Rural Health Infrastructures in the North-East India

Saikia, Dilip and Das, Kalyani Kangkana

Department of Commerce, Darrang College, Tezpur (Assam),
Department of Economics, Darrang College, Tezpur (Assam)

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Dilip Saikia [*] **and** ***Kalyani Kangkana Das*** [**]

ABSTRACT

Health is considered as an important dimension of human development. Good health is not only a prerequisite for well-being of mankind it also augments labour productivity and stimulates economic growth. While a well developed health infrastructure is main determinants of good health, the health care infrastructure in India is quite unsatisfactory. The National Rural Health Mission (NRHM) launched by the Government of India in 2005 has emphasized on strengthening rural health infrastructure including physical infrastructure, manpower and other facilities. In this light the present study reviews the status of rural health infrastructure in the North-East India. This has been done by examining the progress in health infrastructure and health care facilities, the status manpower and the quality of health care services in the rural areas across the north-eastern States. The findings suggest that after the implementation of NRHM in 2005 though there has been significant improvement in the rural health infrastructure, especially in case of health centres in the region, the condition of the region has been atrocious in terms of other components of health care infrastructure, especially in terms of quality of health care services and availability of Specialists and well trained manpower.

Key words*: Health, rural health infrastructure, North-East India.*

1. Introduction

Health is Wealth. Good health is a prerequisite for well-being and its contribution to stimulating economic development is well recognized. Health is, therefore, considered as an important component of human development. Notwithstanding India has achieved accelerated economic growth over the last two decades, it has rated poorly in human development indicators and health indicators (Baru et al., 2010). India compares poorly with developing countries like China, Sri Lanka and Bangladesh in many health indicators such as life expectancy at birth, infant and under-five mortality levels, etc. (GOI, 2005). The poor health conditions are recognized as one of the major reasons for India's poor rank in Human Development Index.[1]

[*] Dilip Saikia (dilip.gu@gmail.com) is with the Department of Commerce, Darrang College, Tezpur (Assam).

[**] Kalyani Kangkana Das (kalyanidas23@gmail.com) is with the Department of Economics, Darrang College, Tezpur (Assam).

A well developed health infrastructure is critical for attaining good health of the people of a nation. Recognizing the role of health in development and the importance of health infrastructure in improving health, the Government of India launched the National Rural Health Mission (NRHM) in 2005 with emphasis on strengthening rural health infrastructure in the country. The NRHM, which is operationalized throughout the country with special focus on 18 states,[2] is an ambitious step taken up in order to provide accessible, affordable and accountable quality health services to rural areas. Owing to such initiatives, though India has made significant progress in health infrastructure, but the improvement has been quite uneven across regions with large-scale inter-state variations (Baru et al., 2010) and accessibility to health care services is extremely limited to many rural areas of the country. This motivates us to investigate the status of rural health infrastructure in the North Eastern Region (NER) of India, one of the poorest regions of the country.[3]

The study, in particular, seeks to review the progress in rural health centres, health care facilities, the status of human resources and the quality of health care services in rural areas of the north-eastern States. The data used in the paper has been collected from the Bulletin on Rural Health Statistics in India, 2007 & 2011 published by the Ministry of Health and Family Welfare, Government of India.

The rest of the paper is organized in the following sections. The next section provides a brief review of the health profile in the north-eastern States of India. The following section examines the status of rural health infrastructure across the north-eastern States by looking at the progress in health centres, health care facilities, status of manpower in health centres, and quality of health care services. The last section of the paper summarizes the findings.

2. Health Status in North-East India

Prior to examine the status of rural health infrastructure it is worthwhile to have a glance at the current health status in the region. This section reviews the current health status in the north-eastern States by looking at three indicators viz. crude birth rate (CBR), crude death rate (CDR) and infant mortality rate (IMR) at two time points- 2006 and 2010 (Table 1). From Table 1 it is discernible that the condition of all the north-eastern States except Assam and Meghalaya is better than the national average in terms of all the three indictors in both the rural and urban for both the years. In particular, Manipur, Nagaland and Sikkim are well ahead of the national average and the other north-eastern States in all the three indictors. For Assam and Meghalaya the condition is better than the national average in case of CBR and CDR in the urban areas, but their condition is below the national average and other north-

eastern States in the rural areas, whereas in case of IMR the condition of both the states is below the national average as well as other north-eastern States in both the rural and urban areas. Moreover, the health condition in the rural areas is pitiable compared to the urban areas in all the north-eastern States. In view of this rural health care should be an area of utmost precedence of any government social sector policy, especially health policy.

Looking at the improvement in the health status between 2006 and 2010 it is observed that CBR has declined across all the states except Manipur and CDR has declined across all the states except Arunachal Pradesh. In case of IMR the condition has worsened in 2010 in Manipur, Meghalaya, Mizoram and Nagaland, especially in the rural areas, while in the urban areas IMR has declined, and in the remaining states and for the country as a whole IMR has declined in 2010 compared to 2006.

Table 1: Vital Statistics in NER

States	Crude Birth Rate						Crude Death Rate						Infant Mortality Rates					
	2006			2010			2006			2010			2006			2010		
	T	R	U	T	R	U	T	R	U	T	R	U	T	R	U	T	R	U
Arunachal Pradesh	22.5	23.8	17.4	20.5	22.1	14.6	5.0	5.5	2.8	5.9	6.9	2.3	40	44	19	31	34	12
Assam	24.6	26.1	15.4	23.2	24.4	15.8	8.7	9.2	5.8	8.2	8.6	5.8	67	70	42	58	60	36
Manipur	13.4	13.5	13.1	14.9	14.8	15.3	4.5	4.4	4.6	4.2	4.3	4.0	11	11	11	14	15	9
Meghalaya	24.7	26.4	17.1	24.5	26.6	14.8	8.0	8.5	5.8	7.9	8.4	5.6	53	54	43	55	58	37
Mizoram	17.8	21.6	14.0	17.1	21.1	13.0	5.5	6.2	4.8	4.5	5.4	3.7	25	32	13	37	47	21
Nagaland	17.3	16.8	19.2	16.8	17.0	16.0	4.8	4.9	4.1	3.6	3.7	3.3	20	18	27	23	24	20
Sikkim	19.2	19.5	17.7	17.8	18.1	16.1	5.6	5.7	4.7	5.6	5.9	3.8	33	35	16	30	31	19
Tripura	16.6	17.3	13.4	14.9	15.6	11.5	6.3	6.2	6.8	5.0	4.8	5.7	36	37	30	27	29	19
All India	23.5	25.2	18.8	22.1	23.7	18.0	7.5	8.1	6.0	7.2	7.7	5.8	57	62	39	47	51	31

Note: T= Total, R= Rural and U= Urban.
Source: Bulletin on Rural Health Statistics in India, 2007 & 2011.

3. Status of Rural Health Infrastructure in North-East India

3.1 Progress in Health Centres

The rural health care infrastructure in India has been developed as a three tier system with Sub Centre (SC), Primary Health Centre (PHC) and Community Health Centre (CHC) being the three pillars. Growth of these health centres, especially SCs is a prerequisite for the overall progress of the entire system. In this section we look at the progress in the SCs, PHCs and CHCs between 2005 (the year when NRHM was implemented) and 2011. Table 2 reports the number of SCs, PHCs and CHCs existing in 2011 as compared to those existing in 2005. It reveals that while there has been increase in all the categories of health centres for the

country as a whole between 2005 and 2011, for the North East Region (NER) as a whole the number of SCs has declined from 7755 to 7259 between 2005 and 2011. The decline is mainly due to the significant decline in the SCs in Assam and Arunachal Pradesh, whereas number of SCs has increased in Tripura and for the rest of the north-eastern States it remained more or less same or marginally increased. The decline in SCs in the region is mainly because many of the SCs have been upgraded to PHCs, which is evident from the fact that the number of PHCs in the region has increased from 1109 to 1510 between 2005 and 2011. The story is same in all the states but Mizoram and Sikkim, where the number of PHCs has remained same. The number of CHCs has increased from 215 to 244 for the entire NER during 2005-2011. All the states but Sikkim has witnessed either progress or remained stagnant in CHCs during this period. Thus, it can be said that except significant progress made by Assam, Nagaland and Arunachal Pradesh in PCHs and by Tripura in SCs, the remaining states of the region have not taken much initiative in regard of establishment of health centres even after the implementation of NRHM in 2005.

Table 2: Number of Sub Centres, PHCs and CHCs in NER

	March 2005			**March 2011**		
	Sub Centres	**PHCs**	**CHCs**	**Sub Centres**	**PHCs**	**CHCs**
Arunachal Pradesh	379	85	31	286	97	48
Assam	5109	610	100	4604	938	108
Manipur	420	72	16	420	80	16
Meghalaya	401	101	24	405	109	29
Mizoram	366	57	9	370	57	9
Nagaland	394	87	21	396	126	21
Sikkim	147	24	4	146	24	2
Tripura	539	73	10	632	79	11
NER	7755	1109	215	7259	1510	244
All India	146026	23236	3346	148124	23887	4809

Source: Bulletin on Rural Health Statistics in India, 2011

Table 3 depicts the current status of health centres in the rural areas of north-eastern States *vis-à-vis* the country as a whole in terms of the average rural population (2011-provisional) covered by a SC, PHC and CHC as on March 2011. As the table reveals except for Assam and Meghalaya the condition of other north-eastern States are better than the national average in case of SCs, whereas in case of PHCs all the States are in better position than the national average and in case of CHCs all the States but Assam, Sikkim and Tripura are in better position than the national average. While for the country as a whole the existing

population norms[4] have not been fulfilled in all the three categories, in the NER all the States but Meghalaya are yet to satisfy the population norms in case of SCs, whereas only Arunachal Pradesh, Mizoram, Nagaland and Sikkim have satisfied the norms in case of PHCs, and Arunachal Pradesh, Mizoram and Nagaland have satisfied the norms in case of CHCs. In case of CHCs Assam, Sikkim and Tripura are far-flung from the existing norms. Therefore, much more intensive efforts are required in these states in coming years in order to satisfy the norms and improve the overall health infrastructure system.

Table 3: Average Rural Population (2011) covered by Health Centres (as on March, 2011)

States	Sub Centres	PHCs	CHCs
Arunachal Pradesh	3738	11022	22274
Assam	5817	28551	247968
Manipur	4523	23745	118727
Meghalaya	5849	21734	81689
Mizoram	1430	9281	58782
Nagaland	3553	11166	66993
Sikkim	3123	18998	227981
Tripura	4288	34304	246368
All India	5624	34876	173235

Source: Bulletin on Rural Health Statistics in India, 2011

Alongside the progress in health centres, facilities available in the health centres are another important dimension of the health care system. However, the condition of the north-eastern States in this respect has been awful, except Mizoram whose condition is better than the national average in terms of many indicators considered for analysis (Table 4). As it is obvious from Table 4 the percentage of SCs with quarters for Auxiliary Nurse Midwife (ANM) is as low as 7.8 percent in Tripura, 17.2 percent in Nagaland, 40 percent in Arunachal Pradesh, while no SC has ANM Quarter in Manipur. The percentage of SCs without electricity facility is highest in Assam (67.6 percent) followed by Meghalaya, Manipur, Nagaland and Tripura. The condition of all the states is pitiable than the national average in case of percentage of SCs without all weather motorable road connectivity. All the states except Manipur have a better condition compared to the national average in terms of PHCs with labour room, whereas all the states but Mizoram and Tripura have an abysmal condition than the national average in terms of PHCs with Operation Theatre. Only Meghalaya and Sikkim have a better condition than the national average in terms of availability of water supply in PHCs.

Table 4: Facilities in the Health Centers in NER (as on March 2011)

States	Percentage of Sub Centres				Percentage of PHCs				
	with ANM Quarter	with ANM living in SC Quarter	without Electric Supply	without all time road connectivity	with Labour Room	with Operation Theatre	without Water Supply	with Phone	with Computer
Arunachal Pradesh	39.9	100.0	22.0	33.2	69.1	11.3	29.9	13.4	0.0
Assam	55.2	19.9	67.6	15.0	73.1	3.5	41.8	47.7	59.9
Manipur	0.0	0.0	63.8	27.4	47.5	0.0	68.8	7.5	91.3
Meghalaya	99.0	42.6	65.4	18.0	100.0	0.0	11.9	16.5	78.0
Mizoram	94.6	100.0	0.0	18.6	100.0	100.0	100.0	100.0	78.9
Nagaland	17.2	97.1	49.2	33.3	69.8	31.0	15.9	93.7	19.0
Sikkim	95.2	20.9	2.7	17.1	100.0	91.7	0.0	95.8	91.7
Tripura	7.8	32.7	48.1	31.3	75.9	5.1	15.2	36.7	72.2
All India	55.0	60.8	24.5	6.9	65.7	38.4	12.5	52.2	46.4

Source: Bulletin on Rural Health Statistics in India, 2011

3.2 Status of Manpower in Health Centers

The availability of manpower is one of the important prerequisite for the efficient functioning of the health services. The condition of the region in case of manpower in health centres is mixed, however. While some states have surplus in certain cases, the others have been suffering shortages in other cases. From Table 5 and Table 6 it is evident that Assam, Manipur, Sikkim and Tripura have surplus in case of doctors in PHCs, while others have been experiencing shortages. Similarly, Assam, Manipur, Meghalaya and Tripura have surplus in Pharmacists in PHCs and CHCs, whereas all the States but Arunachal Pradesh and Sikkim have surplus in Nursing Staff in PHCs and CHCs. However, all the States have been experiencing acute shortages of Specialists and Radiographers in CHCs. Further, more than 75 percent PHCs in Meghalaya and Mizoram and 69 percent PHCs in Nagaland have been functioning with only doctor, while for the other states the percentage of PHCs with only one doctor is less than the national average (62.18 percent). Only Manipur, Tripura and Assam are in better position in case of percentage of PHCs functioning with more than three doctors compared to the country as a whole (6.89 percent). Though the percentage of PHCs having lady doctor is higher than the national average in all the States except Arunachal Pradesh and Nagaland, but except for Sikkim and Manipur the figures are not satisfactory for the other States.

Table 5: Status of Manpower in PHCs (as on March, 2011)

States	Percentage of PHCs Functioning with				Doctors* in PHCs		
	3+ doctors	2 doctors	1 doctor	Lady doctor	R	P	S
Arunachal Pradesh	6.18	34.02	49.48	20.62	97	92	5 *(5.15)*
Assam	21.75	46.16	32.09	36.99	938	1557	+
Manipur	92.5	7.50	0.00	60.00	80	192	+
Meghalaya	1.83	13.76	84.40	29.36	109	104	5 *(4.59)*
Mizoram	0	5.26	77.19	28.07	57	37	20 *(35.09)*
Nagaland	0	16.67	69.05	12.70	126	101	25 *(19.84)*
Sikkim	0	58.33	41.67	75.00	24	39	+
Tripura	30.38	39.24	30.38	36.71	79	119	+
All India	6.89	25.89	62.18	20.86	23887	26329	2866 *(12.0)*

Notes: Figures within parentheses represent percentage.
* Allopathic Doctors. + indicates surplus. R= Required, P= In position, S= Shortfall (R-P).
Source: Bulletin on Rural Health Statistics in India, 2011

Table 6: Status of Manpower in PHCs and CHCs (as on March, 2011)

State/UT	Pharmacists in PHCs & CHCs			Nursing Staff in PHCs & CHCs			Specialists* in CHCs			Radiographers in CHCs		
	R	P	S	R	P	S	R	P	S	R	P	S
Arunachal Pradesh	145	56	89	433	293	140	192	1	191	48	9	39
Assam	1046	1262	+	1694	2844	+	432	216	216	108	61	47
Manipur	96	135	+	192	574	+	64	4	60	16	13	3
Meghalaya	138	142	+	312	414	+	116	9	107	29	22	7
Mizoram	66	33	33	120	262	+	36	2	34	9	6	3
Nagaland	147	112	35	273	302	+	84	34	50	21	1	20
Sikkim	26	10	16	38	32	6	8	0	8	2	1	1
Tripura	90	116	+	156	393	+	44	0	44	11	7	4
All India	28696	24671	6444	57550	65344	13262	19236	6935	12301	4809	2221	2593

Notes: * Specialists include Surgeons, Obstetricians & Gynecologists, Physicians and Pediatricians.
+ indicates surplus. R= Required, P= In position, S= Shortfall (R-P).
Source: Bulletin on Rural Health Statistics in India, 2011

3.3 Quality of Rural Health Services

Despite a steady progress in rural health care infrastructure in the North Eastern region since the implementation of NRHM in 2005, the quality of rural health care services has been remained an issue of concern over the year. While for the country as a whole there is a shortage of 20 percent of SCs, 24 percent of PHCs and 38 percent of CHCs, in the North East all the States except Mizoram have suffered acute shortage of one or the other centres. The major concern is Assam and Tripura, which have suffered more than 50 percent shortage of

CHCs (Table 7). Further, as many as 47 percent SCs in Tripura, 41 percent in Assam and 25 percent in Manipur don't have government building and located either in rented buildings or rent free Panchayats/Voluntary Society buildings (Table 8). As we have already seen in the preceding section and also summarized in Table 7 there is acute shortage of manpower in health centres across the north-eastern States. All the States have suffered shortage of Health Workers (Male) in SCs and Health Assistants (both Male and Female) in PHCs. Similarly, severe shortage of Specialists and Radiographers in CHCs is apparent across all the north-eastern States. The shortage of CHCs and Specialists and supporting staffs in CHCs along with the inadequacy of other facilities is a major challenge is to resolve, because the shortage at the CHCs level adversely affects the linkages and thereby the entire health care system.

Table 7: Shortfall in Health Infrastructure and Manpower in NER (as on March 2011)

	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura	All India
Sub Centres	27 (8.63)	1237 (21.18)	72 (14.63)	353 (46.57)	+	61 (13.35)	+	41 (6.09)	35762 (20.06)
PHCs	+	15 (1.57)	+	5 (4.39)	+	+	+	27 (25.47)	7048 (24.13)
CHCs	+	130 (54.62)	3 (15.79)	+	+	+	2 (50.00)	15 (57.69)	2766 (37.92)
Health Workers (F)/ANM at SCs and PHCs	+	+	+	+	+	+	+	271 (38.12)	6555 (3.81)
Health Workers (M) at SCs	138 (48.25)	2218 (48.18)	100 (23.81)	272 (67.16)	59 (15.95)	0 (0.00)	9 (6.16)	347 (54.91)	95909 (64.75)
Health Assistants (F)/LHV at PHCs	NA	486 (51.81)	8 (10.00)	30 (27.52)	45 (78.95)	110 (87.30)	6 (25.00)	72 (91.14)	9036 (37.83)
Health Assistants (M) at PHCs	19 (19.59)	NA	7 (8.75)	40 (36.70)	48 (84.21)	111 (88.10)	11 (45.83)	61 (77.22)	9935 (41.59)
Doctors at PHCs	5 (5.15)	+	+	5 (4.59)	20 (35.09)	25 (19.84)	+	+	2866 (12.00)
Total Specialists at CHCs	191 (99.48)	216 (50.00)	60 (93.75)	107 (92.24)	34 (94.44)	50 (59.52)	8 (100.0)	44 (100.0)	12301 (63.95)
Radiographers at CHCs	39 (81.25)	47 (43.52)	3 (18.75)	7 (24.14)	3 (33.33)	20 (95.24)	1 (50.00)	4 (36.36)	2593 (53.92)
Pharmacists at PHCs and CHCs	89 (61.38)	+	+	+	33 (50.00)	35 (23.81)	16 (61.54)	+	6444 (22.46)
Lab Technician at PHCs and CHCs	57 (39.31)	+	+	4 (2.90)	+	43 (29.25)	+	27 (30.00)	13611 (47.43)
Nursing Staff at PHCs and CHCs	140 (32.33)	+	+	+	+	+	6 (15.79)	+	13262 (23.04)

Note: + indicates surplus. Figures within parentheses represent percentage.
Source: Bulletin on Rural Health Statistics in India, 2011

Table 8: Percentage of Sub Centres, PHCs & CHCs Functioning in Govt. Buildings (as on March 2011)

States	Sub Centres	PHCs	CHCs
Arunachal Pradesh	100.0	100.0	100.0
Assam	59.14	94.67	100.0
Manipur	75.24	100.0	100.0
Meghalaya	98.02	100.0	100.0
Mizoram	100.00	100.0	100.0
Nagaland	84.09	91.27	100.0
Sikkim	94.52	100.0	100.0
Tripura	53.01	98.73	100.0
All India	62.70	79.94	95.28

Source: Bulletin on Rural Health Statistics in India, 2011

4. Conclusion

The paper examines the status of rural health infrastructure in the North-East India. We essentially analyze the progress in health centres, facilities available in the health centres, manpower available in the health centres and quality of health care services in the rural areas across the north-eastern States *vis-à-vis* the country as a whole. The findings suggest that there has been significant improvement in the rural health infrastructure, especially in case of health centres in the region after the implementation of NRHM in 2005. Though all the north-eastern States are in better position compared to the all India average in terms of progress in physical health care infrastructure, the condition of the region has been atrocious in terms of other components of health care infrastructure, especially in terms of the facilities available in health centres, quality of health care services, and availability of human resources, be it Specialists, doctors, nurses or other health care personnel.

Notes:

[1] India's rank in the latest UNDP Human Development Index for the year 2011 is 134th out of 187 countries for which the Index is calculated.

[2] These States includes the eight north-eastern States, eight Empowered Action Group States (Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Uttarakhand, Orissa and Rajasthan), Himachal Pradesh and Jammu & Kashmir.

[3] The NER covers 8 percent of the geographical area of the country, accounting for 3.9 percent of the population and 2.7 percent of the all-India net domestic product (NDP)

[4] The population coverage norms are 3000/5000 per sub-centre, 20000/30000 per PHC and 80000/120000 per CHC respectively, depending on whether the centre is in a hilly, tribal, difficult area or in the plains.

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