	13.91	17.83	21.19	28.21	2.22

Note: * As there is no inter-state comparisons with previous NSS Rounds, we have not added in this table Chhattisgarh with Madhya Pradesh, Uttarakhand with Uttar Pradesh and Jharkhand with Bihar.

4.2. EXTENT OF FINANCIAL PROTECTION RECEIVED FOR HOSPITALISATION

According to [Sundarraman and Muraleedharan \(2015\)](#), expanding health insurance coverage has not proven to be effective at delivering financial security. To verify this claim, we calculated the difference in median hospitalisation costs between households with and without health insurance ([Figure 2](#)). Surprisingly, at the national level, those with insurance reported greater hospitalisation costs than households without insurance (Rs. 17261 vs. Rs. 15773), and this difference was significantly larger for households living in urban areas. Only rural households had a small amount of relief (Rs. 12908 vs. Rs. 13396), translating to 3.8% reduced costs for the insured. This demonstrates unequivocally that health insurance has offered only minimal financial protection against the grand claims.

Figure 2**Figure 2** Hospitalisation Cost (In Rs.) for Households with and without Health Insurance Coverage, 2014

Regardless matter whether a household has insurance or not, there are significant interstate differences in hospitalisation costs between households in rural and urban locations. We have therefore presented the findings in terms of cost ratios in [Table 11](#) in order to draw useful conclusions. The extremely high negative cost ratios (between -48 and -58%) in Haryana, Maharashtra, Himachal Pradesh, and Assam show that insured households ultimately spend nearly twice as much for hospitalisation as their non-insured counterparts. Additionally, a number of other states also recorded negative cost ratios. This clearly illustrates the broad prevalence of moral hazard and insurance collusion in India, with the exception of Kerala (where insured households have only paid half the cost of the uninsured).

In conclusion, just a few states—Andhra Pradesh, Kerala, and Rajasthan—have targeted health insurance coverage, which aims to offer adequate financial protection against catastrophic medical bills. The provision of efficient health insurance coverage remains a significant task and a far-off dream for the majority of states (including economically progressive ones). Further investigation on the scope of health insurance protection revealed that rural Indian households have not received any financial assistance from insurance, save for a small amount. The presence of moral hazard and insurance collusions in urban India, particularly in economically developed regions like Punjab, Haryana, Gujarat, and Maharashtra, appears to be clearly evident which requires additional data exploratory study.

Table 11**Table 11 Mean Hospitalisation Expenses for Households with and without Health Insurance Coverage by Major States, 2014**

Major States	With Insurance Coverage			Without Insurance Coverage			Ratio of costs between Without and with insurance (%)		
	Rural	Urban	All	Rural	Urban	All	Rural	Urban	All
Andhra Pradesh	13866	14343	13993	13481	21727	16089	-2.78	51.48	14.98
Assam	6818	45886	20760	6335	37152	10794	-7.08	-19.03	-48.01
Bihar*	14109	23520	14665	10076	19192	11038	-28.58	-18.4	-24.73
Gujarat	14922	34620	24915	11570	15558	13234	-22.46	-55.06	-46.88

Haryana	25736	45565	43764	17035	21342	18363	-33.81	-53.16	-58.04
Himachal Pradesh	31024	29105	30855	15540	15557	15541	-49.91	-46.55	-49.63
Jammu & Kashmir	5704	16151	9151	9420	12863	10060	65.15	-20.36	9.93
Karnataka	15751	25826	21234	12502	18826	14641	-20.63	-27.1	-31.05
Kerala	9758	13336	11128	25096	18479	22301	157.18	38.56	100.4
Madhya Pradesh*	11658	22181	18205	10382	19877	13061	-10.95	-10.39	-28.26
Maharashtra	28537	43195	40058	18233	23095	20021	-36.11	-46.53	-50.02
Odisha	8912	21013	10418	10820	18797	12391	21.41	-10.55	18.94
Punjab	18359	49084	32547	22363	24775	23199	21.81	-49.53	-28.72
Rajasthan	8938	16923	11543	10659	12339	11063	19.25	-27.09	-4.16
Tamil Nadu	20297	24754	22848	12075	24151	17933	-40.51	-2.44	-21.51
Uttar Pradesh*	14465	19347	17298	14371	26114	17247	-0.65	34.98	-0.29
West Bengal	9029	29907	16457	9887	20524	13068	9.5	-31.37	-20.59
All	12908	24070	17261	13396	21019	15773	3.78	-12.68	-8.62

Note: * same as Table 10. Highlighted states have reported a higher than the All-India average of health insurance coverage as shown in Table 10.

5. SUMMARY AND CONCLUSIONS

The WHO evolved the concept of Universal Health Coverage (UHC) in order to reduce healthcare seeking barriers and achieve global health improvement especially across Low and Middle Income Countries (LMICs). This paper is primarily focused on understanding the progress made by various Indian states in terms of providing healthcare access, the quality of health services, and reducing the financial hardship faced by their rural and urban residents in order to achieve the UHC goal that "all people and communities receive the quality health services they need without financial hardship." Here, we have examined data from four NSS Rounds (1986–87 through 2014) on morbidity and health care use for 17 major states by rural and urban areas, focusing on (a) trends in people's health seeking behaviour, (b) reasons for not accessing health care, (b) reliance on government and private health providers, (d) cost and burden of treatment, and (e) health insurance coverage and financial protection for the poor.

Overall, we can say that India's healthcare demands during 1986-87 were largely met by public health providers. But it is losing importance. Despite some state governments' attempts to reinstate the public delivery of healthcare by 2004, the gap appears to have grown by 2014. In 2014, just 50% of rural populations and approximately 35% of urban residents could rely on public health services. While the majority of men and women sought treatment for their illnesses, we notice that the percentage of people who reported not having access to a medical facility is higher for rural than for urban populations, indicating that most private health providers tend to focus on urban areas and that public health care must fill this gap. In addition, fewer persons reported having illnesses that did not require treatment during the course of the surveys, which suggests that both rural and urban residents are more likely to seek medical attention. Additionally, the rise of government hospital beds over the past ten years, especially in rural areas, has significantly improved the way people seek out medical care. A improved public health programme would greatly reduce the number of lost workdays due to illness as the

country's morbidity rate rises over time. This would boost options for income and livelihood and lessen the vulnerability of both the poor and those living in rural areas.

In order to address the rising need for healthcare, the government has also pushed private healthcare providers over the years, particularly in the post-liberalization phase. Without a doubt, reliance on public providers for outpatient treatment has decreased as a result of the significant increase of private providers throughout the 2000s. However, due to cost factors, they did not generally succeed in lowering reliance on public providers for inpatient care. When compared to public providers, the cost of private hospital care has remained consistently higher across the nation. Although the difference in treatment costs between public and private providers is gradually closing, the cost of care in public health facilities is still rising. This may be partially attributed to the fact that the private sector is reluctant to provide care for critically ill patients.

The improvement in the use of public healthcare facilities for inpatient care, particularly by rural populations in various states, is directly related to the growth of public healthcare infrastructure over the past ten years. The National Rural Health Mission (NRHM) finance programmes are responsible for some of these health infrastructure upgrades. However, we notice a sharp decline in the number of patients receiving free beds and medications, which requires attention. If state governments closely adhere to an essential drug list and buy generic medications through a pooled procurement scheme, their limited finances can be used effectively. The central government's two recent initiatives to require only generic names on prescriptions and to establish a *janaushadhi* store in every district hospital could lower patients' out-of-pocket costs significantly.

Due to the type of health insurance questions included in the questionnaire, including the responses for the clubbed categories of various government health protection schemes like RSBY, the analysis regarding health insurance coverage and financial protection over various NSS rounds was restricted. Despite this, NSS 71st round (2014) data analysis shows that targeted health insurance coverage to give efficient financial protection to the underprivileged and subsequently to pay catastrophic healthcare bills has remained limited to certain states. 'Pro-poor health insurance coverage' states include Andhra Pradesh, Kerala, and Rajasthan; on the other end of the spectrum, Madhya Pradesh, Assam, Punjab, and Uttar Pradesh had a dismal scenario (i.e., enrolment in favour of the better-off class). Thus, providing and implementing efficient health insurance coverage to the poor and vulnerable population remains an enormous challenge for the majority of states, including the economically successful states of Punjab, Haryana, Maharashtra, and Gujarat, and presents a significant hurdle to achieving the UHC target.

Making a decision about the sort of health insurance has challenges as well. It has been found that the effect of health insurance on reducing financial risk varies depending on the environment and the type of insurance. Aarogyasri scheme in Andhra Pradesh was found to have a significant impact over lowering OOP inpatient expenditures [Fan et al. \(2012\)](#), whereas RSBY has failed to protect insured households from the burden of healthcare costs in most states (a limited penetration of the scheme for poor and rural people was found in Karnataka [Rajasekhar et al. \(2011\)](#) and Maharashtra [Ghosh \(2014\)](#)). Once more, a few Community Based Health Insurance Schemes were discovered to be successful at attracting funding to meet healthcare needs [Jakab and Krishnan \(2001\)](#). In addition, there is a need to reduce supplier-induced demand for healthcare lest the poor lose out on the benefits of

health insurance, as study reveals that moral hazard is common in an effort to overcharge households with health insurance for healthcare expenditures.

The success of the recently implemented Ayushman Bharat or National Health Protection Scheme needs to be discussed in light of the aforementioned analysis. While this programme focuses on covering secondary and tertiary hospitalisation costs up to Rs. 500 000 per year per household, it is recommended that government spending on preventive and promotion health care be enhanced to lower the likelihood of hospitalisations. In order to prevent and manage non-communicable diseases, public investment should be focused on behavioural lifestyle factors due to the rising incidence of non-communicable diseases and associated co-morbidity rates.

Another issue related to this national health protection scheme is in regard to effective implementation by the state governments which already have their own health insurance schemes. The biggest obstacle is enhancing the hospital's physical infrastructure and personnel resources to enable improved access for patients, especially those living in remote areas. A quicker and consistent implementation of the Clinical Establishment Act 2010 (CEA) across all states will guarantee that all hospital services are priced in accordance with the guidelines established by the government because health providers will be paid for their services. Additionally, it would guarantee that the same standards and quality are upheld throughout all hospitals, both public and private. These measures would make it easier to apply policies uniformly and compensate employees in accordance with established criteria. Only by successfully implementing the CEA will the price differential between public and private health providers be narrowed. To accomplish the Sustainable Development Goal-3, which is to "ensure healthy lives and promote wellbeing for all at all ages," it is important to note that while the plan will cover post-illness episodes, focused resources will also need to be spent on primary and preventive health care.

CONFLICT OF INTERESTS

None.

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