Private Hospitals in Health Insurance Network in India: *A Reflection for Implementation of Ayushman Bharat*

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Private Hospitals in Health Insurance Network in India: *A Reflection for Implementation of Ayushman Bharat*

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Abstract

Private hospitals are expected to play a key role in the implementation of government sponsored health insurance schemes (GSHIS) in India. This paper examines the availability and spread of private hospitals in the country to provide insights on the potential access to insured health services in GSHIS schemes. It uses three sets of information to analyse the issue: private hospitals empanelled by insurance companies, the 6th Economic Census, and private hospitals empanelled in GSHIS schemes in four States. The analysis suggests that, in low-income States of the country, empanelment of private hospitals by insurance companies is low and concentrated in a few pockets. This pattern closely corresponds to the pattern of availability of private hospitals indicated in the 6th Economic Census. In Andhra Pradesh, Telangana, Tamil Nadu and Karnataka, the four States which have some of the largest GSHIS schemes in the country, there is a strong correspondence between private hospitals empanelled by insurance companies and private hospitals empanelled in GSHIS schemes. In these States, the extent of empanelment of private hospitals in GSHIS schemes is also substantially smaller than the empanelment of private hospitals by insurance companies. This may indicate differences in entry conditions or low willingness of private hospitals to participate in GSHIS schemes.

Key Words: Private health providers, Private hospitals, Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana, Access to health care, India

JEL Classification Codes: I11, I14

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Introduction

The expansion of government sponsored health insurance schemes (GSHIS) in India over the last decade has brought private health care providers to the forefront more than before. Over the years, several GSHIS schemes which rely mostly on private health care providers for service delivery have been initiated and expanded throughout the country. The most recent and largest of these initiatives is the Ayushman Bharat –Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY) announced recently by the Government of India (GoI), which intends to provide insurance coverage for secondary and tertiary hospitalisation to about 10 crore underprivileged households across the country. The key role of private providers in AB-NHPM is reflected in the fact that the National Health Agency (NHA) – apex body of the government for implementation of the scheme has held discussions with representatives of private hospitals to ensure smooth implementation of the scheme[5,6]. However, little is known on the nature and spread of private hospitals in India.

Existing evidence on private health facilities across the country is confined to relatively small unincorporated establishments (Mackintosh *et. al.* 2016, Hooda 2015).[7] The processes and agencies of registration of private providers vary significantly across States and this makes it difficult to get a comprehensive list of private providers across the country. Most studies therefore, are based on primary surveys in selected urban pockets (Muraleedharan 1999, Bhatt 1993, George 2014, Baru 1993). These surveys indicate that the majority of private hospitals have less than 50 beds. In terms of ownership, they include large hospitals funded by business houses (often termed as 'corporate' hospitals), small establishments in the form of nursing homes (Patel *et. al.* 2015, Baru 1993) and not-for-profit hospitals owned by trusts and missionaries (Muraleedharan, 1999). Of late, lists of empanelled hospitals in GSHISs also provide some indication of the availability of private providers in a few Indian States. However, these are confined to the hospitals participating in the schemes in the respective states, and may not represent the scenario of the entire country. Recent country-wide figure on private establishments engaged in 'hospital' activities is available from the 6th Economic Census conducted in 2013-14 by the Ministry of Statistics and Programme Implementation. However, the database is partial in coverage, and biased towards relatively small private establishments (For more discussion, refer section on Data Sources and Methodology).

A recent circular issued by the Insurance Regulatory Development Authority (IRDA) in India has made it possible to analyse the country-wide spread of private hospitals which are in the network of insurance companies and Third Party Administrators (TPAs). The circular, which was issued in 2016 mandated all private hospitals associated with insurance companies or TPAs to register with ROHINI (Registry of Hospitals in Network of Insurance) maintained by Insurance Information Bureau (IIB), a subsidiary of IRDA, by March 2017. This has made ROHINI a potential source of information on all hospitals which are in the network of insurance companies and TPAs.

[5] http://pib.nic.in/newsite/PrintRelease.aspx?relid=180124

[6] https://www.moneycontrol.com/news/economy/policy/no-reason-for-pvt-hospitals-to-sit-out-of-path-breaking-govt-initiative-ayushman-bharat-ceo-2843531.html

[7] Unincorporated enterprises are those which are not registered under the Companies Act.

This paper examines the availability and distribution of private hospitals across India using information on empanelment of private hospitals by insurance companies reported in ROHINI. Although the involvement of private hospitals in AB-PMJAY may not be confined to this set of hospitals alone, an analysis of this dataset gives an idea of the availability of private hospitals that may be willing to participate in health insurance schemes across the country. As the database is partial in nature, we also use the Economic Census to add insights. Further, to examine whether the distribution of private hospitals empanelled by insurance companies resemble the distribution of private hospitals in government sponsored insurance schemes, we compare the two in Andhra Pradesh, Telangana, Tamil Nadu and Karnataka - the four States which have some of the largest GSHI schemes in the country. Further, to highlight the potential differences in availability of private providers by type of services we analyse the number of providers registered for different health services in state-sponsored insurance schemes in the four States.

Data Sources and Methodology:

The analysis is carried out using three data sets (1) the ROHINI database compiled by Insurance Information Bureau (IIB) of India, which gives information on private hospitals empanelled by insurance companies (or third party administrators), (2) 6th Economic Census 2013-14 conducted by the Ministry of Statistics and Programme Implementation, Government of India and (3) data on private hospitals empanelled in state-sponsored insurance schemes of Andhra Pradesh, Telangana, Tamil Nadu and Karnataka.

ROHINI provides information on hospitals enlisted by insurance companies or third party administrators (TPAs) (or jointly) for providing medical services to people covered by health insurance in India. These hospitals provide medical services to the individuals who are insured under private insurance schemes or state-sponsored insurance schemes which are operated by insurance companies. The medical services are provided to the insured either through cashless facility or reimbursement. As of May 2018, the database had a list of about 38935 hospitals, bulk of which was compiled by IIB from its past records, and uploaded in the ROHINI portal in 2015. The hospitals uploaded in 2015 were requested to verify their details and re-register in the ROHINI portal, to ensure that they were active. However, only about 15439 hospitals were registered as active hospitals in the database as of May 2018. Thus, although the database had a record of about 38935 hospitals, most of them did not renew their registration on the portal (Table 1). The current status of the remaining hospitals is not clear: whether they continue to exist or whether they continue to provide services under insurance schemes. This analysis focuses on the 15439 registered hospitals to analyse the spread of the private hospitals in the network of insurance companies.[8] The set of 15439 hospitals are all private, although the larger set of 38935 had a few public hospitals as well. Also, out of 15439, only 10012

[8] Of the set of 15439, nearly half (7622) of them extend cashless facility for health insurance and are often referred to as Network Providers. The remaining providers extend reimbursement facility only (Non-Network Providers).

hospitals had provided information on bed capacity and could be considered in the analysis of the size distribution of the enlisted hospitals (Table 1).[9] No information other than the location and bed capacity was available about the hospitals in the database.

Table 1: **Composition of ROHINI Database**

Sl. Number	Types of Hospitals	Number of Hospitals
A.	**Total Registered Hospitals as on May 2018**	**15439**
	Of which:	
A.1	Hospitals extending cashless facility (Network providers)	7622
A.2	Hospitals extending reimbursement facility only (Non-Network providers)	7817
A.3. (part of A)	Hospitals with information on number of beds	10012
C.	**Hospitals in the ROHINI database which did not renew registration**	**23496**
(D)= (A) + (C)	**Total number of hospitals listed in ROHINI as on May 2018**	**38935**

Source: Insurance Information Bureau (IIB) of India

Keeping in view that the ROHINI database does not cover all private hospitals, we also examine data from the 6th Economic Census (EC6) conducted by the Ministry of Statistics and Program implementation in 2015, which provides information on private establishments engaged in 'hospital activities'.[10] Notably, although a total of 2,105,76 private establishments were reported to be engaged in 'hospital activities', 97 per cent of these had an employment of less than 20 workers (the average being 6 workers). For AB-PMJAY, hospitals should have a minimum bed strength is 10 to be eligible for empanelment under the scheme. If one assumes a minimum worker to bed ratio of 2, then at least 20 workers would be required to be eligible for AB-PMJAY. By this criterion, only 3 per cent of private establishments engaged in hospital activities and reported in the economic census (5557 establishments) will be eligible for any state-sponsored scheme. The fact that the ROHINI database covers around 15439 hospitals (of which at least 8600 hospitals have a bed strength of more than 10) suggests that that there are many private hospitals that are empanelled by insurance companies (and are currently active), but are missed out in the Economic Census (EC). This points towards a partial coverage of relatively large size private establishments engaged in hospital activities in EC. However, it is important

[9] The set of hospitals with bed information (10012) is smaller than the set of 15439, because in the initial months of the ROHINI portal (after the database was uploaded in 2015), submitting bed information was not mandatory for hospitals. Subsequently, the field for bed information was made mandatory, and all hospitals which registered on the ROHINI portal after 3-4 months of its initiation, had to provide information on bed capacity. Thus, hospitals which do not have bed information are the ones which registered early in the ROHINI database.

[10] These include private establishments included under the NIC class 8610 which are engaged in hospital activities. The NIC class 8610 include the 'activities of general and specialized hospitals, sanatoria, asylums, rehabilitation centers, dental centers and other health institutions that have accommodation facilities, including military base and prison hospitals'.

to note that the EC has a higher coverage of relatively small private establishments than the ROHINI database. Although these small establishments are not currently eligible under AB-PMJAY, if the eligibility criteria under AB-PMJAY is relaxed in future, many of these small private establishments may be able to participate in the scheme. We therefore, analyse two sets of data from the 6th Economic Census: (1) all private establishments engaged in 'hospital activities' and (2) out of the set of (1) all establishments which had more than 20 or more workers. Thereby (2) is a sub-set of (1). While the latter corresponds to the hospitals that should be eligible for AB-PMJAY as per the prescribed criteria, the former includes small private hospitals as well, which may be eligible to participate in AB-PMJAY if the eligibility criteria on size of hospitals is relaxed under the scheme in future.[11]

In addition to the two databases above, we obtained information on private hospitals empanelled under State-sponsored health insurance schemes in four States: the Chief Minister's Comprehensive Health Insurance Scheme (CMCHIS) in Tamil Nadu, NTR Vaidya Seva Scheme (NTRVS) in Andhra Pradesh, Aarogyasri in Telangana and Arogya Karnataka. Information for Karnataka and Telangana was procured from the Suvarna Arogya Suraksha Trust and Aarogyasri Health care Trust respectively. For Tamil Nadu, information was provided by the Tamil Nadu Health Systems Project which coordinates the scheme. For Andhra Pradesh, information was culled out from the scheme website. Data included information on the location of empanelled hospitals, bed strength and the health services for which they were registered in 2018. A comparison of number of private hospitals in the four States from different databases is shown in Table 2. Notably, in some of the state-sponsored schemes, the list of empanelled hospitals includes facilities in neighbouring States. As our focus is on the distribution of private hospitals within each State, we included only those empanelled facilities in our analysis which are located within the boundaries of the State.

[11] The 73rd round of survey by the National Sample Survey Organization (NSSO) also provides information about unincorporated enterprises involved in 'hospital activities' However, the sample in this survey is drawn from the 6th Economic Census. We therefore, choose to analyze the Census and not the survey.

Table 2: Comparison of number of private hospitals empanelled in Andhra Pradesh, Telangana, Tamil Nadu and Karnataka by insurance companies, State-sponsored insurance schemes, and private hospitals in 6th Economic Census

States	Private Hospitals Empanelled by Insurance Companies			6th economic Census		Private Hospitals Empanelled in State-sponsored Insurance Schemes		
	Number of hospitals (with or without bed information)	Hospitals with information on bed strength	Hospitals with bed strength more than 10	Number of establishments engaged in hospital activities		Number of hospitals empanelled	Number of Hospitals empanelled within the boundaries of the state	Number of empanelled hospitals (within the State) with bed strength more than 10@@
				All	With employment more than 20			
Andhra Pradesh	762	512	495	8797	229	678	423**	421
Telangana	777	484	463	9144	345	237	237	237
Tamil Nadu	1790	890	823	20259	563	632	628	601
Karnataka	1091	709	649	18294	536	495	462	392

Source:

*Provided by Insurance Information Bureau (IIB) of India based on information in ROHINI

Provided by the Ministry of Statistics and Program Implementation (MoSPI)

@ For Telangana and Karnataka, information was provided by the Aarogyasri Health Care Trust and the Suvarna Arogya Suraksha Trust respectively. For Tamil Nadu, data was provided by the Tamil Nadu Health Systems Development Project (TNSDP), which coordinates the scheme. For Andhra Pradesh, data was extracted from the scheme website.

** 255of the 678 hospitals are empanelled in Telangana

@@ Hospitals need to have a minimum of 10 beds to be eligible for empanelment under AB-PMJAY.

Distribution of Private Hospitals Empanelled by Insurance Companies

Per capita empanelment of private hospitals by insurance companies is strongly associated with per capita income of states. The correlation coefficient between the two in the major States is about 0.83.[12] If one includes UTs and small States as well, the correlation coefficient is about 0.7.[13] The four states which are among the richest in the country Maharashtra, Haryana, Punjab, Gujarat have some of the highest per capita availability of private hospitals empanelled by insurance companies in the country (Figure 1). The State of Goa and NCT Delhi also have a relatively high availability of private hospitals (Figure 1). The relatively poor performing low income States rank at the bottom end of the ladder of per capita availability. Among the major States, the average per capita availability in States (Maharashtra, Haryana, Punjab, Gujarat, and Tamil Nadu) was about 7 times the average in the worst States (Bihar, Jharkhand, Odisha, Chhattisgarh, Madhya Pradesh). The difference in per capita availability in the Maharashtra and Bihar was more than 10 times (Figure 1). The broad relationship between per capita empanelment of private hospitals and per capita income in major States is shown in Figure 2.[14]

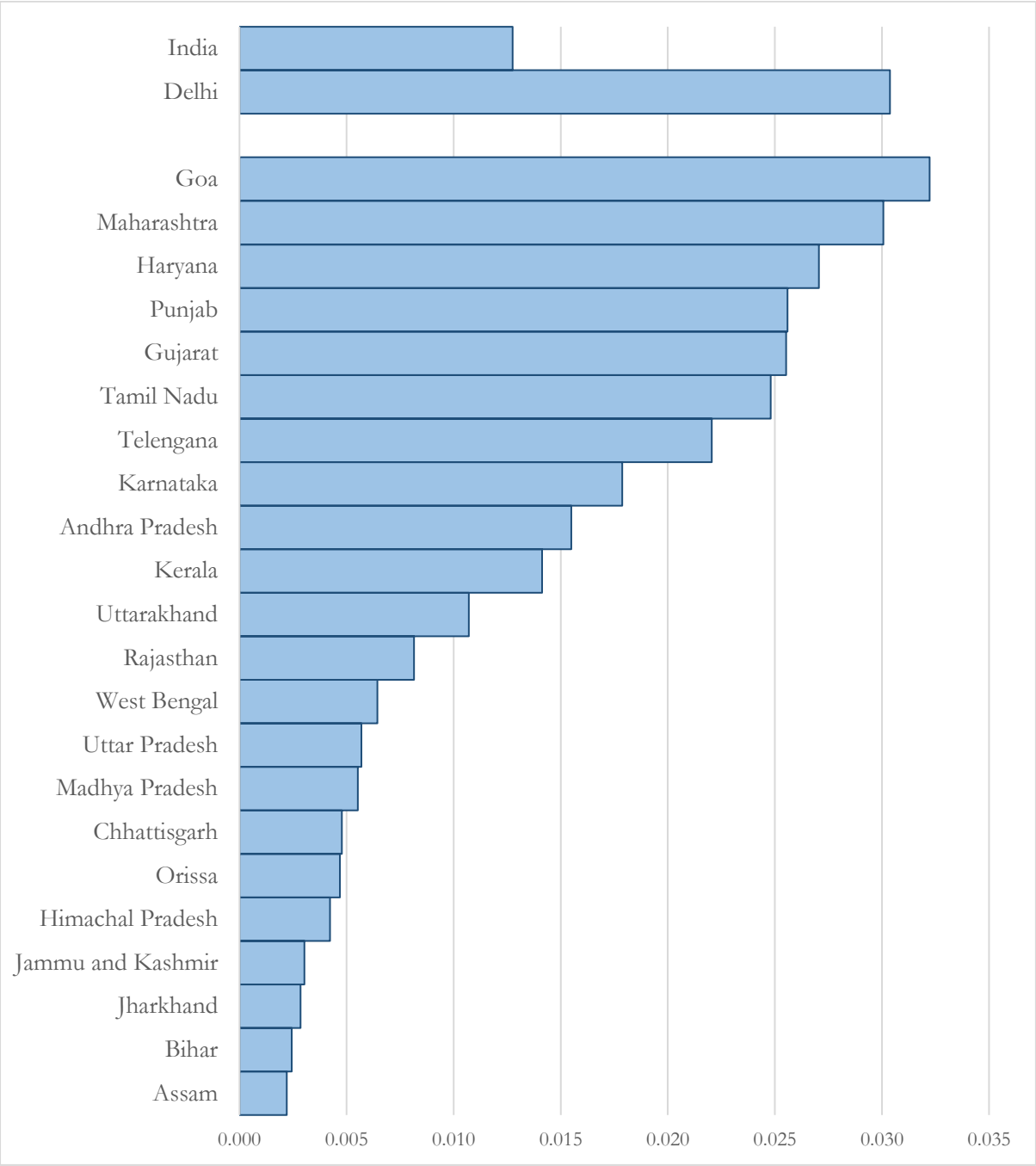
In low-income States, private hospitals empanelled by insurance companies are also concentrated in a few pockets. This is reflected in the fact that the coefficient of variation in availability of private providers across districts within each state is significantly higher in poorer states than richer states (Table 3). With low per capita availability of private hospitals in the low-income States, the skewed distribution of hospitals within the States is an area of concern as a significant proportion of the eligible population under AB-PMJAY is concentrated in these states (Table 3). In Bihar, about 73 per cent of all private providers in the state are concentrated in five districts, which account for only 19 per cent of the state's population. More than 50 per cent of all private providers in the state are located in the capital city Patna alone, while 14 out of the 38 districts have no private providers registered. In contrast, in Tamil Nadu, only 45 per cent of all private providers are concentred in 5 districts, which account for about 29 per cent of the State's population. Only two of the 32 districts do not have a registered private provider. District-wise distribution of private hospitals empanelled by insurance companies is shown in Figure 3.

[12] This excludes the relatively small States of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and the UTs. In the small States, the number of private hospitals empanelled by insurance companies was less than 10.

[13] The correlation coefficients are significant at 1 per cent level.

[14] Interestingly, even if one examines the set of 38935 hospitals in the ROHINI database, the pattern is very similar.

Figure 1: Availability of Private Hospitals Empanelled by Insurance Companies across Indian States (per thousand population)



Source: Authors' estimations based on information provided by IIB and population figures Census 2011

Figure 2: Scatter Plot of per capita NSDP across States and availability of private hospitals per thousand population

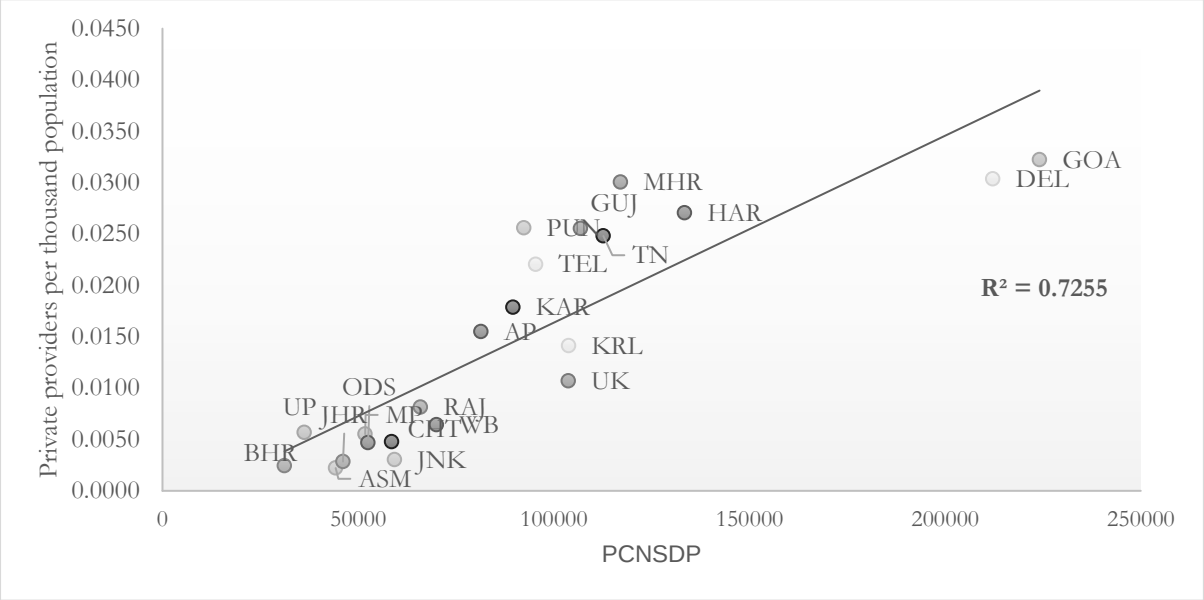
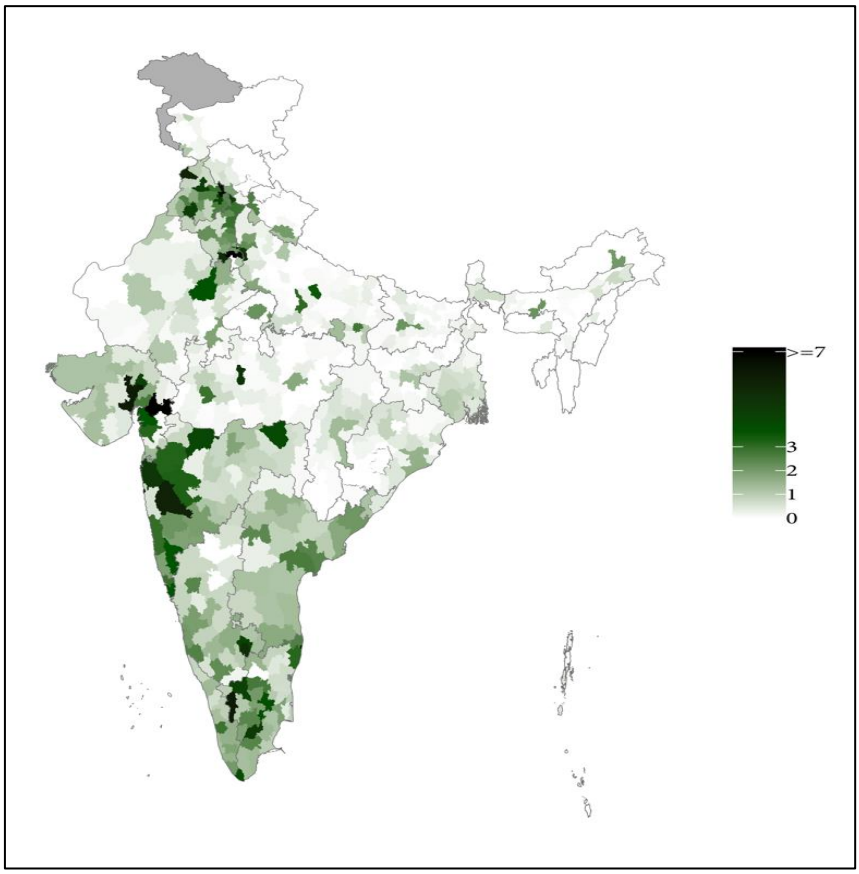


Figure 3: District-wise Private Hospitals Empanelled by Insurance Companies per lakh population



Source: Authors' estimations based on information provided by IIB and population figures based on Census 2011

Table 3: State-wise Inter-district Disparity in Private Hospitals Empanelled by Insurance Companies and Proportion of eligible households under AB-PMJAY

	Number of Districts	Number of Private Hospitals	Inter-district disparity (coefficient of variation)	Share in total number of eligible households under AB-PMJAY (per cent)
Andhra Pradesh	13	762	0.6	5.3
Assam	27	69	2.6	2.6
Bihar	38	253	3.1	10.4
Chhattisgarh	18	121	1.9	3.5
Goa	2	47	0.03	0.04
Gujarat	26	1541	1.9	4.3
Haryana	21	683	1.2	1.5
Himachal Pradesh	12	29	1.4	0.3
Jammu and Kashmir	22	38	2.5	0.6
Jharkhand	24	94	2.0	2.7
Karnataka	30	1091	2.4	3.9
Kerala	14	472	0.7	1.8
Madhya Pradesh	50	401	2.8	8.0
Maharashtra	35	3376	1.6	8.0
New Delhi	9	510	0.6	0.6
Orissa	30	197	1.6	5.8
Puducherry	4	26	1.9	0.1
Punjab	20	706	1.03	1.4
Rajasthan	33	559	2.5	5.7
Tamil Nadu	32	1790	1.3	7.4
Telangana	10	777	1.6	2.5
Uttar Pradesh	71	1135	2.1	11.2
Uttarakhand	13	107	1.7	0.5
West Bengal	19	588	1.0	10.6
UTs and Small States*	67	49	-	1.6
India	**640**	**15421**	**2.6**	**100**

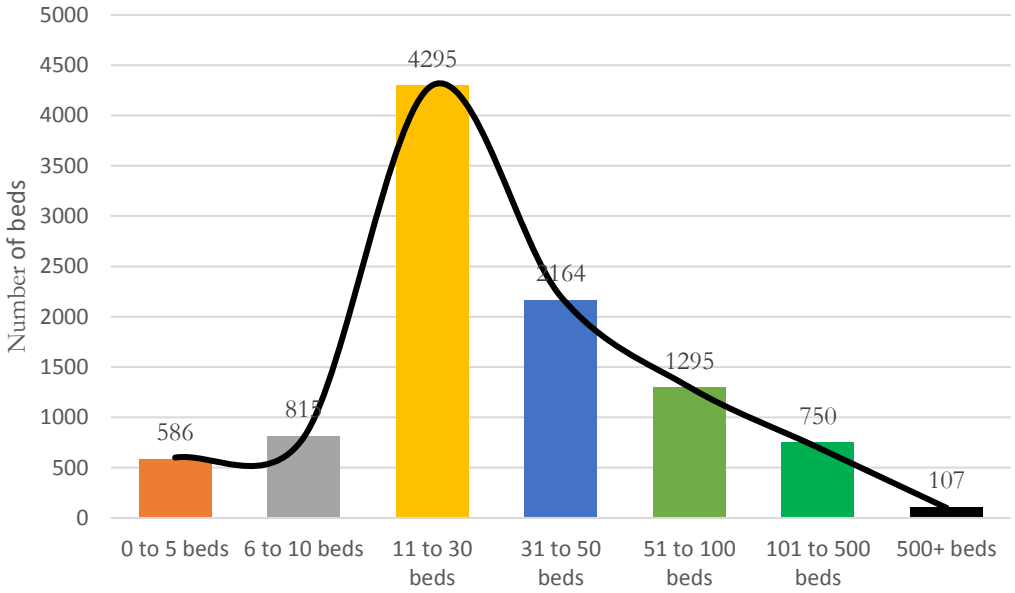
Source: Insurance Information Bureau (IIB) of India for number of private hospitals across States and districts.
@ Information on total number of households and eligible households under AB-PMJAY in each State has been sourced from the website https://www.pmjay.gov.in/state
* Small States include Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The coefficient of variation for all India is calculated across all districts of India.

Size Distribution of Private Hospitals Empanelled by Insurance Companies:

Bulk of the hospitals in the country's insurance network had a bed strength of less than 50. Of these, about two-thirds were less than 30 bedded. At the all-India level, about 65 per cent of hospitals in the dataset had bed strengths between 11 to 50 beds, 13 per cent between 50 to 100 beds and the remaining 8 per cent above 100 beds (Figure 4). This corresponds to the findings of a number of primary surveys which has pointed out that most private hospitals in the country are small establishments with less than 50 beds (Bhatt 1993, Muraleedharan 1999). The

distribution of private hospitals by bed strengths in different States are shown in Appendix Table A1).

Figure 4: Size distribution of private hospitals empanelled by Insurance Companies (number of beds)



Source: Insurance Information Bureau (IIB) of India

Distribution of Private Hospitals as per the 6th Economic Census

The spread of private establishments as seen in Economic Census also broadly corresponds to the pattern of private hospitals empanelled by insurance companies (See Figure 4A and 4B, Table 4). On average, the low income states show a lower availability of private establishments (per lakh population) than the high income states. This is true irrespective of whether one includes private hospitals with more than 20 workers (the set which broadly corresponds to the current eligibility criteria under AB-PMJAY), or all establishments (which includes smaller establishments as well), many of which may be eligible in future if the size criteria for hospitals is relaxed. If one uses the set of private hospitals with more than 20 workers, the correlation coefficient between per capita Net State Domestic Product NSDP and distribution of private providers in major States is about 0.7. If one includes UTs and small States, the correlation coefficient is about 0.6.[15]

[15] The correlation coefficients (both including and excluding UTs and small States) are significant at 1 per cent

Figure 4A : State-wise Private Establishments (engaged in 'hospital activities') as per Economic Census per lakh population

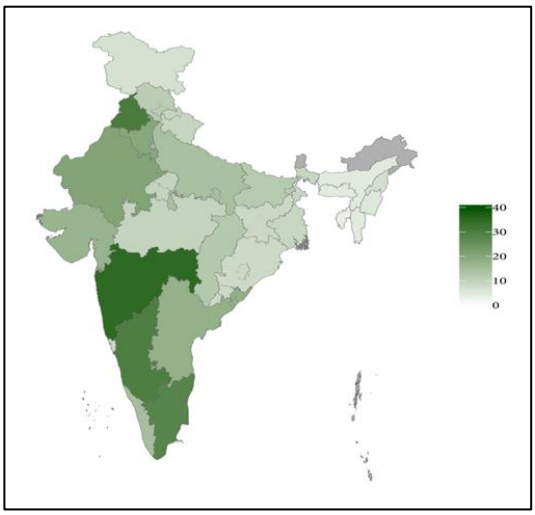


Figure 4B: State-wise Private Establishments (engaged in 'hospital activities' with 20+ workers) as per Economic Census per lakh population

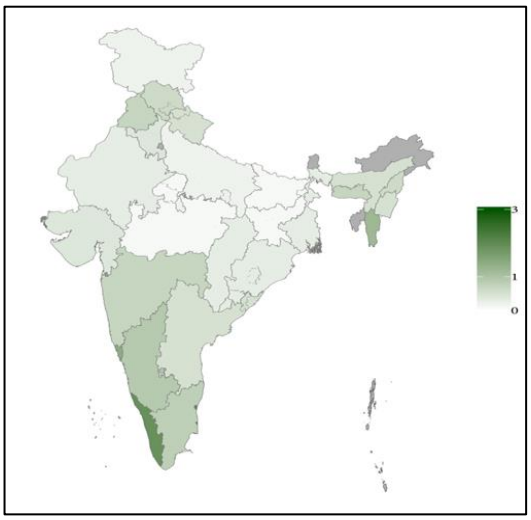
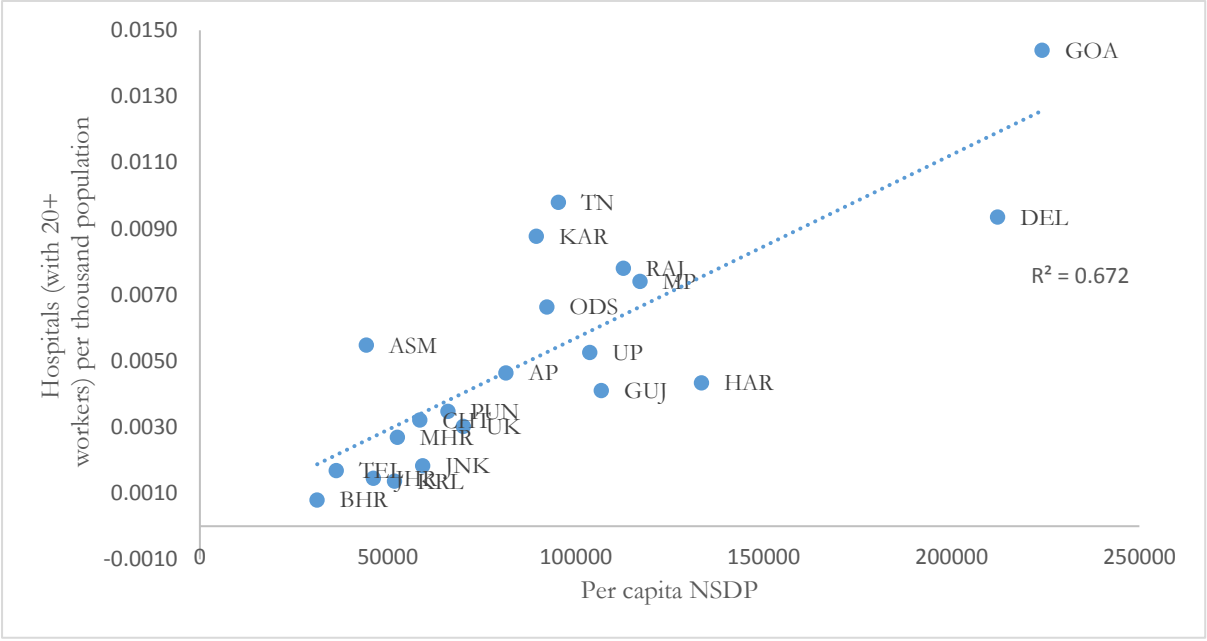


Table 4: Relationship between per capita NSDP and availability of private hospitals (per thousand population) across States as per 6th Economic Census



Source: Author's calculations based on 6th Economic Census *Note*: Kerala has been excluded from the above as it is an outlier. The availability in Kerala is multiple times more than all other States.

Correspondence between Private Hospitals Empanelled by Insurance Companies and State Sponsored Insurance Schemes

To examine if the pattern of empanelment of private hospitals by insurance companies broadly correspond to the empanelment of private facilities in government sponsored health insurance schemes, we examine the correspondence in the four states: Andhra Pradesh, Telangana, Tamil Nadu and Karnataka. If the empanelment by insurance companies and empanelment by State schemes exhibit a strong association, the spread of private hospitals empanelled by insurance companies can be used as a rough indicator of the potential for empanelment of private hospitals under GSHI schemes.

It may be noted that the state schemes in the four States use different criteria for empanelment of private hospitals. In Andhra Pradesh and Telangana, one of the core requirement for empanelment of hospitals for the state insurance schemes is that the facility should be registered under Andhra Pradesh or Telangana Allopathic Medical Care Establishments Act. Similarly, in Karnataka, the facilities need to be registered under the Karnataka Private Medical Establishment (KPME) Act. On the other hand in Tamil Nadu, the empanelment is primarily on the basis of availability of infrastructure, specialities and other facilities in the hospitals and requires only a registered PAN number. These differences may result in different degrees of barriers to participation of private providers in the four state schemes.

Data suggest that the extent of participation of private providers in four state schemes is much lower than the number of private hospitals empanelled by insurance companies (Table 2). In Andhra Pradesh, the number of empanelled private hospitals by the government is about 56 per cent of the number empanelled by insurance companies (Table 2). The corresponding figures for Telangana is 31 per cent, in Tamil Nadu 35 per cent and Karnataka 42 per cent (Table 2).

Irrespective of the extent of participation, figures indicate that in each of the four States, there is a strong positive correspondence between the inter-district distribution of private hospitals empanelled by insurance companies and those empanelled in state-sponsored health insurance schemes. In other words, districts which have relatively high empanelment in State-sponsored schemes are also the ones with high empanelment by insurance companies. The correlation coefficients between the share of private hospitals empanelled across districts in the two sets is between 0.8 to about 0.9 in Andhra Pradesh, Telangana and Tamil Nadu and about 0.6 in Karnataka (Table 4). In terms of per capita empanelment in districts, the correlation coefficients are also positive and significant (between 0.7 to 0.8) in Andhra Pradesh, Telangana and Tamil Nadu, but insignificant in Karnataka (Table 4). The relatively low association in Karnataka is partly due to the fact that the share of empanelment in Bangalore (including Bangalore rural) by insurance companies is multiple times more than the share in the State-sponsored scheme (nearly 50 per cent vs. 10 per cent). This is reflected in the fact that the correlation coefficients improve

if one excludes Bangalore (including Bangalore rural) from the calculations (Table 4).[16] Notably, if one uses the set of private hospitals which have more than 10 beds and are likely to be eligible under AB-PMJAY in each district, the correlation coefficients are similar (Table 4).

Table 4: Correlation Coefficients between the Empanelment of Private Hospitals by Insurance Companies and Empanelment of Private Hospitals in State-sponsored Insurance schemes

		Private Hospitals Empanelled by Insurance Companies			
		All Active Hospitals (Set of 15439)		Active Hospitals (with more than 10 beds)	
		Per capita empanelment	Share of districts	Per capita empanelment	Share of districts
Private Hospitals Empanelled in State-sponsored Health Insurance Schemes	**Andhra Pradesh**				
	Per capita empanelment	0.75*		0.84*	
	Share of districts	-	0.87*		0.9*
	Telangana				
	Per capita empanelment	0.8*		0.82*	
	Share of districts	-	0.77**		0.8
	Tamil Nadu				
	Per capita empanelment	0.69*		0.75*	
	Share of districts	-	0.81*		0.88*
	Karnataka				
	Per capita empanelment	0.22 (0.5*)		0.19 (0.45*)	
	Share of districts	-	0.6* (0.67*)		0.55* (0.5**)

Source: Authors' estimations based on information from IIB and State-sponsored insurance schemes provided by the respective agencies of the State governments. State-sponsored schemes include Chief Minister's Comprehensive Health Insurance Scheme (Tamil Nadu); NTR Vaidya Seva Scheme (Andhra Pradesh); Aarogyashri scheme (Telangana) and Arogya Karnataka.
Figures in parenthesis indicate correlation coefficient excluding the district of Bangalore (including Bangalore rural)
*Significant at 1 per cent ** Significant at 5 per cent

[16] Interestingly, even if we examine the distribution of private hospitals empanelled by state-sponsored insurance schemes with the distribution of all hospitals in the ROHINI database (i.e. the set of 38935 which includes a few public hospitals as well) the correlation is positive, significant and reasonably high in most cases. The relatively weak association of this set (38935) than the association with the set of active private hospitals (15439) is possibly due to the inclusion of a few public hospitals in the larger set.

Distribution of Private Providers by Services in State-Sponsored Health Insurance Schemes

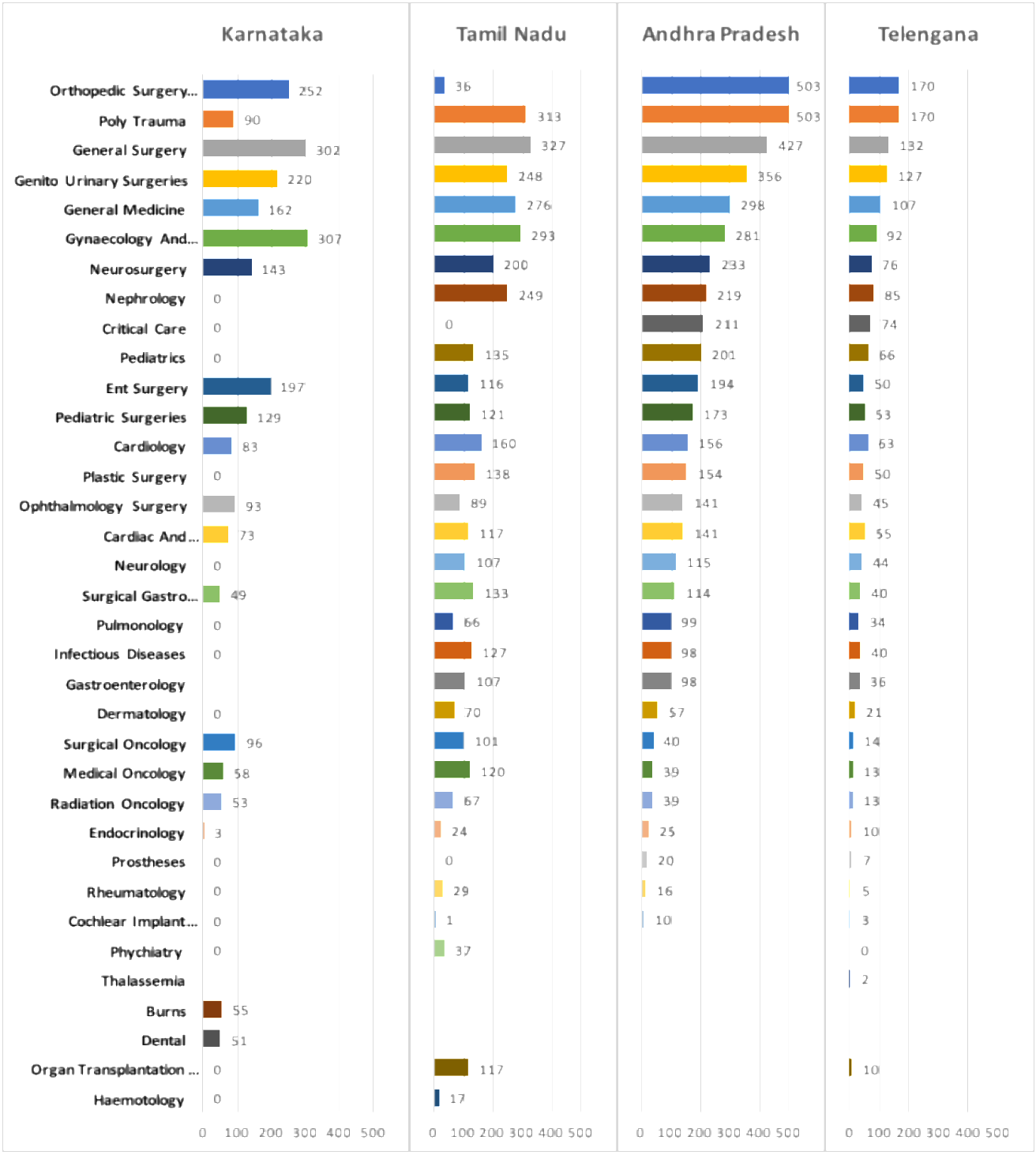
The per capita availability of private providers across the States and districts masks the differential access to various kinds of insured health services. Most private providers extend only selected medical treatment and surgical procedures. Tertiary-level health care require specialised infrastructure and human resources and therefore, these are less widely offered than lower-level of health care services. Figure 5 shows the number of private hospitals registered for different kinds of health services in state-sponsored health insurance schemes in the four States.[17]

In all the four States the number of private hospitals registered for specialised health services like cardiothoracic surgery and surgical oncology are significantly lower than the number of hospitals which are registered for relatively low level of care like orthopaedics, Obstetrics and general surgery (Figure 5). More importantly, most of the hospitals registered for tertiary-level health services are concentrated in a few districts. In Telangana, bulk of the providers registered for cardiothoracic surgery and surgical oncology are confined to the two districts of Hyderabad and Ranga Reddy. These districts accounted for 70-80 per cent of all providers registered for these services. Similarly, in Andhra Pradesh, although providers for cardio thoracic surgery and surgical oncology was spread across 24 districts (within and outside the state boundaries) 5 districts accounted for 50-60 per cent of the registered providers.[18] In contrast, providers were more widely spread out for general medicine, orthopaedics and gynaecology. In Tamil Nadu too, although the district-wise distribution of private hospitals for specialised care is relatively less concentrated, the increase in concentration of the spread is visible as one moves from lower-level to more specialised care.

[17] Some of the insured services in Tamil Nadu and Karnataka do not strictly correspond to the insured services in Andhra Pradesh and Telangana. We used the service categories of Andhra Pradesh and Telangana as the reference class and mapped insured services of Tamil Nadu and Karnataka into the reference classes. Some of the reclassified categories are shown in Appendix Table A2.

[18] These included two districts of Telangana (Hyderabad and Ranga Reddy), in addition to three of the relatively well-off districts of Andhra Pradesh namely Vishakhapatnam, Krishna and East Godavari.

Figure 5: Number of Private Hospitals Registered for Different Health Services in State-sponsored Health Insurance Schemes in Karnataka, Tamil Nadu, Telangana and Andhra Pradesh



Source: For Karnataka, data was provided by Suvarna Arogya Suraksha Trust (SAST), for Telangana, the Aarogyasri Health Care Trust, for Tamil Nadu, the Tamil Nadu Health Systems Project and for Andhra Pradesh from the scheme website.

Note: Private hospitals empanelled both within and outside the State have been considered in the above figure. The categories for Andhra Pradesh was taken as the benchmark. In both Tamil Nadu and Karnataka, some of the services were reclassified for consistency. For details see Appendix Table. Telangana had the same coding as Andhra Pradesh and did not require any reclassification.

Conclusions: The implementation of AB-PMJAY in India is largely dependent on the supply of insured health services through private hospitals. However, little evidence exists on the availability of private hospitals across the country due to lack of any comprehensive database. The issuance of a recent circular by IRDA to mandate registration of all private hospitals associated with insurance companies in a database, have opened up the possibility of deriving some idea of the spread of private hospitals that may be willing to participate in GSHI schemes. In addition, the availability of the 6th Economic Census conducted by the Government of India, and information on private hospitals empanelled in health insurance schemes sponsored by State governments provide some idea on the potential for access to health services through private hospitals in India.

Our analysis suggests that the empanelment of private hospitals by insurance companies in India is relatively low in States with low per capita incomes, where a substantial proportion of eligible beneficiaries under AB-PMJAY is concentrated. Although the empanelment of private hospitals under AB-PMJAY may not be confined to this set alone, the strong correspondence between private hospitals empanelled by insurance companies and private hospitals empanelled in government sponsored health insurance schemes in the States of Andhra Pradesh, Telangana, Tami Nadu and Karnataka indicates that the potential for empanelment of private hospitals in AB-PMJAY may be low in relatively poor States of the country. Notably, the number of private hospitals empanelled in government sponsored health insurance schemes is significantly smaller than the set of private hospitals empanelled by insurance companies in each the four States. This could be either due to differences in entry conditions or low willingness of private providers to participate in government sponsored health insurance schemes. Moreover, in States where the empanelment of private hospitals by insurance companies is low, the distribution of private hospitals is also concentrated in a few pockets. Further, the concentration of private hospitals increases as one moves more and more towards specialised health services even in the relatively better-off States. These have implications for potential access to insured health services under AB-PMJAY in poor States of the country, where a substantial portion of the targeted population under AB-PMJAY is concentrated

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Appendix

Table A 1: State-wise number and size distribution Registered Hospitals (with information on number of beds) in the Insurance Network (as on May 2018)

States	Number of active hospitals as on May 2018	Number of active hospitals with bed information	Distribution of hospitals with bed strength			
			Upto 10 beds	11 to 50 beds	50 to 100 beds	More than 100 beds
Andhra Pradesh	762	512	3	65	24	8
Assam	69	49	8	47	27	18
Bihar	253	192	11	69	15	5
Chhattisgarh	121	81	11	57	19	14
Delhi	510	309	22	61	9	8
Goa	47	36	8	72	8	11
Gujarat	1541	1146	21	69	5	4
Haryana	683	423	10	75	9	6
Himachal Pradesh	29	21	14	71	14	0
Jammu and Kashmir	38	29	21	69	7	3
Jharkhand	94	69	13	51	20	16
Karnataka	1091	709	8	63	17	12
Kerala	472	310	9	36	19	35
Madhya Pradesh	401	284	10	63	16	11
Maharashtra	3376	2326	22	67	7	5
Orissa	197	133	11	77	8	5
Punjab	706	364	18	68	7	7
Rajasthan	559	358	4	76	11	10
Tamil Nadu	1790	890	8	69	14	10
Telangana	777	484	4	59	27	9
Uttar Pradesh	1135	764	7	58	24	11
Uttarakhand	107	69	17	57	16	10
West Bengal	588	417	25	53	14	8
UTs and small States*	49	37				
India	**15421**	**10012**	**14**	**65**	**13**	**9**

Source: Insurance Information Bureau (IIB) of India

*Small states include Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim. In each of these States the total number of hospitals empanelled by insurance companies is less than 10.

Table A 2: Classification of insured services in Tamil Nadu and Karnataka into different categories (with reference to Andhra Pradesh and Telangana)

Categories in Tami Nadu	Classified Category (with reference to Andhra Pradesh and Telangana)
Chest surgery	Cardiac and Cardiothoracic Surgery
Thoracic surgery	
Interventional cardiology	Cardiology
Thoracic medicine	
Dialysis	Nephrology
ENT	ENT Surgery
Endocrine surgery	General Surgery
Hepatology	Gastroenterology
Interventional radiology	Radiation Oncology
Liver transplantation	Organ transplantation surgery
Replacement	
Neonatology	Paediatrics
NICU (Neonatal Intensive Care Unit)	
Paediatric Intensive care	Paediatric Surgeries
PICU (Paediatric Intensive Care unit)	
Urology	Genitourinary surgeries
Vascular surgeries	Neurosurgery
Orthopaedic trauma	Poly trauma
Opthalmology	Opthalmology surgery
Categories in Karnataka	**Classified Category**
ENT	ENT Surgery
Orthopaedics	Orthopaedic Surgery
Endoscope	Genitourinary
Hysteroscopy	Gynaecology and Obstetrics
Opthalmology	Opthalmology Surgery

Note: The categories of Andhra Pradesh and Telangana have been used as reference categories for classifying insured services in Tamil Nadu and Karnataka. The above table shows the mapping of some of the registered services in Tamil Nadu and Karnataka into the categories of Andhra Pradesh and Telangana. The remaining services had a one to one correspondence.

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