

## **CHAPTER – 3**

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### **PUBLIC HEALTH CARE INFRASTRUCTURE IN ASSAM AND BAKSA DISTRICT**

Healthcare infrastructure facilities play a major role in providing necessary healthcare facilities to the common masses those who need healthcare services. The health delivery system represents the health institutions, manpower, including doctors, nurses, para-medical staff, and population under coverage. As the health delivery system is an intrinsic factor for the socio-economic upliftment of the community, the Constitution incorporates provisions guaranteeing everyone's right to the highest attainable standard of physical and mental health. Article 21, Constitution of India guarantees protection of life and personal liberty to every citizen. The health of a population greatly depends on the healthcare infrastructure— physical and manpower alongside accessibility, availability and affordability. Thus, Chapter-3 details on public health care infrastructure in Assam and Baksa district. However, before going to have in details on public health care infrastructure in Assam and Baksa district, some concepts and definitions related to the rural health delivery system have been incorporated based on Indian Public Health Standards (IPHS) 2012 guidelines and the report on Facility Survey of Public Health Institutions in Assam (2007)<sup>1</sup>.

#### **3.1 Concepts and Definitions**

##### **Primary Health Care**

Primary Health Care is an essential health care which is based on practical, scientifically sound, and socially acceptable methods and technology and universally accessible to all in the community through their full participation at an affordable cost with geared toward self-reliance and self-determination (WHO & UNICEF, 1978).

Government of India launched the Rural Health Scheme based on Shrivastav Committee (1975) recommendation -“placing people’s health in people’s hands”.

The following concepts and definitions are related with the health care delivery system under the Rural Health Scheme in India.

### **Community Health Centre (CHC)**

A Community Health Centre (CHC) is 30 bedded hospital that provides specialised healthcare services to people in rural areas and acts as a referral centre for usually 4 PHCs for patients seeking advanced healthcare treatment in medicine, surgery, paediatrics, gynaecology, etc. It covers 80,000 populations in Hilly/Tribal/Difficult Area and to 1,20,000 populations in plain area.

### **Block Public Health Centre (BPHC)**

A Block level PHC is located at Health Block Head Quarter and covering about 1,00,000 population with varying indoor beds. Further, Block Primary Health Centre being the administrative set up is functioning to monitor and supervise the Primary Health Centres (PHCs) towards health care service delivery in rural area.

The nomenclature of a PHC differs from State to State that includes Additional PHC/New PHC/Mini-PHC covering a population of 20,000-30,000.

### **Primary Health Centre (PHC)**

As per Indian Public Health Standard (IPHS,2012), Primary Health Centre (PHC) is a 4-6 bedded hospital and referral unit for 6 Sub Centres with at least one Medical Officer. The PHC covers 20,000 population in hilly/tribal/difficult areas, and 30,000 in plain areas acts as a referral unit for 6 sub-centres and refers cases to CHC (30 bedded hospital) and higher-order public hospitals located at sub-district and district level. It occupies a place between a Sub-Centre at the most peripheral level and Community Health Centre at the block level.

### **Mini Primary Health Centre (MPHC)**

Mini Primary Health Centres (MPHC) in Assam is also at the same standard as PHC and usually has a minimum of 5 to a maximum of 34 sub-centres

under its coverage. Each MPHC covers an average population of 20,000. However, Mini PHC does not provide monitoring and supervision to Sub-Centres.

### **Subsidiary Health Centre (SHC)**

Subsidiary Health Centre in the State of Assam is at the same standard as Mini PHCs. Thus, each SHC covers an average population of 20,000 and usually has a minimum of 5 to a maximum of 34 sub-centres under its coverage. Like the MPHC, the SHC does not monitor and supervise sub-centres falling in their coverage area.

### **State Dispensaries (SD)**

State Dispensaries in Assam is similar to Mini PHC and SHC. Even SD has 5-15 sub-centres within their coverage area, but they not necessarily to monitor and supervise sub-centres.

### **Sub Centre (SC)**

The Sub centre (SC) is the first point of contact between the community and the health care system. Sub Centre is a health care institution that is staffing with one Health Worker (Female) and one Health Worker (Male) for serving for 3,000 (Hilly/Tribal/Difficult Area) and 5,000( Plain area) population.

### **Mobile Medical Unit**

Mobile Medical Units are formed to provide health care services to the un-served and in the areas not covered under the health care facilities.

### **First Referral Unit (FRU)**

An existing health care centre facility, say-District Hospital, Sub-divisional Hospital, Community Health Centre, is declared a fully operational

First Referral Unit (FRU). It is equipped to provide round-the-clock services for Emergency Obstetric and New Born Care. There are three critical determinants of a facility being declared as an FRU: i) Emergency Obstetric Care including surgical interventions like Caesarean Sections; ii) New-born Care, and iii) Blood Storage Facility on a 24-hour basis.

### **Indian Public Health Standards (IPHS)**

In order to provide optimal level of quality health care, a set of standards called Indian Public Health Standards (IPHS) were recommended for as early as 2007 and revised 2012. Indian Public Health Standards (IPHS) guidelines have been published separately for each Sub-centres, Primary Health Centres (PHCs), Community Health Centres (CHCs), Sub-District and District Hospitals. IPHS guidelines serve as the primary driver for continuous quality improvement and as a benchmark for evaluating the health of healthcare facilities. States and UT should adopt these IPHS guidelines to strengthen public health facilities and do their best to achieve high-quality health care across the country. IPHS have been used as the reference point for public health care infrastructure planning and up-gradation in the States and UTs.

### **Maternity and Child Welfare Centre (MCW)**

It provides pre-natal and post-natal services for both mother and child. The services include regular check-up of pregnant women, giving folic tablets, counselling, delivery, immunisation of children with check-up, etc.

### **TB Clinic (TBC)**

The diagnosis and treatment of Tuberculosis (TB) are functions of the general health services, and hence it is part and parcel of Primary Health Care.

Specialised units such as the District Tuberculosis Centre (DTC) act as referral centres. TB clinics are established by the Government of India under the National Tuberculosis Control Programme and implemented through a network of DTC. The DTC is the nodal point for TB control activities in the district, and it also functions as a specialised referral centre. Sub-district level Tuberculosis Unit (TU) functions are implementing, monitoring, and supervising TB control activities in its designated geographical areas.

### **Medicine Shop**

A shop that sells drugs and medicines of any system of medicine *viz.*, Allopathic, Homoeopathic, Ayurvedic or Unani is considered a medicine shop. However, some shops and Paan shops also keep ordinary medicines, like Crocin, Burnol etc. These shops are not taken as medicine shops.

### **Accredited Social Health Activists (ASHA)**

Every village/large habitation has an Accredited Social Health Activist (ASHA). ASHA is a female health worker chosen by the panchayat to interact between the community and the public health system.

### **Rural Health Practitioners (RHP)**

In order to provide proper health care services to the people of remote areas in Assam, Rural Health Practitioners (RHP) are appointed after completion of the Diploma in Medicine and Rural Health Care (D.M.R.H.C) course of 3 years duration. They are supposed to provide basic but good quality health care services to the people of remote and far-flung areas of the State.

## **3.2 Public Health Infrastructure in Assam**

Healthcare is enlisted under the State list and Concurrent list in India. Therefore, it has been the responsibility of both the central and the state governments to improve the overall health scenario. While, the Union Ministry of Health and Family Welfare (UMHFW) is the central authority to implement

various programmes and schemes in family welfare, prevention, and control of major diseases. However, the State Government has to take the major responsibility for creating infrastructure such as building, manpower etc. The State health machinery also has responsibility for implementing various major disease control programmes and the Family Welfare Programmes funded by the Central Government, including assistance from external agencies.

Assam is a state in the northeast of India with a geographical area of 78,438 sq km and about 2.4 per cent of its total geographical area. It is surrounded by Bhutan and Arunachal Pradesh to the north; Bangladesh, Mizoram and Manipur to the south; Nagaland to the east; and West Bengal and Meghalaya to the west. Assam located geographically extending from 89° 42' E to 96° E longitude and 24° 8' N to 28° 2' N. Assam provides shelter to 2.2 per cent population of the country. The government of Assam has been making a continuous effort for implementing various state and national level programmes in the state to improve the healthcare delivery system. The physical infrastructure of the healthcare institutions and the availability of health workers reflect the status of the healthcare delivery system of any state or country. According to the Census of India, 2011 the population of Assam stands at 3,12,05,576 with 15939443 (51.08%) males and 1,52,66,133 (48.92%) females.

**Table 3.1: Demographic and Socio-Economic Characteristics of Assam**

Characteristics	Population
Total population	3,12,05,576
Decadal Growth of Population	16.93%
Urban population	14.1%
Rural Population	85.9%
Scheduled Caste	7.2%
Scheduled Tribe	12.5%
Sex Ratio	954
Literacy Rate	72.19%
Male Literacy Rate	77.85%
Female Literacy Rate	66.27%
Density of Population	398

Source: Census of India, 2011 and Statistical Hand Book of Assam, 2019

Table 3.1 highlights the basic socio-demographic indicators of Assam. It has been found that the total population of Assam is 3.12 crore approximately and the decadal growth is 16.93%. It is found that 85.9% of the total population in Assam resides in rural areas and 14.1% in urban areas. Scheduled Caste (SC) and Scheduled Tribe (ST) in Assam are 7.2% and 12.5%, respectively. The literacy rate has been found 72.19%. The sex ratio of Assam increased to 958 females per 1000 males in 2011 from 935 in 2001. The density of the population of Assam increased to 398 persons in 2011 from 340 persons in 2001. The decadal growth of the State's population works out at 17.07 percent during 2001-2011.

**Table 3.2: Health Indicators of Assam**

Total Birth Rate (SRS 2018)	21.1
Rural Birth Rate	22.2
Urban Birth Rate	14.6
Total Death Rate (SRS 2018)	6.4
Rural Death Rate	6.6
Urban Death Rate	5.1
Total Infant Mortality Rate (SRS 2018)	41
Rural Infant Mortality Rate	44
Urban Infant Mortality Rate	20
Maternal Mortality Ratio (AHS 2012-13)	301
Total Fertility Rate ( AHS 2019)	2.4
Urban Fertility Rate ( AHS 2019)	1.6
Rural Fertility Rate ( AHS 2019)	2.3
Life expectancy at birth (AHDR,2014)	54 years

Source: SRS Bulletin, July 2016 & AHS 2012-13

Table 3.2 describes the various health indicators based on the Sample Registration System (SRS) Bulletin. SRS is a large-scale demographic survey for providing reliable annual estimates of Infant mortality rate, birth rate, death rate, and other fertility & mortality indicators at the national and sub-national levels. According to the SRS Bulletin July 2016, the total birth rate, rural birth rate, and urban birth rate were 22.4, 23.0, and 14.5, respectively. The rural birth rate of 23.6 in Assam is above the national level birth rate of 22.7. The total death rate is 7.2, with the rural death rate of 7.6 and the urban death rate of 5.3. The infant mortality rate is 52 (per 1000 live births) in rural is still much above the urban



area of 27. Maternal mortality ratio is another characteristic that shows women health that indicates maternal death against 1,00,000 live births. As per Annual Health Survey 2012-13, it has been found the maternal mortality ratio is 301. Fertility rate is stood at 2.4 with a fall of 0.2 from 2010-11 as per the estimates of the Annual Health Survey 2012-13. As per the latest Assam Human Development Report 2014, life expectancy at birth in the state is 54 years, lower than the national rate of 66.1 years.

### 3.2.1 Pattern of Growth of Health Institutions in Assam

The primary health care services are an arrangement for the basic facilities which are to serve rural people. As per the Indian Public Health Standard (IPHS, 2012), health care infrastructure in rural areas has been developed as a three-tier system - Community Health Centre (CHC), Primary Health Centre (PHC) and Sub Centre (SC).

According to the Rural Health Statistics (RHS) 2016, in India, 1,53,655 Sub-Centers (SC), 25,308 Primary Health Centers (PHCs) and 5,396 Community Health Centers (CHCs) are providing rural health services. However, there is a shortfall of 33,145 SCs (20%), 6,556 PHCs (22%) and 2,316 CHCs (32%) across the country as per the Rural Health Statistics (RHS) 2015. FRUs have increased significantly from 940 in 2005 to 2,712 in 2016 (upto 31.03.2016). There are 9,197 PHCs that are operational as 24x7 facilities as of 31.03.2016.

**Table3.3: Number of SC, PHC and CHC During Plan Periods in Assam**

Type Health Institution	Sixth Plan [1981-85]	Seventh Plan [1985-90]	Eight Plan [1992-97]	Ninth Plan [1997-2002]	Tenth Plan [2002-2007]	Eleventh Plan [2007-2012]	Twelfth Plan (As on 31st March 2015) [2012-2017]
SC	1,711	5,109	5,109	5,109	5,109	4,604	4,621
PHC	237	449	610	610	610	975	1,014
CHC	12	60	100	100	100	109	151

Source: Rural Health Statistics Bulletin 2018 & Directorate of Health Services, Assam

Table 3.3 highlights the expansion in the number of different types of health institutions concerning the rural healthcare system at the end of every five plan period. The number of Sub-Centre has increased from 1,711 to 5,109 in Seventh Plan Period. There is a vast increase in Sub-Centres numbers from the Sixth Plan period to the Seventh plan period and no variation until the end of the Tenth Plan period. A fall in the total number of Sub-Centres in the Eleventh Plan period has been noticed due to the upgrade of Sub-Centres to Primary Health Centres. As of 31<sup>st</sup> March 2015 of the Twelfth Plan period (2012-17), the number of Sub-Centre stood at 4,621. Similarly, the number of Primary Health Centre (PHC) also has increased from the Sixth plan notably, and at present, 1,014 PHCs are available in the state. The number of Community Health Centre (CHC) increased to 151 till the 31<sup>st</sup> March 2015 of Twelfth Plan from 12 nos. of CHC in the Sixth Plan.

Table 3.4 shows the growth of different types of public health institutions in Assam according to data available as per Rural Health Statistics (RHS) since 2005. It has been observed that from 2005 to 2007, there has been no change in the number of health institutions. In 2008, it was observed that the number of PHCs increased to 844. On the other hand, the number of SCs decreased to 4,592 compared to the preceding year, 2007. It indicates that existing SCs might be upgraded to PHCs. Similarly, it has been noticed an increase in the number of Medical Colleges, District Hospitals, CHCs, and PHCs from 2011 to 2014. However, the number of Sub Divisional hospitals remaining unchanged from 2005 to 2015. There has been observed that Sub- District Hospital increased to 14 nos. in 2016 and remain same till 2019. In case of district Hospitals, there were 22 nos. in 2005 and remained the same till 2010. The nos. of District Hospitals increased to 25 in 2011 and remaining the same till 2018. Similarly, it is found that the number of Medical colleges was 03 nos. in the period 2005-2010 which increased to 6 nos. in 2011 and remained the same until 2019. As of 31<sup>st</sup> March 2015; 4,621 Sub Centres, 1,014 Primary Health Centres (PHCs), and 151 Community Health Centres (CHCs) are functioning in the state. While the PHCs and CHCs increased in number in 2014-15, the current numbers of CHCs are

beyond the population norm. The number of existing Sub Centres decreased to 4,621 by March 2015 from 5,109 in 2005 because of upgrading some of the Sub Centre to Primary Health Centres (PHCs). For more than a decade, it was observed that the strength of CHCs increased upto 177 nos. in 2019 from 100 nos. in 2005. The strength of PHCs was stood at 946 nos. in 2019 while it was 610 nos. in 2005. However, it has been found that a decrease in SCs from 5,109 in 2005 to 4,643 nos. in 2019.

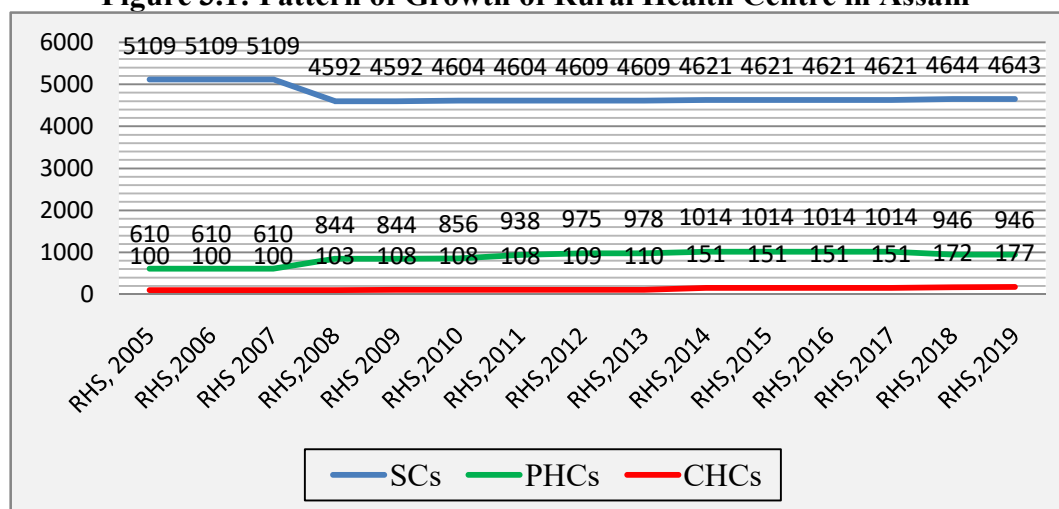
**Table 3.4: Growth of Health Institutions in Assam since 2005**

Sl. No.	Year of RHS	Medical College	District Hospital	Sub Divisional Hospital	CHC	PHC	Sub Centre	Total No. of Health Institutions
1	RHS, 2005 (As on Sept.04)	3	22	13	100	610	5109	5857
2	RHS,2006 (As on Sept., 2005)	3	22	13	100	610	5109	5857
3	RHS 2007 (As on March.,2007)	3	22	13	100	610	5109	5857
4	RHS,2008 (As on March.,2008)	3	22	13	103	844	4592	5577
5	RHS 2009 (As on March 2009)	3	22	13	108	844	4592	5582
6	RHS,2010 (As on March 2010)	3	22	13	108	856	4604	5606
7	RHS,2011 (As on March 2011)	6	25	13	108	938	4604	5694
8	RHS,2012 (As on March 2012)	6	25	13	109	975	4609	5736
9	RHS,2013 (As on 31st March 2013)	6	25	13	110	978	4609	5741
10	RHS,2014 (As on 31st March 2014)	6	25	13	151	1014	4621	5830
11	RHS,2015 (As on 31st March 2015)	6	25	13	151	1014	4621	5830
12	RHS,2016 (As on 31st March 2016)	6	25	14	151	1014	4621	5830
13	RHS,2017 (As on 31st March 2017)	6	25	14	151	1014	4621	5830
14	RHS,2018 (As on 31st March 2018)	6	25	14	172	946	4644	5762
15	RHS,2019 (As on 31st March 2019)	6	25	14	177	946	4643	5766

Source: Rural Health Statistics Bulletin 2005 to 2019

In addition to the established health centre, Mobile Medical Units (MMUs) are functioning in Assam to provide health care services to the un-served and in the areas not covered under the health care facilities. According to the RHS 2010, a total of 27 MMUs were providing healthcare services. The number of MMUs increased to 145 units in 2019 over the period of ten years. The pattern growth of Rural Health Centres Viz. SC, PHCs and CHCs has also presented in line diagram in Figure 3.1.

**Figure 3.1: Pattern of Growth of Rural Health Centre in Assam**



Source: Rural Health Statistics Bulletin 2005 to 2019

**Table 3.5: Number of Health Institutions in Assam in 2015 and 2019**

Type of Health Centre	As per 2011 Population in Assam (As on 31st March 2016) = 3665405				Tribal Population in India on 1st July 2019 in Rural Areas (As on 31st March 2019)=3993696			
	Required	In Position	Shortfall	% Shortfall	Required	In Position	Shortfall	% Shortfall
Sub-Centres	5850	4621	1229	21	1331	778	553	41.5
PHCs	954	1014	*	*	199	181	18	9.0
CHCs	238	151	87	37	49	27	22	44.9

Source: Rural Health Statistics 2016 & 2019 \*Surplus

Table 3.5 indicates the status of health care institutions in Assam. It is reflected that the number of Primary Health Centres (PHCs) in position has been

found more than required. At the same time, it has been observed that there is a shortfall of 21% in Sub-Centres (SCs). Similarly, Community Health Centres (CHCs) has been found a shortfall of 37%. Thus, it may be predicted that the shortfall in SCs and CHCs have impacts on the provision of rural healthcare services.

### 3.3 Infrastructure Facilities at Primary Health Centres in Rural Areas

To provide assured primary healthcare services, IPHS recommended for infrastructure facilities for PHCs. Thus, the facts and figure based on the database of Rural Health Statistics in connection with infrastructural facilities of the PHCs of rural areas of Assam have been presented below.

**Table 3.6: Infrastructure Facilities at Primary Health Centres in Rural Areas of Assam (As on 31st March 2019)**

<b>Part-I</b>										
Number of PHCs Functioning	PHCs functioning on 24x7 basis		With Labour Room		With OT		With at least 4 beds			
	Nos.	%	Nos.	%	Nos.	%	Nos.	%		
698	310	44.4	556	79.7	42	6.0	267	38.3		
<b>Part-II</b>										
Number of PHCs Functioning	Without Electric Supply		Without Regular Water Supply		Without All-Weather Motorable Approach Road		With Telephone		With Computer	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
698	47	6.7	8	1.1	74	10.6	296	42.4	625	89.5

<b>Part-III</b>			
<b>Number of PHCs Functioning</b>	<b>Referral Transport</b>	<b>Registered RKS</b>	<b>No. of PHCs Functioning as per IPHS norms</b>
<b>Nos.</b>	<b>Nos.</b>	<b>Nos.</b>	<b>Nos.</b>
698	652	698	5

Source: Rural Health Statistics, 2019

Table 3.6 highlights the infrastructural facilities of PHCs in rural areas of Assam. In Part-I, the facilities required in every Primary Health Centre to provide quality healthcare service have been depicted. It has been found that 698 PHCs are functioning in the rural areas of Assam, of which 310 PHCs are functioning on 24x7. Thus, it is found that primary health care services on 24x7 basis are available in 44.4% of PHCs in the rural areas. Similarly, 79.7% of PHCs have Labour Room which is required for the delivery cases. In the preamble of Guidelines for Standardisation of Labour Rooms at Delivery Points (2016), it is mentioned that Labour Rooms in every delivery point should be standardised for delivering high-quality services during childbirth<sup>2</sup>. Again, it has been found that 6% of PHCs are functioning with Operation Theatre, and that indicates non-availability of the required services to rural masses. Similarly, 38.3% of PHCs with at least 4 beds are functioning in the rural areas of Assam.

In Part-II of the Table 3.6, infrastructural facilities are to be provided for every Primary Health Centre for smooth delivery of available healthcare services. It is found that 6.7% of PHCs are functioning without electricity supply. Again, 1.1% of PHCs do not have regular water supply. Further, 10.6% of PHCs are functioning without all-weather motorable approach road. On the other hand, 42.4% of PHCs are provided with a telephone connection, and 89.5% of PHCs have equipped with computer. Thus, it can be summarised that all PHCs are not provided with required facilities which are necessary for quality health care delivery system.

In Part –III of the Table 3.4, the overall status of the PHCs have been highlighted; out of a total number of functioning PHCs, 652 PHCs have not Referral Transport. It has been found that Rogi Kalyan Samiti is formed and existing in all the functioning PHCs. The Rogi Kalyan Samiti, as the name suggests, is a health facility level committee that holds the hospital administration and management accountable for ensuring access to equitable, high-quality services with minimal financial hardship to service users<sup>3</sup>.

The status of the PHCs can be understood from the number of PHCs functioning as per IPHS Guidelines for Primary Health Centres (2012, Revised)<sup>4</sup>. As per the IPHS, standards describe a level of quality that health care organisations are expected to meet or aspire to achieve. It has been found that 05 nos. of PHCs constitutes less than 1% of the total 698 PHCs are working as per IPHS norms in rural areas of Assam.

### 3.3.1 Average Rural Population covered by Rural Health Centres

The status of Health infrastructure in the State is improving over the years. Despite improvements in the healthcare delivery system, there is a shortfall of different types of health facilities. Further, it is being noted that the average population coverage by different types of rural health centres is more as per the norms of Indian Public Health Standard (IPHS).

**Table 3.7: Average Rural Population Covered by Health Centres**

Average Rural Population covered by different types of Health centre (As on 31st March 2015)				Average Rural Population covered by different types of Health centre (As on 31st March 2019)		
	Sub Centre	PHC	CHCs	Sub Centre	PHC	CHCs
<b>Assam</b>	5,801	26,437	1,77,530	6,291	30,875	1,65,017
<b>India</b>	5,426	32,944	1,54,512	5,616	35,567	1,65,702

Source: Rural Health Statistics, 2016 & 2019

Table 3.7 presents the facts on population covered by Sub Centre (SC), Primary Health Centre (PHC) and Community Health Centre (CHC) in Assam. As per Rural Health Statistics (2019), it has been found that the average population covered by an SC has been found 6,291. The population coverage by a Sub-Centre under the study has been found excess than the norms (3,000-5,000) IPHS.

It has been found that the average population coverage by PHC in Assam was 26,437 in 2015, that laying within the prescribed standard in terms of Population coverage. But, it is found that the average population coverage by PHC in Assam has been above the maximum population i.e., 30,000 populations in 2019 as per IPHS, 2012. Nevertheless, the national-level population coverage by different types of health centres is also beyond the range of IPHS (2012). Similarly, the average population covered by CHCs has been found 1,65,017 in 2019, which is relatively smaller than 1,77,530 in 2015. As per the IPHS, 2012, the average population covered by CHC has been found above the norms of 80,000 - 1,20,000 population.

### 3.3.2 Average Number of Villages Covered by an SC, PHC & CHC

Comparative statement of average of numbers of villages covered by rural health centre in connection with the primary health care service in Assam and India has been presented as below.

**Table 3.8: Average Number of Villages Covered by an SC, PHC & CHC**

State/National	Sub Centre	PHC	CHC
Assam	6	28	149
<b>All India</b>	<b>4</b>	<b>26</b>	<b>120</b>

Source: Rural Health Statistics, 2019

Table 3.8 describes the number of villages covered by different types of rural health centres in Assam. As of 31st March 2019, a Sub Centre covers 06 villages, PHC 28 villages and CHC 149 villages. On the other hand, 04 villages, 26 villages and 120 villages are covered on average at national level. Thus, it is found that the coverage of villages by each health centre in Assam is higher than the national level.



### 3.3.3 Average Rural Area and Average Radial Distance Coverage

Average rural area and radial distance in square kilometer covered by each SC, PHC and CHC has been highlighted as below. Average rural area and average radial distance covered by health facilities in Assam and All India are shown in Table 3.9.

**Table 3.9: Average Rural Area and Average Radial Distance Coverage  
(As on 31st March 2019)**

State/National	Average Rural Area [Sq. Km.] covered by a			Average Radial Distance [Kms] covered by a		
	Sub Centre	PHC	CHC	Sub Centre	PHC	CHC
Assam	9.27	48.58	615.05	1.72	3.93	13.99
<b>All India</b>	<b>18.98</b>	<b>120.19</b>	<b>559.96</b>	<b>2.46</b>	<b>6.18</b>	<b>13.35</b>

Source: Rural Health Statistics, 2019

Table 3.9 portrays the average area coverage by a Sub Centre, PHC and CHC in square km of 9.27, 48.58 and 615.05 respectively. Similarly, the average radial distance in km covered by a Sub Centre, PHC and CHC are 1.72, 3.93 and 13.99. However, the average area coverage in square km and average radial distance coverage is lower than the national level.

### 3.3.4 Manpower in Public Health Institutions in Assam

The status of Medical and Para-medical staff is shown in Table 3.10. The number of available Government doctors in the State is 5,004, including Ayurvedic and Homoeopathic doctors in 2014. Rural Health Practitioners are also providing primary health care services to the village community, and their number was found to be 354 as per Statistical Handbook Assam, 2015. The number of staff nurse combining ANM and GNM is 15,553.

Manpower in health services has been marked out as the “heart of the health system of any country” (National Health Profile, 2016). As per Statistical Handbook Assam 2019, the Health workers' strength combining medical and para-medical staff is presented in Table 3.10.

As per the Statistical Handbook Assam, 2019, the number of available doctors in the State is 5,609 combining the Allopathic, Ayurvedic and Homeopathic doctors, excluding the MBBS Doctors for 1-year posting. The Government of Assam deployed Rural Health Practitioners (RHPs) in high focus districts (HFDs) to provide comprehensive health care services. RHPs provide all the essential health services - preventive, promotive, curative and emergency care in rural areas of Assam.

**Table 3.10: Number of Medical and Para-Medical Staff in Assam**

POSITON	2014			2019 (As on 31-03-2019)		
	Govt.	NHM	Total	Govt.	NHM	Total
MBBS Doctors	1693	888	2581	2355	742	3097
Specialist Doctors	841	292	1133	828	297	1125
Ayurvedic Doctors	358	434	792	358	453	811
Dental surgeon	63	199	262	87	192	279
Homeopathic Doctors	75	161	236	75	222	297
MBBS Doctors for 1-year rural posting	-	-	-	0	402	402
ANM	4934	5184	10118	6673	5578	12251
GNM	2609	2826	5435	3229	3166	6395
Pharmacists	1368	247	1615	1392	697	2089
Laboratory Technicians	860	641	1501	871	776	1647
Radiographer	91	50	141	109	46	155
Rural Health Practitioner	0	354	354	0	562	562

Source: Statistical Handbook Assam, 2015 & 2019

As per Statistical Handbook Assam 2019, 562 RHPs are providing primary health care service to the village community. The total number of staff nurses combining ANM and GNM is 18,646.

**Table 3.11: Status of Manpower in Rural Health Institutions in Assam (As on 31st March 2015)**

Position	Required	Sanctioned	In Position	Vacant	Shortfall
ANM	5635	5962	9220	*	*
Doctors <sup>1</sup>	1014	NA	1355	NA	*
Specialists at CHC <sup>2</sup>	604	NA	121	NA	483
Radiographer <sup>3</sup>	151	145	65	80	86
Pharmacists <sup>4</sup>	1165	1284	1347	*	*
Laboratory Technicians <sup>5</sup>	1165	860	1225	*	*
Nursing Staff <sup>6</sup>	2071	2798	3056	*	*

Source: Statistical Handbook Assam, 2015

1=One per Primary Health Centre, 2= Four Specialists per Community Health Centre

3=One per Community Health Centre, 4= One per each Primary Health Centre and Community Health Centre, 5=One per each Primary Health Centre and Community Health Centre

6=One per Primary Health Centre and 7 per Community Health Centre

As per the RHS 2015, Table 3.11 focuses on the manpower status in rural health institutions in Assam. According to the statistics, there is no shortfall of doctors even in the public health institutions located in rural areas. It has been observed that a shortfall in case Specialists and Radiographers in Assam.

However, it is noticed that ANM, Nursing Staff and other Para-medical personnel are available more than required in the rural healthcare centres. Nevertheless, there is an acute shortage of Specialists in the public health institutions located in rural areas as 121 nos. are in position against the required 604 nos. i.e., stands at a shortfall of 80% approximately. Similarly, the number of radiographers is a shortfall of 86 nos.

**Table 3.12: Health Worker at Different Health Institutions in Tribal Areas**

Health Worker (F)/ ANM/Doctor in Tribal Areas	Required <sup>1</sup>	Sanctioned	In Position	Vacant	Shortfall
	[R1]	[S]	[P]	[S-P]	[R1-P]
Health Worker (F) / ANM at PHCs	181	NA	415	NA	**
Health Assistants (Female) / LHV at PHCs	181	NA	22	NA	159
Doctors <sup>2</sup> at PHCs	181	NA	336	NA	**
Dental Surgeons at PHCs	27	NA	11	NA	16
Pharmacists at PHCs	181	NA	273	NA	**
Lab Technicians at PHCs	181	NA	230	NA	**
Nursing Staff at PHCs	181	NA	380	NA	**

Source: Rural Health Statistics, 2019

<sup>1</sup> = One per Primary Health Centre as per IPHS norms, <sup>2</sup> = Allopathic Doctors

NA=Data not Available, \*\*= Surplus

Table 3.12 describes the availability of health workers at Primary Health Centres (PHCs) located in tribal areas of Assam. It is found that 415 ANMs are available to provide health care services in tribal areas of Assam against the required 181 ANMs. It has been found that there is a surplus in the case of ANMs. Similarly, a surplus number of doctors has been found against the required 181 doctors. Further, it has been found that the number of pharmacists, lab technicians

and nursing staff available in the PHCs is excess than the requirement. However, the number of female health assistants in tribal areas has been found relatively less than requirement in the PHCs. Similarly, the number of dental surgeons at PHCs has also been found a shortfall of 16 nos.

### **3.3.5 District-wise Public Health Institutions in Assam**

Table 3.13 presents the various types of public healthcare institutions available district-wise in Assam as per Rural Health Statistics Bulletin, 2015. The number of Primary Health Centre (PHC), where at least one Medical Officer is available to the village community to provide primary healthcare service has been found 1,014 in the state. The highest number of PHCs is found in Nagaon district, whereas Karbi Anglong district has the lowest PHCs. Moreover, Nagaon district has the highest number of health institutions with one District hospital and a maximum number of Community Health Centres (CHCs) and Sub-Centre. In contrast, Dima Hasao district has the lowest no. of public health institutions.

According to the Statistical Handbook of Assam 2019, the number of Primary Health Centre (PHC) has been found 1,208 nos. Nagaon district has the maximum number of PHCs, i.e., 100 nos of PHCs that constitute 8.28 per cent of total PHCs of the state whereas Dima Hasao district has the lowest number PHCs, i.e., 11 nos of PHCs that comprised 1.01%. Moreover, Nagaon district has the highest number of public health institutions (474) combining 01 District hospital, 17 Community Health Centres (CHC), 100 Primary Health Centres (PHCs) and 351 Sub-Centres. On the other hand, Dima Hasao district has the lowest nos. of public health institutions in relation to rural health care delivery system excluding the Kamrup (Metro) district. Of course, it is to be worth mentioning that in Assam, Nagaon district has the highest population (8,26,006), and Dima Hasao has the lowest population (2,13,529). However, the average population coverage per SC (3,285) in Dima Hasao exceeds the Nagaon (2,333). Similarly, each PHC of Dima Hasao serves 19,411 populations against the 10,325 per PHC in Nagaon.

**Table 3.13: District-wise Public Health Institutions in Assam (2015 and 2019)**

Name of the District	CHCs		PHCs		Sub Centres		Total No. of Health Institutions	
	2014	2019	2014	2019	2014	2019	2014	2019
<b>Baksa</b>	<b>5</b>	<b>6</b>	<b>204</b>	<b>50</b>	<b>157</b>	<b>157</b>	<b>157</b>	<b>214</b>
Barpeta	6	9	324	56	264	264	264	331
Bongaigaon	3	4	118	31	84	94	94	130
Cachar	5	4	310	35	270	270	270	311
Chirang	3	3	115	33	86	87	87	124
Darrang	6	7	200	45	163	159	159	212
Dhemaji	4	4	125	22	98	98	98	125
Dhubri	8	8	300	55	246	245	245	311
Dibrugarh	7	8	269	37	231	234	234	279
Dima Hasao	2	2	79	13	65	72	72	88
Goalpara	5	6	198	50	151	154	154	212
Golaghat	4	4	190	45	144	144	144	195
Hailakandi	3	3	122	16	105	107	107	127
Jorhat	5	6	196	49	144	144	144	202
Kamrup (Metro)	3	3	82	25	51	48	48	78
Kamrup (Rural)	11	11	364	94	280	279	279	389
Karimganj	5	7	253	36	218	222	222	266
Kokrajhar	4	4	212	59	161	161	161	226
Lakhimpur	8	8	196	32	156	156	156	198
Morigaon	5	6	165	46	123	123	123	177
Nagaon	15	17	450	100	354	351	351	474
Nalbari	9	11	178	59	121	121	121	193
Sivasagar	4	4	271	47	219	220	220	274
Sonitpur	7	9	343	68	275	279	279	359
Tinsukia	6	7	194	25	164	164	164	197
Udalguri	3	5	174	29	146	146	146	181
East Karbi Anglong	145	6	204	51	6	145	145	204
West Karbi Anglong								
<b>ASSAM</b>	<b>151</b>	<b>172</b>	<b>5830</b>	<b>1208</b>	<b>4621</b>	<b>4644</b>	<b>4644</b>	<b>6078</b>

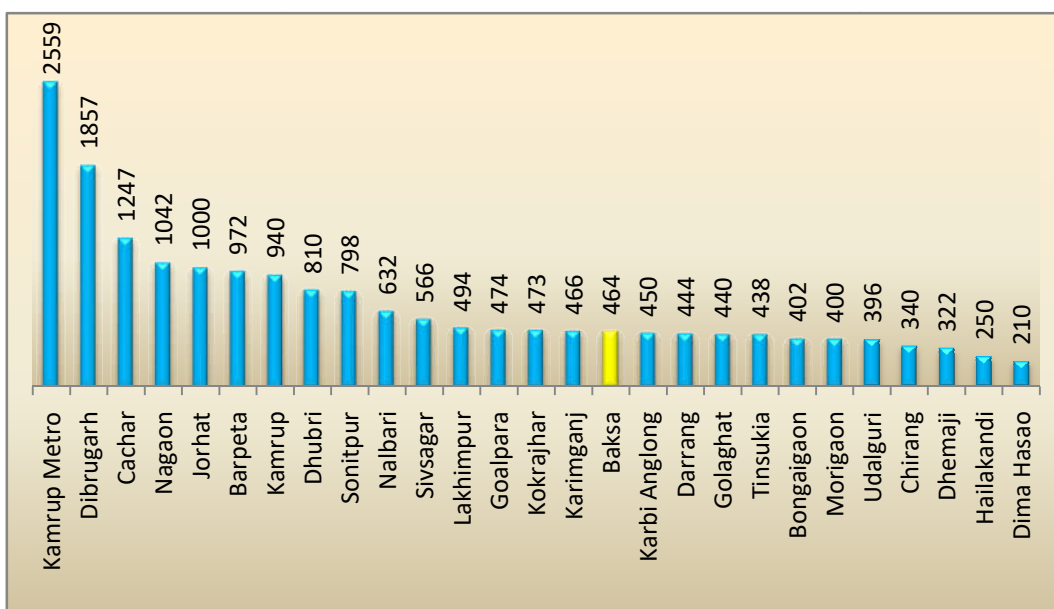
(Source: Rural Health Statistics Bulletin, March 2015, Statistical Handbook of Assam 2015 & 2019)

NOTE: Total districts 33 upto 2019, \* excludes from table 5 newly created districts in 2015(, No record found for Biswanath; Hojai, South Salmara-Mankachar, ^ includes Charaideo=1 CH, # for 2019 figure(s) include East Karbi Anglong & West Karbi Anglong), CH=Civil Hospital, SDCH= Sub Divisional Civil Hospital, CHC= Community Health Centre, FRU= First Referral Unit, PHC= Primary Health Centre

### 3.3.6 Availability of Beds in Health Institution in Assam

. According to Economic Survey Assam, 2015 (as on 1/1/2013), the average population per bed in Government Hospital is 879 in India and 3,062 for Assam. Figure 3.2 focuses on the beds available in public hospitals across the state as per Statistical Handbook Assam, 2019.

**Figure 3.2: Availability of Beds District wise in Assam**



Source: Statistical Handbook Assam, 2019

The top five districts having 1,000 beds and above are Jorhat(1,000), Nagaon(1042), Cachar(1247), Dibrugarh(1,857) and Kamrup(Metro)(2,559). Of course, four districts have medical college and hospital except Nagon. On the other hand, the bottom four district having lowest number of beds are Dima-Hasao(210), Hailakandi(250), Dhemaji(322), Chirang(340) and Udalguri(336). According to Economic Survey Assam 2015, average population per bed in Government Hospital is 3062 for Assam whereas 879 in India. Hence, this indicates the small number of hospital beds in public healthcare institutions of Assam which alarming acute shortage during episode of different diseases due to epidemic, endemic etc.

It has been observed that Baksa district has 464 beds combining available beds in all types of health institutions. Karbi Anglong represents the undivided Karbi Anglong which includes East Karbi Anglong and West Karbi Anglong. There are five more newly created districts, viz.,- Biswanath, Charaideo, Hojai, Majuli and South Salmara, not having a single bed as per available source.

It has been observed that total 18006 nos. of bed in Assam in 2014 (as per Assam Statistical Handbook 2015) and 18886 nos. in 2018 (as per Assam Statistical Handbook 2019). It has been found an increase of 800 beds in 2018 (Tables have been shown in Annexure 3 & 4). However, bed strength has been remained the same (466 nos.) in Baksa district. Thus, it can be concluded that the number of beds available has been remaining low than required in against of the increasing population in the state as well as in the district of Baksa.

### 3.3.7 Non-availability of Essential Drugs

Comptroller and Auditor General (CAG), 2017 on Availability of Health Infrastructure in Assam under National Rural Health Mission (NRHM) revealed that the State had devised Essential Drug List (EDL) for various levels of health centres and hospitals except for SCs. However, as per IPHS norms, nine types of drugs were to be made available in the SCs. On scrutiny of the report on availability of EDL, it was found that in the selected facility, significant number of drugs was never supplied at various levels of health centres and hospitals.

**Table 3.14: Non-Availability of EDL in Selected Health Centres**

Category of health centres	Number of health centres	Number of items enlisted in the EDL	Number of items of drugs in the EDL not supplied (Range of non-supply)*	
			From	To
PHC	26	128	7	48
CHC	7	132	6	19
SDCH	4	189	6	48
DH	5	189	7	27

Source: Derived from CAG Report, 2017

\*Less than 5 items of drugs ignored.

Table 3.14 depicts the non-availability of EDL in different types of selected health centres. Further, it was also found that many of the drugs in the enlisted EDL remained out of stock for a long time- minimum 30 days duration. Thus, due to non-supply/non-availability of drugs for prolonged periods, patients were being deprived of medicines and affecting the health care services by the public health institutions.

### **3.4 Profile of Baksa District**

Bodoland Territorial Areas Districts (BTAD) has been created with four districts- Kokrajhar, Chirang, Baksa, and Udalguri after the historic Bodoland Territorial Council (BTC) accord signed on February 10, 2003 under the 6<sup>th</sup> Schedule of Indian Constitution. Baksa is one of the four districts of Bodoland Territorial Areas Districts (BTAD) in the state of Assam. It was notified as a district in October 2003 and administration of the district started functioning from 1 June 2004. Baksa district was created from parts of Barpeta, Nalbari, and Kamrup districts (District Census Handbook, Baksa, 2011)<sup>5</sup>.

A very small part of Darrang District also falls within the District. The geographical area of the district is 2,457 Sq. Km. As per the 2011 population census, the total number of villages is 690, of which 971 villages are inhabited and 11 villages uninhabited. In the district, the number of households have been found 1,91,191; of which 457 are institutional and 53 houseless. Baksa district has the largest population among the districts under BTAD. Baksa district has three Sub-Divisions and 13 nos. of Revenue Circle.

However, after signing the third Bodo Accord, on January 27, 2020, the earlier BTAD has been renamed Bodoland Territorial Region (BTR). Since the Panchayati Raj system is not in force, most of the departments, including Health & Family Welfare, have been transferred by Govt. of Assam. Therefore, the local administration has also role to monitor the function of the health department in the district.



### 3.4.1 Demographic and Socio-Economic of Baksa District

**Table 3.15: Demographic Composition of Baksa District**

<b>Total Population</b>	<b>9,50,075</b>
Male	4,81,330
Female	4,68,745
Proportion to Assam Population	3.04%
Decadal Population Growth	10.74%
Rural Population	9,37,833 (98.71%)
Urban Population	12,242 (1.29%)
Sex Ratio (Per 1000)	974
Child Sex Ratio (0-6 Age)	966
Density/km <sup>2</sup>	387
Scheduled Castes(SC)	7.69%
Scheduled Tribes(ST)	34.84%
Combined Literacy	69.25%
Male Literacy	77.03%
Female Literacy	61.27%

Source: [http:// www.baksa.gov.in](http://www.baksa.gov.in) & District Census Handbook 2011, Baksa

Table 3.15 highlights the basic socio-demographic characteristics of Baksa district as per the Census, 2011. In 2011, Baksa had a population of 9,50,075 of which 4,81,330 (50.66%) are males and 4,68,745(49.34%) are females. Baksa District population constituted 3.04 percent of the total population of Assam. The decadal growth rate was 10.74 percent in 2001 to 2011. In the district, 98.7% of the total population is residing in rural areas. The sex ratio in the district is 974 higher than the State sex ratio of 954. The proportion of Scheduled Tribes (ST) population was 34.84%, that comparatively higher than the state proportion of 12.5%. The rate of combined literacy has been found at 69.25% in the district against the 72.19% of the State. The male and female literacy have been found 77.03% and 61.27% respectively those are comparatively lower than the State male and female literacy rate of 77.85 and 66.27% accordingly. The density of population has been found 387 in the district which is lower than state level (398).



**Table 3.16: Households Distribution of Baksa District**

Characteristics		No. of Households/Percentage
Total Households		1,91,191
Rural Households		1,89,249 (98.72%)
Urban Households		2,452 (1.28%)
Drinking water within premises		56.30%
Drinking-Water near premises		22.30%
Electricity as source of lighting		23.30%
Latrine facilities within premises		39.40%
Standard of Living Index	Low	73.5%
	Medium	20.4%
	High	6.1%

Source: District Census Handbook, Baksa 2011& DHLS-3

Table 3.16 presents the household characteristics of the district, indicating some basic facilities required for every household. The percentage of households having required facilities is comparatively meagre. Thus it can be understood that the district is economically lagging behind in comparison to other district and regions of the state. It was found in the district that 56.30% had drinking water facility within premises and 22.30% near the premises. Households having electricity as source of lighting was 23.30%, and the percentage of having latrine facilities within premises was found as 39.40%. As per District Level Household Survey (DLHS) -3 published in 2010, 73.5% of total households are falling in the low category of the Standard of Living Index. It has been observed that 20.4% households belong to medium SLI category and 6.1% only in High SLI category

in the district. Based on the above facts, the Baksa district has been witnessed less development relatively than other districts in the state of Assam.

**Table 3.17: Workers and Non-Workers of Baksa District**

Category	Person	Number	Percentage
Total Worker (Main Workers and Marginal Workers )	Persons	4,06,756	42.81
	Males	2,66,611	55.39
	Females	1,40,145	29.9
(i) Main Workers	Persons	2,78,297	29.29
	Males	2,15,948	44.86
	Females	62,349	13.3
(ii) Marginal Workers	Persons	1,28,459	13.52
	Males	50,663	10.53
	Females	77,796	16.6
Non-Workers	Persons	5,43,319	57.19
	Males	2,14,719	44.61
	Females	3,28,600	70.1

Source: District Census Handbook, Baksa, Census 2011

It has been found that a total workers of 4,06,756 nos. comprising 42.81 percent of total population and 5,43,319 nos. of non-workers that comprised 57.19 percent. Out of total workers 2,78,297 are main workers and 1,28,459 are marginal workers in the Baksa district. The combined percentage of male workers is 55.39 percent while it is 29.9 percent for female. It is found that the percentage of female non-workers (70.1%) is higher than the male non-workers (44.61%).

**Table 3.18: Category of Workers (Main & Marginal)**

Category	Person	Number	Percentage
(i) Cultivators	Persons	1,49,288	36.7
	Males	1,17,283	43.99
	Females	32,005	22.84
(ii) Agricultural Labourers	Persons	94,591	23.25
	Males	50,246	18.85
	Females	44,345	31.64
(iii) Workers in household industry	Persons	20,310	4.99
	Males	7,003	2.63
	Females	13,307	9.5
(iv) Other Workers	Persons	1,42,567	35.05
	Males	92,079	34.54
	Females	50,488	36.03

Source: District Census Handbook, Baksa, Census 2011

The category of the workers that includes main worker and marginal workers has been classified into four viz., cultivators, agricultural labourers, workers in household industry, and other workers. Accordingly, largest proportion of workers (1,49,288) comprising 36.7 percent belong to cultivators. While, other workers (1,42,567) comprised 35.05 percent of total workers and agricultural labourers (94,591) comes in third comprising 23.25 percent. It is observed that only 4.99 percent i.e., 20,310 nos. engaged in household industry. The percentage of male workers than their counter part i.e., female is high in three categories viz., cultivators, workers in household industry, and other workers. The participation percentage of female has been found more for agricultural labourers.

### 3.4.2 Public Health Institutions in Baksa District

**Table 3.19: Details of Public Health Institutions of Baksa district**

Name of Civil Hospital	Name of CHC	Name of Block PHC	No. & Name of MPHC	No. & Name of SHC	No. & Name of SD	No. of SC
Dr Rabi Boro District Civil Hospital (200 bedded), Mushalpur	Barama CHC	Barama PHC	1 No. (Medaghat MPHC)	Nil	3 Nos. ( Barimakha, Debachara & Digheli)	<b>14 Nos.</b>
	Mushalpur CHC	Mushalpur PHC	5 Nos. (Angardhowa, Tupalia, Baganpara, Borbori, Thorma & Dighodonga )	1 No. (Pamuapathar SHC)	5 Nos. (Subankhata, Nikashi, Odalbari, Karemura & Athiabari)	<b>27 Nos.</b>
	Tamulpur CHC	Tamulpur PHC	2 Nos. (Gandhibari & Kachukata)	Nil	2 Nos. (Kathorbari, Kumarikata & MMU Tamulpur SD)	<b>32 Nos.</b>
	Goreswar CHC	Nizkaurbaha PHC	3 Nos. (Somohori, Goreswar & Naokata )	Nil	2 Nos. (Uttarbetna & Dwarkuchi)	<b>25 Nos.</b>
	Jalah CHC	Jalah PHC	5 Nos. ( Salbari, Saudarvitha , Swarnabazar, Nimua & Majorgaon)	Nil	1 No. Sarumanikpur SD	<b>45 Nos.</b>
	----Nil----	Golagaoan PHC	2 Nos. (Anchali & Jalagaon)	2Nos. (Koklabari & Betbari)	Nil	<b>14 Nos.</b>
<b>Total</b>	<b>CHC=5</b>	<b>BPHC=6</b>	<b>MPHC=18</b>	<b>SHC=03</b>	<b>SD=14</b>	<b>SC=157</b>

Source: [http:// www.baksa.gov.in](http://www.baksa.gov.in) accessed in 2016

Table 3.20 presented the available types of public health institutions in the district are shown in details. There are six Block Primary Health Centres (BPHCs) in Baksa district to monitor and supervise the functioning of Primary Health

Centres (PHCs) and Sub Centres (SCs). Golagaon BPHC has 1 PHC, 2 MPHCs, 2 SHCs and 14 SCs. It is to point out that there is no CHC in the Golagaon BPHC area. Mushalpur BPHC has the largest number of PHCs in the district. There are 1 PHC, 5 Mini PHCs, 1 SHC, 5 SDs and 27 SCs under Mushalpur BPHC. Similarly, it has been found that Jalah BPHC has 1 PHC, 5 Mini PHCs, 1 SD, and the maximum SCs among the 6 BPHCs is available.

According to Assam Statistical Handbook 2019, the number of Community Health Centre has been increase upto 6 nos. in Baksa district. It has been found 36 nos. of Primary Health Centres are available in 2019. However, there has been observed that the number of State Dispensary (SD) and Sub Centre(SC) remained same from 2015 to 2019. A total of 214 public health institutions are available in Baksa district.

It is depicted that Jalah BPHC has the largest number of primary healthcare institutions while both Barama and Golagaon has the equal numbers of primary health institutions that count as lowest in the district.

**Table 3.20: Pattern of Growth of Public Health Institutions in Baksa District**

Type of Health Institution	2015	2019
Civil Hospital	1	1
SDCH	0	0
CHC	5	6
FRU	2	-
PHC	6	36 <sup>#</sup>
MPHC	18	-
SHC	3	-
SD	14	14
SC	157	157
Total	206	214

Source: [http:// www.baksa.gov.in](http://www.baksa.gov.in) & Assam Statistical Handbook, 2015 & 2019

# includes MPHC & SHC

Table 3.20 presents public health institutions available in the district. The nomenclature of a PHC varies from state to state such as Additional PHCs/New PHCs as per IPHS, 2012. It is to be mention that Mini Primary Health Centre (MPHC), Subsidiary Health Centre (SHC) and State Dispensary (SD) are considered as Primary Health Centre (PHC) in the state of Assam as well as in the survey area. As per the Statistical Handbook, Assam 2015, there are 206 public

health institutions consisting of Civil Hospital=01, CHC=05, FRU=02, PHC=41 and SC=157. As per the record of Assam Statistical Handbook 2019, it has been found that the total number has been found 214 comprising 1 DH, 6 CHCs, 36 PHCs 14 SDs and 157 SCs. Thus total numbers has been increased upto 214 in 2019 in comparison to 206 of Public Health Institutions in 2015. As per 2011 population census the calculated average population covered by an SC, PHCs and CHC has been found 6,051, 19,001 and 1,58,346 respectively. The average population covered by SC and CHC in the district has been found above the maximum limit norm of IPHS. Of course, the average population covered by a PHC was 23,173 persons in 2015 and has shown a fall in 2019.

### 3.4.3 Manpower in Rural Health Institutions in Baksa District

Table 3.21 presents the manpower positions in the district to understand the position of healthcare service providers, including medical and para-medical staff.

**Table 3.21: Number of Medical and Para-medical Staffs in Baksa District (As on 27-05-2015)**

Post	In Position
MBBS Doctors	66
Specialist Doctors	11
Ayurvedic Doctors	47
Dental surgeon	09
Homoeopathic Doctors	12
ANM	346
GNM	88
LVH	07
Pharmacists	60
Laboratory Technicians	46
Radiographer	07
Rural Health Practitioner (RHP)	13

} 145 Nos. of Doctor  
 } 441 Nos. of Nurse  
 } 13 Nos. Para-medical Staff  
 Medical staff

Source: Manpower Detail- Baksa District (HMIS)



According to Manpower Details- Baksa District<sup>6</sup>, as of 27-05-2015, 145 nos. of doctors and 13 nos. of RHP serve 9,50,075 total population of the district. There are 441 nos. of nurses which include ANM, GNM and LVH in the district. There are 46 numbers of Rural Health Care Institutions excluding the nos. of Sub Centres, where Pharmacists and Laboratory Technicians are available, and their positions are 60 and 46, respectively. Thus, a total of 113 nos. para-medical staff has been found.

### **3.5 Facility for Healthcare Services in Six Selected PHCs under Study**

The profile of existing health care facilities of the selected PHCs for providing primary healthcare services is based on the field survey.

#### **3.5.1 Physical Infrastructural Facilities**

All the six PHCs under study are functioning from government buildings. However, it has been observed that the two PHCs - Katharbari SD and Koklabari SHC have inadequate building sizes in proportion to visitors. Further, the building of Golagaon PHC has been observed dilapidated which might be affecting in providing quality healthcare service. Compound wall with entrance gate is available in 100% PHCs. All PHCs have OPD room with adequate windows for light and air. Registration counters are available in all PHCs. However, waiting area for outpatient with the sitting arrangement is not sufficient in 33.33% PHCs.

It has been found that there is only 2 PHCs constituting 33.33% have inpatient ward facility with 4 and 6 beds each respectively. Labour room is available in all PHCs and functioning for regular deliveries. A separate Family Welfare Clinic is not available in any of the six PHCs. None of the selected PHCs in the study have Operation Theatre (OT).

Residential accommodations for Medical Officers have been found available in all PHCs. However, the occupancy percentage by them has been found 66.66%. Similarly, residential for nursing staff, i.e. GNM/ANM, have been available in all PHCs, and the occupancy rate has been found 100%. However, residential quarter for paramedical and other staff has not been available in any of the six selected PHCs in the study area.

The main source of water supply is deep tube well/hand pump in all PHCs. All the Running water supply facility has been found in 100% PHCs. Only 50% PHCs have flush toilet facilities. Further, only 66.66% PHCs have separate toilet for ladies and gents.

Electricity with generator/inverter backup is available in all PHCs. Out of six PHCs; 16.67 percent of PHCs did not have functional ambulance service that required for providing referral service to higher health institution.

### **3.5.2 Manpower in Position of Six Selected PHCs**

Table 3.22 reveals the availability of manpower in the six selected Primary Health Centres (PHCs) under the study. It has been observed that Medical Officers, Pharmacists and Laboratory technicians have been found in position in all PHCs under study. However, Medical Officers (Allopathic) are available only in three PHCs out of six PHCs. One MBBS doctor for one year under compulsory rural service has been found in position at Koklabari SHC. Thus, out of the total six PHCs under the study, it has been found that no Medical Officer having MBBS degree in two PHCs, viz., Katharbari SD and Saudarvitha MPH, has been available to provide allopathic health care services. Nursing staff, that is, GNM/ANM, are available in six PHCs under the study.

**Table 3.22: Manpower in Position of Six Selected PHCs**

Manpower	Golagaon PHC	Koklabari SHC	Katharbari SD	Kumarikata SD	Nimua MPHC	Saudarvitha MPHC
Medical Officer (Allopathic)	1	1 <sup>#</sup>	0	1	1	0
Medical Officer (AYUSH)	1	1	1	1	1	1
Pharmacist	4	1	1	1	1	1
Lab Technician	1	1	1	1	1+1 <sup>##</sup>	1
GNM	2	2	1	2	2+2 <sup>^^</sup>	3
ANM	1	2	1	0	1+1 <sup>^^</sup>	3
Health Educator	0	0	0	0	0	0
Accountant/	1	1	1	1	1	1
Data Entry Operator/Clerk		1	1	0	0	0
Driver	1	1*	1*	1*	1*	1*
Sweeper	1	1*	1*	2*	1*	1*
Grade IV	2	2	5 <sup>#</sup>	1+1 <sup>^^</sup>	3	2
<b>Total</b>	<b>15</b>	<b>12</b>	<b>14</b>	<b>12</b>	<b>17</b>	<b>14</b>
<b>No. of ASHA in each health care centre for assisting Health workers</b>						
ASHA	<b>14</b>	<b>14</b>	<b>37</b>	<b>68</b>	<b>122</b>	<b>33</b>

Source: Field Survey

NB: # One-year compulsory Rural posting for MBBS, \* Contractual appointed by Management Committee

## Ophthalmic Assistant- is a primary health care specialist trained to examine the eyes to identify visual defects, signs of injury, eye disease or abnormalities, and general health problems.,

^ Ward boy, ^^ Contractual appointment by RKS

Further, health educators can play an important role in the healthcare of rural masses not available in any selected PHCs. No regular driver for ambulance services is available in any of the PHCs. Nevertheless, it has been found that Hospital Management Committee appoints all drivers of the selected PHCs on a contractual basis to provide ambulance service. It is also found that Sweepers are also appointed by Hospital Management Committee on contractual basis in selected PHCs except for Golagaon PHC. Office management staff, including Accountant/Data Entry Operator /Clerk, has been found available in all selected PHCs under study.

### 3.5.3 Availability of Assured Medical Services

**Table 3.23: Availability of Assured Medical Services**

Service Availability	No. of Primary Health Centre (n=6)	Percentage of Primary Health Centre with service
OPD services	6	100%
24 hrs. Emergency services	6	100%
Referral services*	5	83.3%
Inpatient services	3	50%
Laboratory Services	6	100%

Source: Field Survey

\* Ambulance services

Table 3.23 reveals that the Out-Patient services are available in all PHCs. 100% of selected PHCs have been providing 24 hours Emergency service. However, it has been found that emergency services are provided basically for delivery cases. Of course, the referral service to the higher health care institution has been available in 83.3% PHCs through ambulance services. It has been found that an ambulance has gone out of order in one Primary Health Centre under the study. Inpatient service has been found in 50% of PHCs only. Laboratory services are available in all PHCs i.e., 100%.

### 3.5.4 Availability of Laboratory and Diagnostic Services

**Table 3.24: Laboratory and Diagnostic Services**

Lab services	No. of Primary Health Centre (n=6)	Percentage of Primary Health Centre with service
Blood Sugar	6	100%
Blood smear Examination for Malaria	6	100%
Rapid Testing of pregnancy	6	100%
Gram staining for TB	4	66.67%
Blood Grouping and Rh Typing	6	100%
Urine Test	4	66.67%
Routine Blood and stool Test	0	0%

Source: Field Survey

Table 3.24 shows the laboratory and diagnostic services available in the PHCs of the study area. Laboratory services for Blood Sugar, Blood smear Examination for Malaria, Blood grouping and Rh typing facilities, and Rapid Testing of pregnancy have been found available in all PHCs under study. It has been found that Gram staining for TB and Urine tests are done in 66.67% PHCs. It has been found that Routine Blood and stool Test not done in any of the PHCs under study.

### **3.5.5 Reproductive and Child Health Care Service**

Ante-natal and Post-natal care services are available in all PHCs. It has been found that 24 hours normal delivery service is available in all PHCs under study. Medical Termination of Pregnancy is available in only one PHC of the total six PHCs under the study. All PHCs supply the condom and contraceptive pills. All immunisation and vaccine programmes are available in all PHCs according to the policy and programme undertaken by the Central and State govt. from time to time.

## **Conclusion**

It has been observed that the Baksa district has a 3.04% population of total population of Assam. The rural population in the district has been found 98.7% against the 86% of the state. In comparison to the State ST population (12.5%), the ST population in the district has been found higher i.e., 34.54%. The combined literacy rate of the district (69.25%) is lower than the State level of 72.19%, and male literacy in the district is found 77.03% against the state level 77.85%, and the female literacy rate found 61.27% also lower than the 66.27% of the state. The sex ratio has been found 966 in the district of Baksa, which is higher than the state sex ratio of 954. The public healthcare facilities in the state have been improving over the years. There are 25 Civil Hospitals, 13 Sub-Divisional Civil Hospitals, 1,014 PHCs, 62 FRUs, 151 CHCs and 4,621 Sub Centres. Furthermore, there has been observed a total of 18,006 beds in the state at the end

of 2014 (Economic Survey, Assam, 2015-16). Despite these improvements, there is a shortfall of different types of health facilities. As of 31st March 2015 in Assam, the 5,850 nos. Sub Centres are required in the state; in contrast, 4,621 SCs are available with a shortfall of 1,229 nos. There are only 151 CHCs in position against the required 238 nos., with a shortfall of 87 nos. of CHCs. The average population covered by an SC has been found 5,801 in Assam, exceeding the norms of IPHS of 3,000 to 5,000 people per SC. Similarly, the average population covered by the Community Health Centres has been found 1,77,530, which is beyond the maximum population of 1,20,000 as per the IPHS, 2012. However, the average population covered by Primary Health Centre (PHC) is found 26,437 in the state that comes within the norm of 20,000 to 30,000 as per IPHS, 2012. As of 31st March 2015, a Sub Centre covers 06 villages on average while PHC and CHC cover 26 villages and 175 villages. Further, PHC covers 05 Sub centres, whereas the 07 numbers of PHCs are under each CHC.

As per the Assam Statistical Hand Book 2019, the number of health institutions in the Baksa district has been found same in case of SCs (157) and District Hospital (01) since 2015. It has been found a total of 214 nos. public health institutions including CHCs, PHCs and SDs in Baksa district. The availability of beds in public health institutions has been found 464 nos. in the Baksa district of Assam. Further, a shortage of doctors having degree in allopathic medicine in the selected PHCs to provide healthcare services have also been observed in the study area.

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**Notes & References :**

<sup>1</sup> A Report (2007). Facility Survey of Public Health Institutions in Assam; The Mission Director National Rural Health Mission, Government Of Assam, April 2007, Advent Healthcare Group, New Delhi

<sup>2</sup> [https://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/Labor\\_Room%20Guideline.pdf](https://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/Labor_Room%20Guideline.pdf)

<sup>3</sup> [http://nhm.gov.in/images/pdf/NHM/NHM-Guidelines/Rogi\\_Kalyan\\_Samities.pdf](http://nhm.gov.in/images/pdf/NHM/NHM-Guidelines/Rogi_Kalyan_Samities.pdf)

<sup>4</sup> <https://nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidlines-2012/primary-health-centres.pdf>

<sup>5</sup> Census of India 2011, District Census Handbook, Baksa, Series-19, Part XII-B, Directorate of Census Operations Assam

<sup>6</sup> [http://nhmssd.assam.gov.in/EHRMIS/reports/overall\\_hr\\_dist\\_desg\\_details.php?district\\_id=1](http://nhmssd.assam.gov.in/EHRMIS/reports/overall_hr_dist_desg_details.php?district_id=1)