

PUBLIC EXPENDITURE IN PRIMARY HEALTH CARE IN ASSAM

Heads of Public Expenditure on Health Care

Public expenditure on health care is comprised of government's expenditures on: (a) Medical Care, (b) Public Health and (c) Family Welfare services. Alternatively public expenditure on health care can be defined to include the costs incurred by the government on Promotive, Preventive and Curative health services. The 'Curative' dimension refers to expenditures on:

- (a) Medical institutional facilities, such as, hospitals, dispensaries and clinics etc.
- (b) Medical education and research.
- (c) Production of drugs etc.

The 'Promotive and Preventive' dimension of health care covers:

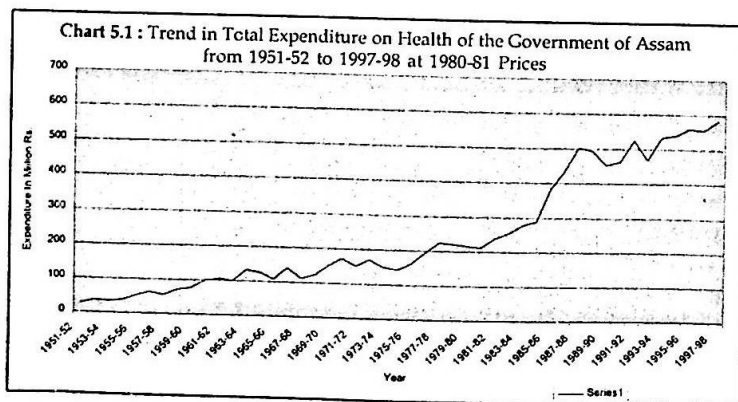
- (a) Public health expenditure.
- (b) Maternal and child health.
- (c) School health care.
- (d) Food and drug administration, pollution control and Minimum Needs Programme.
- (e) Family welfare services etc.

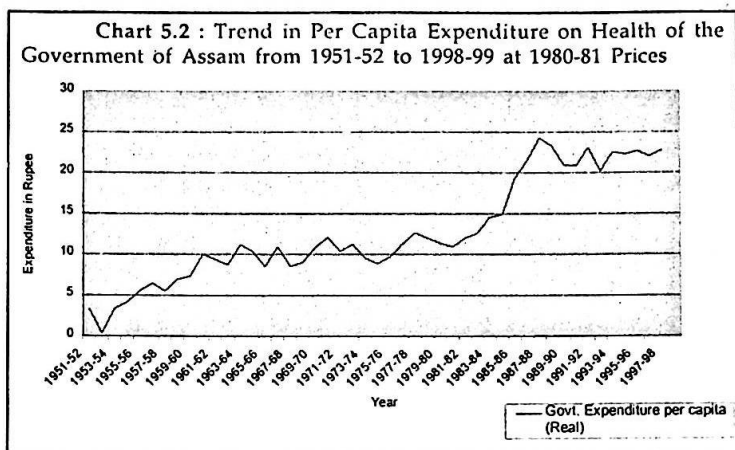
As in case of government expenditure in general, the accounts of government's expenditure in the health sector are also presented in two parts viz., revenue expenditure and capital expenditure. Revenue expenditure generally include

expenditure which are of recurring type and which are necessary for day to day operation and administration of other government sponsored schemes. Thus revenue expenditure includes wage and salaries of the personnel engaged with health care delivery system and expenditure on consumables like medicine etc. and so on. Capital expenditure on the other hand are those which go into creation of fixed capital assets like construction of buildings of hospitals and health centres and installation of equipment and machineries etc.

Trends in Total Government Expenditure on Health in Assam from 1951-52 to 1998-99

Trends in total and per Capita Government Expenditure on Health: In Assam the total government expenditure on health sector at current prices increased steadily from Rs. 6.29 million in 1951-52 up to Rs 2343.97 million in 1998-99 with some year-to-year fluctuations over the period. In real terms i.e. in 1980-81 prices though, the increase appears more modest [Refer Chart-5.1]. Over this period the trend in per capita government expenditure on health in real terms shows three distinct phases. From 1951-52 to 1981-82 the per capita expenditure shows rising trend, but with some year-to-year fluctuation in the expenditure during the period. Between 1981-82 and 1987-88 the per capita expenditure shows steady increase. Since 1987-88 there has been a declining trend in real per capita government expenditure on health [Refer Chart -5.2].





Share of Expenditure on health to the Total Government Expenditure: The share of government expenditure on the health sector in total expenditure of the state government also shows considerable fluctuations and a declining trend since the last part of 1980s. Up to the year 1988-89, the share of expenditure hovers around 6 percent. In the post reform period, the share declined considerably [Refer Table 5.1].

In India, studies by Gill (1987) and Operations Research Group (Rao, Khan and Prasad 1986 & 1993) [refer section 4.1 Chapter Four] found that over the plan period from 1st to 7th though in absolute terms the total amount of funds allocated to health and family welfare services have increased manifold, the overall percentage share of health sector was stabilized at around 4 percent of total government spending. Thus compared to India, in Assam the share of government expenditure on the health sector in total expenditure of the state government was higher during the said period.

Incidentally in the period since 1986-87, the state Government of Assam has been going through serious financial resource shortage. The decline of per capita state government expenditure on health sector in real terms and in terms of share in total expenditure since 1988-89 thus clearly indicates that in face of fiscal hardship the expenditure on health sector has been squeezed more than that on the other sectors.

**Table 5.1: Trends in State Government Expenditure on Health in Assam
(From 1951-52 to 1998-99)**

Year	State Government Expenditure on Health (in million Rs.)				Share of Expenditure on Health in Total Govt. Exp. (as%)	Ratio of Govt. Expenditure on Health to NSDP (as%)	Govt. Expenditure on Health at 1980-81 Prices	Per Capita Real Govt. Expenditure on Health (in Rs. At 1980-81 Prices)
	Medical	Public Health	Family Welfare	Total				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1951-52	3.99	2.30		6.29	7.20	0.28	27.61	3.35
1952-53	4.78	2.98		7.76	6.71	0.36	37.00	0.34
1953-54	4.96	2.79		7.75	5.11	0.33	35.16	3.39
1954-55	5.38	3.59		8.97	5.93	0.33	37.75	4.15
1955-56	6.23	5.34		11.57	5.92	0.45	51.76	5.51
1956-57	8.35	6.94		15.29	5.04	0.53	62.35	6.45
1957-58	7.76	6.32		14.08	4.51	0.47	54.43	5.47
1958-59	10.03	8.51		18.54	5.31	0.59	71.41	6.97
1959-60	11.58	10.03		21.61	6.22	0.63	77.01	7.31
1960-61	13.24	16.87		30.11	7.68	0.82	100.33	10.01
1961-62	16.27	14.15		30.42	6.53	0.81	104.27	9.39
1962-63	17.61	13.33		30.94	6.71	0.79	99.74	8.70
1963-64	22.32	21.33		43.65	8.57	0.95	132.15	11.18
1964-65	22.75	19.63		42.38	6.67	0.87	125.38	10.31
1965-66	23.78	15.42		39.20	5.27	0.73	106.30	8.49
1966-67	30.37	28.02		58.28	6.27	0.93	140.75	10.94
1967-68	29.53	22.75		52.28	4.43	0.71	113.01	8.54
1968-69	34.32	24.70		59.02	5.40	0.74	122.44	9.02
1969-70	41.67	26.90		68.57	5.60	0.90	149.95	10.77
1970-71	49.31	33.37		82.68	5.79	0.97	172.35	12.07
1971-72	47.49	27.44		74.93	5.16	0.83	151.61	10.36
1972-73	50.91	31.37	4.85	87.13	5.62	0.87	170.24	11.23
1973-74	50.64	29.49	9.19	89.32	6.47	0.76	149.86	9.55
1974-75	53.38	47.28	6.38	107.04	6.20	0.71	144.02	8.88
1975-76	85.55	27.57	10.62	123.74	6.80	0.78	161.94	9.67
1976-77	104.27	33.40	14.55	152.22	7.34	0.88	194.03	11.24
1977-78	106.18	36.99	35.64	178.81	7.86	0.96	224.43	12.61
1978-79	127.13	40.68	15.85	183.66	6.14	0.94	219.87	12.00
1979-80	143.18	33.33	19.94	196.45	5.76	0.96	214.95	11.40
1980-81	149.21	42.61	19.46	211.28	5.71	0.92	211.28	10.90
1981-82	203.15	50.83	22.43	276.41	6.38	0.93	238.40	11.97
1982-83	205.26	84.48	28.16	317.90	6.49	0.95	253.32	12.57
1983-84	254.12	94.05	49.63	397.80	6.94	0.99	276.71	14.52
1984-85	307.22	99.43	78.06	484.71	6.09	1.03	288.60	14.87
1985-86	414.70	125.66	119.55	659.91	6.77	1.27	381.52	19.25
1986-87	558.82	137.47	159.52	855.81	6.30	1.52	433.93	21.44
1987-88	722.21	172.42	152.02	1046.83	6.71	1.13	502.24	24.28
1988-89	660.59	177.16	254.54	1092.29	6.80	1.61	492.97	23.30
1989-90	752.92	138.61	221.20	1112.73	5.80	1.38	453.36	20.94
1990-91	904.54	192.61	185.23	1282.38	5.93	1.18	462.48	20.85
1991-92	1011.88	255.55	292.44	1559.87	6.40	1.47	524.73	23.11
1992-93	1087.90	213.80	195.88	1497.58	5.57	1.29	468.77	20.19
1993-94	1272.40	255.23	334.45	1862.08	5.90	1.38	533.79	22.50
1994-95	1498.30	282.76	270.20	2051.26	5.78	1.31	540.40	22.30
1995-96	1581.97	305.44	378.21	2265.62	5.84	1.31	559.74	22.63
1996-97	1726.45	274.28	316.64	2317.37	6.07	1.25	555.49	22.01
1997-98	1757.62	477.94	327.85	2563.41	5.86	0.12	584.58	22.72
1998-99	1573.27	369.72	400.98	2343.97	4.90	1.05		

Ratio of Government Expenditure on Health to NSDP:

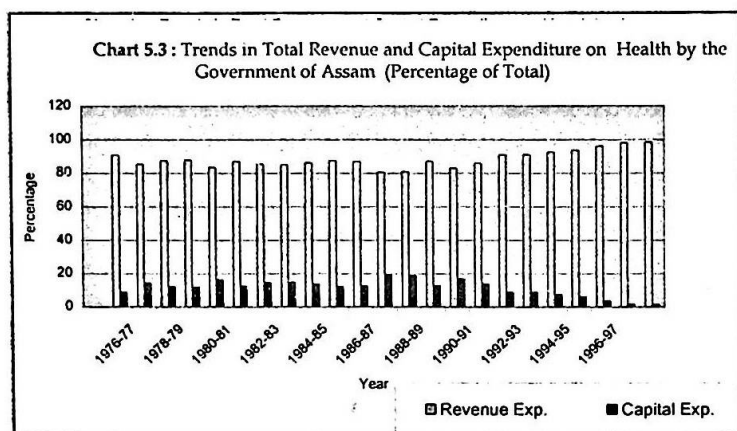
In case of state government expenditure on health as a percentage of NSDP the ratio gradually and steadily creped from 0.28 percent in 1951-52 to 1.61 in 1988-89. In the subsequent years, although the ratio is remaining above 1 percent but shows a declining trend. The comparison with all India position [Refer Duggal et al, 1992] however shows that the ratio of government expenditure on health in Assam to the state income has been more or less the same as the ratio of government expenditure on health to national income at the all India level. However, a World Bank study on 'Investment in Health' concluded that for a decent health care service, which reaches out to most of the population more or less equitably, the state has to spend at least 5 percent of GNP (World Bank, 1993). By this standard in Assam as well as in India during the last 50 years of independence, with low level of SDP and high rate of population growth, public spending for the health sector is too low to have a significant impact on the mass rural population of Assam.

With the reorientation of the role of the state under New Economic Policy since 1991, it was expected that state would become more active in areas like provision of primary education and basic health care etc. However, the declining trend of state government expenditure in Assam in the health sector indicates that increased efforts of the state in the health have not been forthcoming.

Trends in Revenue and Capital Expenditures by the Government of Assam on Health

In Assam, up to the year 1974-75, all government expenditures in health care were provided under revenue account. From 1975-76, the expenditure was allotted in two accounts, viz., revenue and capital accounts. As for trends in the composition of state government's expenditure on health, there was a spurt on capital expenditure between mid 1970s and late 1980s, which contributed significantly to the expansion of health care infrastructure especially in rural areas during the period. As a result of which number of health institutions including hospital, sub-centre, primary health centre etc. increased from 144 in 1974-75 to 6317 in 1993-94.

The number of hospitals in particular increased from 20 to 141 and number of hospital beds increased from 5000 to 9687 between 1974-75 and 1993-94 (CBHI, 1994). In the 1990s however, more than 90 percent of the total expenditure on health has been under revenue account. This shows that in the face of allocation of public expenditure on health since the late 1980s the axe has fallen more heavily on capital expenditure, and the expansion of health infrastructure under public sector must have received a setback in the 1990s as capital expenditure in real terms has declined [Refer Chart 5.3].



In the foregoing analysis it was pointed out that all expenditure on health by the state government till 1974-75 was included under revenue head. Though since 1975-76 there has been a separation of revenue and capital expenditure, revenue expenditure has always remain the more dominant component of total government expenditure on health. The share of revenue expenditure of the total expenditure on health has never been less than 80 percent and in recent years has been in excess of 90 percent. In the present situation the composition of the government's revenue expenditure on health is being analyzed. However, analysis of data on revenue expenditure is preceded by a description of sub-heads of revenue expenditure on health of the Government of Assam.

Table 5.2 : Trends in Total Revenue and Capital Expenditure on Health by the Government of Assam (from 1975-76 to 1997-98)

Year	Total Revenue Expenditure		Total Capital Expenditure		Total Expenditure
	In Real Term (at 1980-81 Prices) (in mill. Rs.)	Percentage of Total	In Real Terms (at 1980-81 Prices) in mill. Rs.	Percentage of Total	In Real Terms
(1)	(2)	(3)	(4)	(5)	(6)
1975-76	147.34	90.98	14.60	9.02	161.94
1976-77	165.68	85.38	28.35	14.62	194.03
1977-78	196.74	87.66	27.69	12.34	224.43
1978-79	193.15	87.84	26.72	12.16	219.87
1979-80	176.30	83.68	38.65	16.32	214.95
1980-81	184.44	87.29	26.84	12.71	211.28
1981-82	203.89	85.52	34.50	14.78	238.40
1982-83	215.68	85.13	37.64	14.87	253.33
1983-84	238.41	86.16	38.29	13.84	276.71
1984-85	252.81	87.59	35.78	12.41	288.60
1985-86	332.12	87.05	49.39	12.95	381.51
1986-87	357.56	80.55	86.36	19.45	443.93
1987-88	407.15	81.06	95.09	18.94	502.24
1988-89	429.40	87.10	63.57	12.90	492.97
1989-90	376.41	83.02	76.94	16.98	453.36
1990-91	397.82	86.01	64.66	13.99	462.48
1991-92	477.76	91.04	46.96	8.96	524.73
1992-93	427.08	91.10	41.68	8.90	468.77
1993-94	494.22	92.58	39.56	7.42	533.79
1994-95	506.20	93.67	34.19	6.33	540.40
1995-96	537.38	96.00	22.36	4.00	559.74
1996-97	545.34	98.17	10.15	1.83	555.49
1997-98	576.23	98.56	8.35	1.44	584.59

Curative Expenditure

1. Medical Care

- (a) Hospital and Dispensaries: expenditure incurred on provision of curative care through hospitals, dispensaries, primary health centres, sub-centres etc.

- (b) **Employees State Insurance (ESI):** Expenditures incurred on provision of care for the organized sector employees through the employee's state insurance scheme.
- (c) **Direction and Administration:** expenditure incurred in the direction and administration of hospitals, medical colleges and other medical establishments.
- (d) **Others (Med):** includes expenditure on drug manufacture, medical stores and depot and miscellaneous expenses.

2. Medical Education

- (a) **Doctor and Nurses:** expenditure on medical education of doctor and nurses for allopathic and other systems of medicine.
- (b) **Public health Training:** expenditure in training of multi-purpose workers.
- (c) **Family planning Training:** expenditure in training for auxiliary nurse midwife (ANM) dais, Health Visitors and Community Health Guides related with the family planning programme.

Promotive and Preventive Services

1. Public Health Expenditure

- (a) **Diseases Control Programme:** expenditure incurred by the government on programmes for control of communicable and infectious diseases like malaria, tuberculosis, leprosy, diarrhea etc.
- (b) **Maternal and Child Health (MCH) services:** expenditure incurred for immunization of child and their mothers and also for the ante- natal and post-natal programmes.
- (c) **Others (PH):** expenditure on pollution control, public health laboratories, Minimum Needs Programme and other minor expenditure in the public health account.
- (d) **Direction and Administration:** expenditure incurred on direction and administration of various disease control programmes and other public health establishments. This refers mainly to public health bureaucracy at various government levels.

2. Family Welfare Service

- (a) Direction and Administration: expenditure incurred on direction and administration of family planning services.
- (b) Rural FP and Urban FP: expenditure incurred on provision of family planning services to rural and urban areas respectively.
- (c) Compensation: expenditure on compensation paid to motivators and acceptors of birth control devices.
- (d) Others (FP): includes grants-in-aid, transport, supplies and other minor expenditure in family planning account.

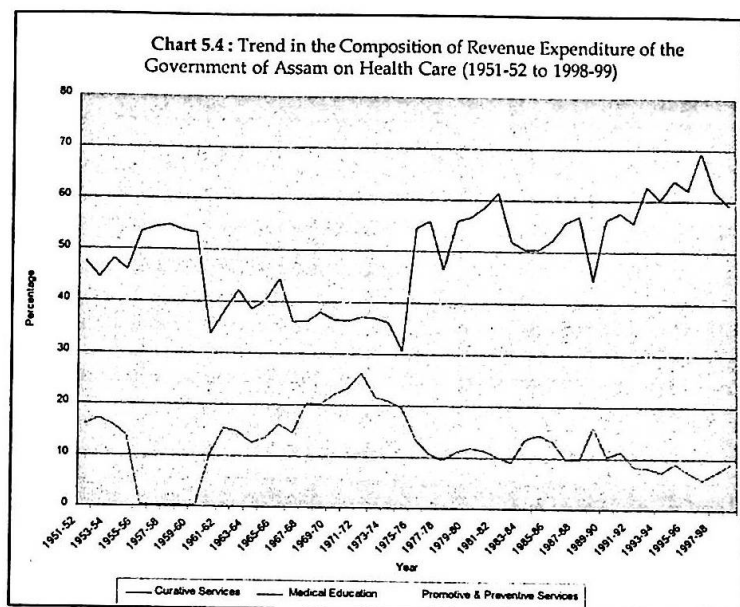
Trend in the Composition of the Revenue Expenditure of the Government of Assam in Health Care

The revenue expenditures of the government on health have three broad components viz., expenditures on curative care, promotive and preventive care, and medical education. Of the three components medical education in general has been getting the smallest share. The share shows declining trend in the post reform period. However, the share became more than 20 percent for a brief period from 1967-68 to 1974-75. This is the period in which three medical colleges namely, Assam Medical College (Dibrugarh), Guwahati Medical College and Silchar Medical College and nine nurse's training institutions started their production of doctors and nurses. So for the training of doctors and nurses the share of medical education expenditure increased to more than 20 percent curtailing the share of medical care expenditure.

Between the other two components the share of curative services shows greater fluctuation ranging between 30 to 70 percent over the whole period. But the share does not show any distinct upward or downward trend. The share of the other component namely, preventive and promotive services also show year-to-year fluctuations without any distinct upward or downward trend [Refer Table 5.3 and Chart-5.4].

Table 5.3 : Compositions of Revenue Expenditure of the Govt. of Assam on Health for the Period 1951-52 to 1998-99 (Current Prices)

Year	Curative Services		Medical Education		Promotive & Preventive Services		Total Revenue Exp. in Health Care	
	In Mill. Rs.	As % of Total	In Mill. Rs.	As % of Total	In Mill. Rs.	As % of Total	In mill. Rs.	As %
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1951-52	2.99	47.53	1.00	15.89	2.30	36.56	6.29	100
1952-53	3.45	44.45	1.33	17.13	2.98	38.40	7.76	100
1953-54	3.73	48.12	1.23	15.87	2.79	36.00	7.75	100
1954-55	4.13	46.04	1.25	13.93	3.59	40.02	8.97	100
1955-56	6.19	53.50	0.04	0.34	5.34	46.15	11.57	100
1956-57	8.13	54.34	0.04	0.26	6.94	45.38	15.29	100
1957-58	7.72	54.82	0.04	0.28	6.32	44.88	14.08	100
1958-59	9.98	53.82	0.05	0.26	8.51	45.90	18.54	100
1959-60	11.52	53.30	0.06	0.27	10.03	46.41	21.61	100
1960-61	10.14	33.67	3.10	10.29	16.87	56.02	30.11	100
1961-62	11.58	38.06	4.69	15.41	14.15	46.51	30.42	100
1962-63	13.06	42.21	4.55	14.70	13.33	43.08	30.94	100
1963-64	16.82	38.53	5.50	12.60	21.33	48.86	43.65	100
1964-65	17.04	40.20	5.71	13.47	19.63	46.31	42.38	100
1965-66	17.42	44.43	6.36	16.22	15.42	39.33	39.20	100
1966-67	21.16	36.12	8.49	14.49	28.20	48.14	58.57	100
1967-68	18.91	36.17	10.62	20.31	22.75	43.51	52.28	100
1968-69	22.43	38.00	11.89	20.14	24.70	41.85	59.02	100
1969-70	25.79	37.61	15.08	21.99	26.90	39.22	68.57	100
1970-71	30.07	36.36	19.24	23.27	33.37	40.36	82.68	100
1971-72	27.82	37.12	19.67	26.25	27.44	36.62	74.93	100
1972-73	32.18	36.93	18.83	21.61	36.11	41.44	87.13	100
1973-74	32.21	36.07	18.65	20.88	38.43	43.03	89.29	100
1974-75	32.77	30.61	20.91	19.53	53.36	49.85	107.04	100
1975-76	61.23	54.38	15.07	13.38	34.83	30.93	112.59	100
1976-77	72.58	55.83	13.90	10.69	41.10	31.62	129.98	100
1977-78	72.80	46.44	14.84	9.46	66.62	42.50	156.75	100
1978-79	90.17	55.88	17.95	11.12	50.21	31.12	161.34	100
1979-80	94.72	57.61	19.39	11.79	47.39	28.82	164.40	100
1980-81	108.14	58.63	20.87	11.31	52.42	28.42	184.44	100
1981-82	145.28	61.45	23.73	10.03	63.59	26.89	236.40	100
1982-83	140.63	51.95	24.72	9.13	101.69	37.57	270.66	100
1983-84	172.82	50.42	46.61	13.59	119.31	34.81	342.74	100
1984-85	214.48	50.51	61.47	14.47	138.88	32.70	424.61	100
1985-86	299.68	52.16	75.91	13.21	193.70	33.71	574.48	100
1986-87	383.74	55.67	66.70	9.67	238.87	34.66	689.31	100
1987-88	483.05	56.92	83.19	9.80	282.39	33.28	848.63	100
1988-89	422.93	44.45	152.01	15.98	376.49	39.57	951.43	100
1989-90	529.48	56.31	94.93	10.28	299.47	32.41	923.88	100
1990-91	635.65	57.62	124.56	11.29	342.88	31.08	1103.09	100
1991-92	789.86	55.61	118.90	8.37	511.49	36.01	1420.25	100
1992-93	855.92	62.73	111.48	8.17	397.02	29.10	1364.42	100
1993-94	1038.27	60.22	124.64	7.23	561.15	32.55	1724.06	100
1994-95	1229.64	63.99	173.34	9.02	518.49	26.99	1921.47	100
1995-96	1350.81	62.10	156.85	7.21	667.44	30.69	2175.10	100
1996-97	1580.06	69.46	134.09	5.89	560.87	24.65	2275.02	100
1997-98	1561.08	61.79	186.23	7.37	778.48	30.84	2526.79	100
1998-99	1367.93	59.17	207.59	8.97	736.32	31.84	2311.84	100



Composition of Revenue Expenditures on Medical Education:

A further classification of the expenditure on medical education [Table 5.4] shows that up to the year 1974-75, 100 percent money under medical education was spent only for the training of doctors and nurses under allopathic system of medicine. From 1974-75, the government of Assam implemented the other three schemes of training viz., 'public health training' for multi purpose workers, 'family planning training' for auxiliary nurse midwife (ANM), dais, village health guides etc., and training under 'other systems of medicine' like Ayurvedic and Homeopathy. Excluding the period from 1983-84 to 1988-89, average 80 percent of the total medical education expenditure annually is spent for training of doctors and nurses. The contradiction inherent are that majority of those qualifying from public financed medical schools practise in the private sector.

Over a period from 1983-84 to 1991-92 a special thrust was given for the family planning training cutting the allotment of expenditure for training of doctors and nurses. Excluding this period, the percentages of expenditure for public health training and family planing training are not

Table 5.4 : Composition of Revenue Expenditure on Medical Education of the Government of Assam From 1951-52 to 1998-99
(in Rs. Millions, Current Prices)

Year	Doctors % Nurses	% of Total	Public Health Training	% of Total	Family Planning Training	% of Total	Other Systems	% of Total	Others	Total Medical Edu- cation Expen- diture
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1951-52	1.00									1.00
1952-53	1.33									1.33
1953-54	1.23									1.23
1954-55	1.25									1.25
1955-56	0.04									0.04
1956-57	0.04									0.04
1957-58	0.04									0.04
1958-59	0.05									0.05
1959-60	0.06									0.06
1960-61	3.10									3.10
1961-62	4.69									4.69
1962-63	4.55									4.55
1963-64	5.50									5.50
1964-65	5.71									5.71
1965-66	6.36									6.36
1966-67	8.49									8.49
1967-68	10.62									10.62
1968-69	11.89									11.89
1969-70	15.08									15.08
1970-71	19.24									19.24
1971-72	19.67									19.67
1972-73	18.72	99.41			0.11					18.83
1973-74	18.43	98.82			0.22	1.18				18.65
1974-75	20.61	98.56			0.30	1.44				20.91
1975-76	12.65	83.94	0.90	5.97	0.43	2.85	1.09	7.23		15.07
1976-77	11.36	81.72	0.85	6.11	0.54	3.83	1.15	8.27		13.90
1977-78	11.26	75.87	0.85	5.72	0.54	3.63	2.19	14.75		14.84
1978-79	14.45	80.50	1.17	6.51	0.91	5.06	1.42	7.91		17.95
1979-80	14.63	75.45	0.98	5.05	1.99	10.26	1.79	9.23		19.39
1980-81	16.35	78.34	1.26	6.03	1.04	4.98	2.22	10.63		20.87
1981-82	18.81	79.26	1.30	5.47	1.15	4.84	2.47	10.40		23.73
1982-83	20.25	81.91	1.69	6.83	-	-	2.78	11.24		24.72
1983-84	25.72	55.18	2.18	4.67	14.85	31.86	3.86	8.28		46.61
1984-85	33.21	54.02	2.49	4.05	21.37	34.76	4.40	7.15		61.47
1985-86	36.70	48.34	3.00	3.95	31.05	40.90	5.16	6.79		75.91
1986-87	42.48	63.68	0.03	0.04	24.19	36.26	0.00	0.00		66.70
1987-88	57.03	68.55	3.59	4.31	18.10	21.75	3.65	4.38	0.82	83.19
1988-89	103.84	68.31	3.86	2.53	39.73	26.13	4.13	2.71	0.45	152.01
1989-90	66.88	70.45	3.78	3.98	19.98	21.04	4.08	4.29	0.21	94.93
1990-91	85.10	68.32	5.29	4.24	26.90	21.59	5.67	4.55	1.60	124.56
1991-92	85.25	71.69	8.50	7.14	21.29	17.90	3.60	3.02	0.26	118.90
1992-93	88.59	79.46	5.94	5.32	10.69	9.58	6.08	5.45	0.18	111.48
1993-94	91.11	73.09	13.19	10.58	15.01	12.04	2.87	2.30	2.46	124.64
1994-95	128.92	74.37	24.34	14.04	12.06	6.95	5.59	3.22	2.43	173.34
1995-96	130.88	83.44	6.99	4.05	12.21	7.78	6.77	4.31	0.00	156.85
1996-97	99.45	74.16	10.98	8.18	9.92	7.39	6.14	4.58	7.59	134.09
1997-98	152.29	81.77	16.67	8.95	16.40	8.80			0.87	186.23
1998-99	165.48	79.71	11.36	5.47	21.29	10.25	9.18	4.42	0.28	207.59

encouraging. Obviously it has some negative impact in case of delivery of primary health care among the rural masses, as multipurpose workers, village health guides and the auxiliary nurse midwives play some important role in delivery of primary health care. The draft 8th five year plan (Planning and Development, Government of Assam) commented that main reason of the decreasing trend of expenditure for public health and family planning is the improper implementation of 'multi-purpose worker' and 'village health guide' schemes due to some administrative difficulties.

Composition of Revenue Expenditures on Curative Care

In the Table 5.5 total curative care expenditure has been classified among its components. The table shows that the revenue expenditure under 'hospital and dispensary' occupies the major share among the components of curative care. However, during the post reform period the expenditure under 'hospital and dispensary' decreased with some year-to-year fluctuation. The squeezed expenditure specially streamed to the 'direction and administration' cost of health bureaucracy.

The 'other medical' account is an important component of curative care covering drug manufacture, medical store and depot, chemical examiner, miscellaneous and other minor expenses. Excluding two periods from 1955-60 and 1992-95, the public sector revenue expenditure under 'other medical' account, either in percentage of total expenditure or in nominal terms becoming very insignificant. The data of the expenditure incurred on provision of care for the organized sector employees through 'employee's state insurance (ESI)' scheme are available only from 1975-76. The annual share of expenditure through ESI scheme to total curative care expenditure was around 4 percent before 1990. After 1990, the share decreased to around 2 percent.

The significant point to be considered is that in absolute terms the trend in revenue expenditure on curative care has not kept pace with the expansion of the network of health care centres. For example, total number of health care institutions (i.e., hospitals, dispensaries, primary health centres etc.) which increased more than 300 percent (e.g., total

Table 5.5 : Compositions of Revenue Expenditure on Curative Care Services of the Government of Assam from 1951-52 to 1998-99 (in Million Rs.).

Year	Hospital and Dispensaries		Insurance		Other Med.		Direction & Administration Current Prices	OSM	TSP	Total Curative Care	Percentage
	Current Prices	% of Total	Current prices	% of Total	Current Prices	% of Total					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1951-52	2.46	82.27			0.02	0.66	0.51			2.99	100
1952-53	2.92	84.63			0.02	0.57	0.51			3.45	100
1953-54	3.23	86.59			0.01	0.56	0.49			3.73	100
1954-55	3.60	87.16			0.04	0.96	0.49			4.13	100
1955-56	2.85	46.04			2.84	45.88	0.50			6.19	100
1956-57	3.64	43.80			4.11	49.45	0.56			8.31	100
1957-58	3.21	41.58			3.96	51.29	0.55			7.72	100
1958-59	3.83	38.37			5.51	55.21	0.64			9.98	100
1959-60	3.54	30.72			7.26	63.02	0.72			11.52	100
1960-61	9.02	88.95			0.11	1.08	0.90			10.14	100
1961-62	10.53	90.93			0.04	0.34	0.87			11.58	100
1962-63	11.67	89.35			0.28	2.14	0.89			13.06	100
1963-64	15.82	94.05			0.12	0.71	0.88			16.82	100
1964-65	15.95	93.60			0.14	0.82	0.95			17.04	100
1965-66	15.63	89.72			0.28	1.60	0.99			17.42	100
1966-67	19.80	93.57			0.25	1.18	1.10			21.16	100
1967-68	17.55	92.80			0.17	0.89	1.19			18.91	100
1968-69	20.64	92.01			0.18	0.80	1.61			22.43	100
1969-70	23.39	90.69			0.40	1.55	2.00			25.79	100
1970-71	27.55	91.61			0.29	0.96	2.23			30.07	100
1971-72	25.51	91.69			0.48	1.72	1.83			27.82	100
1972-73	29.62	92.04			0.32	0.91	2.24			32.18	100
1973-74	30.81	95.65			0.08	0.24	1.32			32.21	100
1974-75	31.08	94.84			0.26	0.79	1.43			32.77	100
1975-76	55.55	90.72	2.92	4.76	0.89	1.45	1.87			61.23	100
1976-77	66.20	91.20	3.17	4.36	1.23	1.69	1.98			72.58	100
1977-78	50.07	68.77	3.03	4.16	1.24	1.70	18.46			72.88	100
1978-79	82.30	91.27	4.67	5.17	0.76	0.84	2.44			90.17	100
1979-80	84.51	89.22	4.59	4.84	3.33	3.51	2.29			94.72	100
1980-81	99.36	91.88	5.13	4.74	1.20	1.10	2.45			108.28	100
1981-82	135.64	93.36	5.56	3.82	1.13	0.77	2.95			145.28	100
1982-83	129.89	92.36	6.17	4.38	1.20	0.85	3.37			140.63	100
1983-84	155.79	90.14	8.23	4.72	4.65	2.69	4.15			172.82	100
1984-85	198.21	92.41	9.64	4.49	1.65	0.76	4.98			214.48	100
1985-86	282.57	94.29	9.65	3.22	1.70	0.56	5.76			299.68	100
1986-87	352.50	91.87	6.62	1.73	9.46	2.46	8.74	6.34		383.74	100
1987-88	424.07	87.79	14.07	2.91	20.99	4.35	9.66	7.73	5.90	483.05	100
1988-89	366.10	86.56	9.93	2.34	20.97	4.96	12.96	7.12	5.85	422.93	100
1989-90	468.39	88.46	15.91	3.00	19.62	3.70	13.37	7.20	4.99	529.48	100
1990-91	550.57	86.61	14.08	2.21	28.59	4.49	18.83	10.92	12.66	635.65	100
1991-92	648.77	82.13	14.24	1.80	58.43	7.39	30.52	25.00	12.90	789.86	100
1992-93	556.81	65.05	24.74	2.89	211.14	24.67	30.46	13.93	18.80	855.92	100
1993-94	675.58	65.06	28.25	2.72	251.36	24.20	31.25	20.40	31.43	1038.27	100
1994-95	907.94	73.83	25.60	2.08	234.75	19.09	35.00	22.82	3.53	1229.64	100
1995-96	1107.60	81.99	28.48	2.11	133.70	9.89	38.21	22.97	19.85	1350.81	100
1996-97	1386.12	87.72	27.55	1.74	82.22	5.20	37.94	25.33	20.90	1580.06	100
1997-98	1009.02	64.63	31.88	2.04	388.76	24.86	60.77	32.80	38.45	1561.08	100
1998-99	1105.54	80.81	55.40	4.04	82.39	6.02	48.73	29.42	46.45	1367.93	100

number of health institutions which was 1544 in 1974-75 increased to 6317 in 1993-94), whereas, the revenue expenditure for the provision of curative care through these institutions increased less than 200 percent in real terms. The implications of this may be that - (i) although today there are more centres for distribution of public sector health care, the average amount of services flowing out from each such centre is less; (ii) the unfulfilled excess demand for medicine and other consumables by the increased health care institutions might have been helping development of private medical care and increasing dependence on market forces.

Composition of Revenue Expenditures on Promotive and Preventive Care

Table 5.6 shows the relative share of expenditures for the components of promotive and preventive services. Among the components of promotive and preventive care, 'disease control programme' is considered as an important one, which generally covers the national programmes for eradicating/controlling diseases like malaria, filaria and tuberculosis etc., with 50% central assistance and also for controlling diseases like leprosy, goitre, blindness etc., with 100% central assistance. From 1975-76, the 'disease control programme' attracted considerable attention from the government. Also from 1972-73 the government started 'maternal and child health' service scheme (under which the pregnant mothers and their child are immunised). Increased government spending on 'disease control programme' and 'maternal and child health' services since the mid 1970s seems to have had a positive impact reflected in a sharp decline in death rate in general and infant mortality rate in particular during the 1980s. The increased allocation of government expenditure to 'rural family planning programme' since the same point of time might also have had some impact, although the birth rate in the state declined relatively slowly from 34.8 per thousand of population in 1981-82 to 31.2 in 1991-92.

Trend in Government Expenditure on Rural Primary Health Care in Assam

(a) The Trends in Current Prices

Government expenditure on rural primary health care and

[illegible]

its various components in Assam for the period from 1983-84 to 1998-99 are presented in Table-5.7. Since the figures are in current prices the apparent increase in expenditure does not necessarily reflect the actual increase or the increase in real terms. But it is interesting to observe the trend in expenditure on rural primary health care as a percentage of total government expenditure [Refer column 9, Table-5.7].

Table 5.7 : Trends and Compositions of Government Expenditure on Rural Primary Health Care in Assam from 1983-84 to 1998-99 at Current Prices. (in Million Rs.)

Year	Rural Health Service			Disease Control Pro-gramme	Maternal & Child Health	Public Health Training	Family Planning Training	Total Col. 4 to 8
	Revenue	Capital	Total					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1983-84	83.22	24.80	108.02 (63.32)	42.56 (24.94)	4.33 (2.58)	2.18 (1.27)	13.51 (7.91)	170.60 (2.97)
1984-85	135.42	32.52	167.94 (69.40)	45.79 (18.92)	3.82 (1.57)	2.49 (1.02)	19.44 (8.03)	241.97 (3.04)
1985-86	99.22	49.61	148.83 (57.70)	71.66 (27.78)	4.92 (1.90)	3.00 (1.16)	29.49 (11.43)	257.90 (2.64)
1986-87	123.17	50.00	173.17 (63.86)	63.84 (23.54)	11.14 (4.10)	0.03 (0.01)	22.98 (8.47)	271.16 (1.99)
1987-88	198.46	52.00	250.46 (67.50)	88.33 (23.80)	11.27 (3.03)	3.59 (0.96)	17.37 (4.68)	371.02 (2.37)
1988-89	152.47	57.82	210.29 (57.91)	83.61 (23.02)	26.81 (7.38)	3.86 (1.06)	38.53 (10.61)	363.10 (2.17)
1989-90	199.38	86.24	285.62 (72.65)	68.31 (17.37)	15.83 (4.02)	3.78 (0.96)	19.58 (4.98)	393.12 (2.04)
1990-91	241.61	83.49	325.10 (68.92)	104.69 (22.19)	10.47 (2.21)	5.29 (1.12)	26.09 (5.53)	526.09 (2.17)
1991-92	205.48	69.61	275.09 (52.28)	159.62 (30.34)	62.23 (11.82)	8.50 (1.61)	20.65 (3.92)	526.09 (2.16)
1992-93	237.39	55.80	293.19 (65.79)	123.63 (27.74)	12.59 (2.82)	5.94 (1.33)	10.26 (2.30)	445.61 (1.65)
1993-94	256.64	31.87	288.51 (53.81)	133.96 (24.98)	84.94 (15.84)	13.19 (2.46)	14.55 (2.71)	536.15 (1.69)
1994-95	376.74	85.71	462.45 (67.84)	166.59 (24.43)	16.59 (2.43)	24.34 (3.57)	11.69 (1.71)	681.66 (1.92)
1995-96	549.36	45.83	596.19 (64.32)	202.31 (21.86)	108.77 (11.75)	6.99 (0.75)	11.96 (1.29)	925.22 (2.38)
1996-97	574.91	4.45	579.36 (73.31)	165.97 (21.00)	24.46 (3.09)	10.76 (1.36)	9.71 (1.22)	790.26 (2.07)
1997-98	484.15	4.34	488.49 (58.43)	289.85 (34.67)	25.19 (3.01)	16.33 (1.95)	16.07 (1.92)	835.93 (1.91)
1998-99	548.49	16.68	565.17 (67.43)	220.32 (26.28)	21.03 (2.50)	11.02 (1.31)	20.65 (2.46)	838.19 (1.75)

Figures in () indicate percentage expenditure out of total expenditure on rural primary health care.

Figures in [] indicate percentage share of expenditure on rural primary health care in total government expenditure.

Though this percentage varies from year to year there are some indications of a declining trend over the reference period 1983-84 to 1998-99.

As for the composition of expenditure on rural primary health care the 'rural health service' gets the major share. Disease control programme also receives a substantial part of the expenditure. The other three components viz., 'maternal and child health', 'public health training' and 'family planning training' are obviously the minor components of rural primary health care in-so-far-as allocation of government expenditure is concerned. Within rural health service, there was a steady increase in capital expenditure during the 1980s, which contributed to expansion of physical facilities and the network of health centres for delivering health care in the rural areas of the state. But in the post reform years the capital expenditure component has declined sharply even in nominal terms. Accordingly the expansion of physical facilities for wider coverage of population under government's rural health service has virtually come to a stop in the post reform period.

(b) The Trends in Real Terms

To observe the trends in government expenditure on rural primary health care in real terms, it was necessary to express the expenditure series in constant prices¹. The total and per capita expenditures on rural primary health care deflated to 1980-81 prices are shown in Table-5.8. Both the total and per capita figures show wide year-to-year fluctuations. But on the whole the total expenditure grew at a modest average annual compound rate of 2.65 percent over the entire period from 1983-84 to 1997-98. The growth rate in per capita term however was practically negligible at 0.60 percent. Further analysis² revealed a significant slow down in the growth of both total and per capita real government expenditure on rural primary health care in the post reform period.

(c) Urban Bias

Apart from the trends in government expenditure on rural primary health care itself, a possible bias in the distribution of total government expenditure on primary health care between the rural and urban areas is also a matter of interest

Table 5.8 : Trend in Government Expenditure on Rural Primary Health Care in Assam from 1983-84 to 1997-98 at 1980-81 prices

<i>Year</i>	<i>Total Expenditure on Rural Primary Health Care (in Mill. Rs.)</i>	<i>Annual Growth Rate (as Percentage)</i>	<i>Per capita Exp. on Rural Primary Health Care (in Rs.)</i>	<i>Annual Growth Rate (as Percentage)</i>
(1)	(2)	(3)	(4)	(5)
1983-84	118.67		6.92	
1984-85	144.07	21.40	8.25	19.21
1985-86	149.10	3.49	8.36	1.33
1986-87	140.65	-5.67	7.72	-7.65
1987-88	178.00	26.55	9.56	23.83
1988-89	163.87	-7.93	8.60	-10.04
1989-90	160.16	-2.26	8.21	-4.53
1990-91	170.09	6.20	8.52	3.77
1991-92	176.97	4.04	8.85	3.87
1992-93	139.48	-21.18	6.51	-26.44
1993-94	153.69	10.18	7.02	7.83
1994-95	179.58	16.84	8.42	19.94
1995-96	228.58	27.28	10.57	25.53
1996-97	189.43	-17.12	8.53	-19.29
1997-98	190.63	0.63	8.42	-1.28
1983-84 to 1997-98		2.65		0.60

The expenditure for 1998-99 could not be converted to real terms in 1980-81 prices due to not availability of suitable and comparable deflator.

in this context. Accordingly a comparison of per capita government expenditure on rural primary health care with the per capita government expenditure on primary health care for the state as a whole was attempted. But in doing so there was a problem of estimating the overall government expenditure on primary health care. The problem originated from the fact that most government hospitals in urban areas cater not only primary health care but also secondary and tertiary care. Apportioning government spending on these hospitals between delivery of primary health care and delivery of secondary and tertiary care could not be achieved. Hence it was also not possible to exactly identify total government expenditure on primary health care for the state as a whole. To side step the problem two alternative series have been

worked out. In one of them government expenditure on urban hospitals has not been included. Since this series would leave out that portion of government expenditure on primary health care, which is delivered through urban hospitals and dispensaries, this series would under-estimate government expenditure on primary health care. The other series includes the component of government expenditure on urban hospitals. This series over-estimates total government expenditure on primary health care but can be used as the upper limit for overall government expenditure on primary health care. In this way, upper and lower limits, within which overall government expenditure on primary health care would lie, have been ascertained. As shown in Table-5.9 and also in Chart-5.5, the time series of per capita government expenditure on rural primary health care lies closer to the lower limit of overall per capita government expenditure on primary health care. In all probability, the actual series of overall per capita expenditure on primary health care will lie above the series of the lower limits. Hence it can be argued that the overall per capita expenditure on primary health care has been higher than the per capita expenditure on rural primary health care. The per capita expenditure on urban primary health care therefore must have been higher than per capita expenditure on rural primary health care. In other

Chart 5.5 : Per Capita Government Expenditure on Primary Health Care in Assam

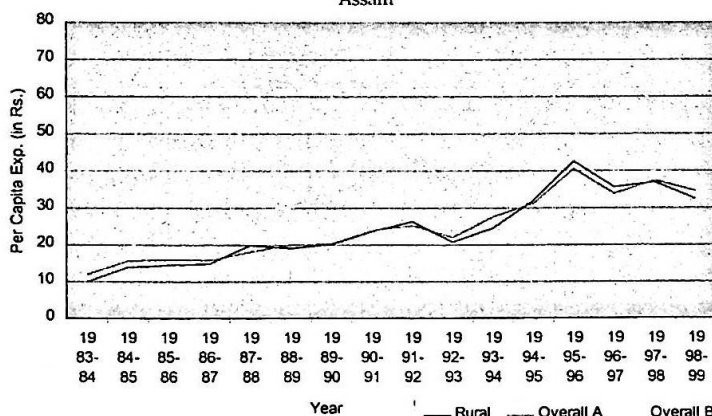


Table 5.9 : Trend in Per Capita Government Expenditure on Primary Health Care by the Government of Assam from 1983-84 to 1998-99.

Year	Per Capita Government Expenditure on Primary Health Care in Rs. in Current Prices		
	Rural	Overall A	Overall B
(1)	(2)	(3)	(4)
1983-84	8.97	11.93	15.75
1984-85	12.97	15.66	18.89
1985-86	13.02	16.05	26.30
1986-87	13.40	15.70	27.04
1987-88	17.94	18.20	29.11
1988-89	17.16	20.04	30.14
1989-90	18.15	20.31	32.68
1990-91	21.26	23.93	37.86
1991-92	23.17	25.26	44.79
1992-93	19.19	22.03	35.72
1993-94	22.60	27.50	45.08
1994-95	28.13	31.15	53.07
1995-96	37.41	40.50	66.24
1996-97	31.30	33.91	66.98
1997-98	32.50	37.37	58.37
1998-99	32.40	34.59	56.15

Note: Overall A excludes expenditure on Urban Hospital & Dispensary.
Overall B includes expenditure on Urban Hospital & Dispensary.

words, there has been some urban bias in the allocation of government expenditure on primary health care between the rural and urban populations.

Conclusion

A significant point, which emerges from the above exercise is that the share of health sector in the allocation of expenditure of the Government of Assam has been showing a declining trend since the late 1980s. The per capita real government expenditure on health also shows a declining trend around the same period. It seems that in face of financial hardship that the Government of Assam has been facing since 1986-87, the expenditure on health sector has been squeezed more than the other sectors. The ratio of government expenditure on health to NSDP is remaining above 1 percent, however, this ratio falls short of the 5

percent mark recommended by the World Bank for significant impact on health of the masses.

As far trends in composition of state government expenditure on health there was a spurt on the capital expenditure between mid 1970s and late 1980s, which resulted in expansion of health care infrastructure especially in rural areas during the period. On the other hand, in the face of declining allocation of public expenditure on health since the late 1980s the axe has fallen mostly on capital expenditure.

The exercise also reveals that the share of total government expenditure going to rural primary health care had a long term declining trend over the last two decades of the 20th century. In absolute terms at constant prices the government expenditure on rural primary health care registered a modest trend growth rate of 2.65 percent per year. In per capita terms the growth rate was merely 0.6 percent. Moreover there are evidences of growth of the expenditure in both total and per capita term slowing down in the post reform period. These trends thus indicate no major step up in the governmental effort to make the critical service of primary health care available to rural population in the state. Indeed, the sharp decline in capital expenditure on the rural health service in the post reform years implies drastic slashing of public investment on physical facilities for delivering rural health care. Clearly rural primary health care is one of the sectors that have been made to bear brunt of the state's growing fiscal hardship.

* * *

The analysis of secondary data on health expenditure presented in the above pages was useful for obtaining the general picture of trends in the volume of public expenditure on health care and the components of the same. But several pertinent questions regarding the effectiveness of the expenditure made by the government on account of the health sector remain unanswered in such macro studies. Hence, micro level field study became necessary to fulfill the remaining objectives of our study. However, to evaluate the findings of our field study in the proper perspective it will be helpful to gather an idea of the existing system of health

administration and the set up of rural health service network in the state. 'Administration and Delivery of Primary Health Care in Assam' and 'The Existing Physical Infrastructure and the Human Resource Involved in the Delivery of Health Care in Assam' are respectively the themes of the next two Chapters.

REFERENCES

- Government of Assam (1991), *Review of 7th Five-Year Plan, Planning and Development*, Government of Assam.
- World Bank (1993), *World Development Report - Investing in Health*, Oxford University Press, Oxford.

NOTE

1. For analyzing the trend in real government expenditure on health care it was necessary to convert expenditure series in current prices to a series in constant prices. However obtaining an appropriate deflator series for this purpose was difficult. Two alternative deflators have been tried. One is the NSDP deflator with which Net-State Domestic Product (NSDP) OF Assam at current prices are expressed as NSDP at 1980-81 prices. The NSDP deflator is strictly not appropriate for the purpose. In search of more appropriateness the deflator used by the Directorate of Economics and Statistics, Govt. Of Assam for converting contributions of 'public administration' sector to NSDP from current prices to constant prices has also been tried. However since the results obtained from the use of the two alternative deflator series did not differ much, the NSDP deflator was persisted with.
2. To find whether there has been acceleration or deceleration in the growth rate in the post reform period, a semi-log trend equation with an additional dummy variable that takes the value '0' for the years up to 1991-92 and '1' for years from 1992-93 onwards was fitted to the series of both total and per capita government expenditure on rural primary health care at 1980-81 prices. The estimated regression model is,

$$\ln Y = a + b.T + c.D + U$$

Y Variables	Estimated a	Estimated b	Estimated c	R ²
Government Expenditure on Rural Primary Health Care	4.8080 (72.600)***	0.0466 (4.075)***	-0.2083 (-2.068)*	0.6636
Per Capita Govt. Expenditure on Rural Primary Health Care	1.9746 (27.129)***	0.0284 (2.263)**	-0.2322 (-2.097)**	0.3034

Figures within parentheses are t values

*, ** and *** indicate significance at 0.10, 0.05 and 0.01 levels respectively.

Where T takes the values 1 to 15 for years from 1983-83 to 1997-98 and D takes the value '0' for years from 1983-84 to 1991-92 and '1' for

the years from 1992-93 to 1997-98. In the model 'b' measures the exponential growth rate in Y for the period 1983-84 to 1991-92 and 'c' is the increase in the growth rate in the period 1992-93 to 1997-98 over that of 1983-84 to 1991-92. The results are presented above.

The negative and significant estimated values of 'c' indicate that there has been a slow down in the growth of real government expenditure on rural primary health care in Assam in the post reform period.

ADMINISTRATION AND DELIVERY OF PRIMARY HEALTH CARE

Health Administration in Assam

The state health sector is comprised with the state Ministry of Health and a Directorate of Health Services. The state ministry is headed by a Minister of Health and Family Welfare. The Secretariat is the official organ of the Ministry of Health and Welfare and headed by a secretary, who is assisted by one or more additional / joint secretaries, a number of deputy secretaries, under secretaries and other subordinate staff. The Secretariat is responsible for the key functions of policy formulation, planning personnel and financial administration. The actual deployment of health service by the state government is organized in a three-tier system. At the top is the Directorate of Health Services (DHS), followed by the office of Joint Director of Health Services at the district level. And, at the grass-root level is Sub Divisional Medical and Health Officer (SDM & HO) of the block primary health care or community health centres.

The Directorate of Health and Family Welfare is headed by the Director. The Directorate of Health Services (DHS) renders technical advice to the government on all medical and public health matters and in the implementation of various national and state health programmes including family welfare and maternal and child health (MCH) services in the state. The functions of the Directorate of Health Services are divided into two categories –(I) general and

(II) family welfare. In case of general functions the Director is assisted by four Additional Directors and a team of Joint Directors. The Joint Directors have to control the state head quarters in case of implementation of national health care programmes like eradication of leprosy, tuberculosis, malaria, mother and child health programme and control of blindness etc. At the district level organization for health services Joint Director is the overall controlling officer of all the state finances and health activities. He is responsible for planning, execution, monitoring and evaluation of all health programmes in the district. Also there are one or more Chief Medical & Health Officer etc., at the district level. At the primary health centre level, administrative position of the Sub Divisional Medical & Health Officer and his staff has been brought under the administrative control of the Directorate of Health and Family Welfare Services through the district health officers.

The functions of family welfare services have been taken under the control of Joint Director (Universal Immunization Programme). At the district level one additional Chief Medical & Health Officer (FW) bears the responsibility.

DHS	
General	Family Welfare
Additional DHS(4)	UIP Joint DHS Principal, Training Centre
Joint DHS (Dist-HQ/HQ) → Leprosy (23) TB Eye Malaria MCH	
CM & HO (C.D) Superintendent, District Hospital Additional CM & HO (FW) District Leprosy Officer SDM & HO	

Delivery of Health Care under the Public Sector

For delivering the health care services to the people, health care is organized at various levels- central level, intermediate level and primary level.

The central level institutions viz., regional hospitals,

medical college hospitals, specialized hospitals not only provide highly specialized care, but also sustain primary health care as part of a comprehensive national health system. This tier is usually located in urban areas.

At the intermediate level, more complex problems compared to primary health care are dealt with. The sub divisional and district hospitals usually constitute this second level. They provide support to the primary health care institutions.

The primary level is the point of contact between individuals and the health system, where primary health care is delivered. The primary health centres and mini primary health centres including their sub centres located almost entirely in rural areas constitute this level of care in Assam.

Delivery System of Primary Health Care under the Public Sector in Rural Areas of Assam

In Assam, the primary level is again organized under three slabs. At the top, under a community development block, one full fledged primary health centre (Block PHC) covering a maximum 1 lac population is established. At the second slab, some dispensaries and 1/2/3 (depending upon the size of the block) mini-PHCs are available and at the bottom a network of sub-centres, each serving a population of 5000 (in case of general people) and 3000 in case of tribal /schedule caste / schedule tribe population, have been established.

In all India pattern, a block PHC is to be led by Senior Medical & Health Officer. But in Assam, following a 37 days strike of in service doctors in 1991, 400 posts of SDM & HO were created from existing Medical and Health Officer -I posts. This led to posting of SDM & HO in charge of a primary health centre. Over and above the in-charge SDM & HO, two senior Medical and Health Officer - I and one or more Indian System of Medicine doctors (Ayurvedic/Homeopathic) have to share the responsibility for the curative, preventive and pro-motive health functions in the jurisdiction of the health centres.

The block PHCs are also equipped with the following medical/para-medical personnel:

- (a) A group of nurses (Auxiliary Nurse Midwives) helping the medical officers in delivery of health services and family welfare activities.
- (b) The Pharmacist helps the medical officers in running the out patient clinic by distributing drugs and other medicines to the patients. He also maintains the stock register of medicines etc.
- (c) One Senior Malaria Inspector and one Malaria Inspector supervise the activities of a group of surveillance workers.
- (d) One non-Medical Assistant (NMA) for surveillance, education and treatment of the leprosy patients.
- (e) Sanitary Inspector / Rural Health Inspector and Vaccinator for public health activities.
- (f) Block Extension Educator (BEE, FW) assists the medical officers by securing coordination among the family welfare personnel and keeps records of the service delivered by the PHC.
- (g) Laboratory Technician conducts the blood tests and other technical work entrusted by the medical officers.
- (h) Lower Divisional Computer responsible for compiling vital statistics and maintaining other records.

In the second slab, the dispensaries are equipped with one Medical & Health Officer -I (allopathic), one pharmacist, one auxiliary nurse midwife and one grade-IV worker. After 6th five-year plan the old dispensaries have been upgraded to mini-PHCs phase-wise in annual plans. Over and above the above mentioned staff, the mini-PHCs have the additional 1 or 2 Medical & Health Officer - I (Allopathic, Ayurvedic or Homeopathic), one lower divisional assistant, one health educator and one laboratory technician. The senior most of the doctors is designated as the in-charge of the mini-PHC.

At the bottom level, sub centres are manned by an auxiliary nurse midwife (ANM) and one female health worker providing maternal & child health (MCH) and family welfare services to women and under five infants including immunization within the sub-centre area. Most of the sub-centres are under Directorate of Health Services (FW).

The ANM of the sub-centre has the additional duty to educate the local people about nutrition and health hazards, while helping and educating the local dais for conduct of deliveries. The surveillance workers for the various national programmes like control of malaria, leprosy, tuberculosis etc., and the ANMs, all are called multi-purpose workers (MPW). The Government of India supplies the kits to be used by the multi-purpose workers.

Apart from the multi-purpose workers, the delivery system of primary health service also involves the health guides (female) and anganwadi workers (AWW) etc. Under the Integrated Child Development Service Scheme, the anganwadi workers are to prepare and distribute the food supplement daily in the anganwadi centre located in the village, providing each child with 300 KCL and pregnant / lactating woman and severely malnourished children with 500 KCLs. The anganwadi workers are also supposed to help the local multi purpose workers in organization of immunization sessions.

The multi purpose supervisors are to report general medical and health problems of the area under their jurisdiction to the primary health centre regularly.

During the sixth plan period an additional component to the public sector rural health delivery system was added in the form of thirty bedded rural hospital. Referred to as community health centre (CHC), these hospitals are supposed to function as second level referral unit for the treatment of medicine, gynaecology, surgery and pediatrics. Each community health centre was expected to function as a treatment centre covering one lac population within a community development block. In Assam in many blocks, the community health centre is merged with the block primary health centre. Of course in some blocks, it is the separate establishment with 6 Medical & Health Officer-I and equipped with laboratory technician and X- ray machine. Out of 6 Medical & Health Officer -I, 1 is deputy superintendent / SDM & HO, 1 is senior Medical & Health Officer and 4 are Medical & Health Officer -I.

For a bird's eye view the public sector rural health care delivery system is outlined in the following Chart.

Chart 6.1 : Public Sector Rural Health Care delivery System

- (a) Sub-centre
- (b) Mini-PHCs / Dispensary
- (c) Block PHC / CHC

(a) Sub-Centre

Population coverage → 5000 in general / plain area
3000 in tribal/hilly/SC/ST area

Staff → Auxiliary Nurse Midwife and Female Health Worker.

(b) Dispensary

Staff → Medical & Health Officer -I → 1
Pharmacist → 1
Auxiliary Nurse Midwife
Grade -IV

Additional staff in mini-PHC

Medical & Health Officer -I → 1
Health Educator
Laboratory Technician
Lower Divisional Assistant

(c) Block PHC -(coverage is of 1 lac population)

Staff → SDM & HO - in-charge
Senior Medical & Health Officer -I → 2
Medical & Health Officer -I → more than 2
Including ISM doctors (Ayurvedic/
Homeopathic)

Other Staff → Malaria - Senior Malaria Inspector

Malaria Inspector
Surveillance Workers

Leprosy - 1 NMA

Public Health - Sanitary Inspector /
Rural Health

Inspector Vaccinator

Block Extension Educator (BEE, F.W.)

Computer etc.

(d) CHC Treatment Centre

Deputy Superintendent / SDM & HO

Sr. M&HO-I→1

6 doctors (Gn/

M & HO -I à 4

Pad/Med/Sur)

Laboratory Technician/ X - Ray Machine.

Health Care Programmes Run by the Primary Health Centres

It is a widely acknowledged fact that factors like lack of potable drinking water, inadequate sanitation and sewage system, mal-nutrition and educational backwardness are having a telling effect on the state of health of the people living in rural areas. In Assam, the recurring problems of flood and water logging add to these factors to vitiate the problem of health of the rural masses. Gastrointestinal ailment and other water borne diseases often take here an epidemic form especially in the monsoon season. Moreover, in many parts of the state diseases like malaria, iodine deficiency syndrome etc., are endemic. Such features of the health care problem in rural areas calls for special programmes apart from usual health care services provided by the public enterprise sector. Some such important programmes that has been implemented by the Government of Assam with financial support are the following:

- (1) Child Survival and Safe Motherhood Programme (CSSM).
- (2) National Malaria Eradication Programme (NMEP).
- (3) National Leprosy Control Programme (NLCP). Now this programme has been changed to Modified Leprosy Eradication Programme.
- (4) National Tuberculosis Control Programme (NTP).
- (5) Iodine Deficiency Disease Control Programme.
- (6) Reproductive Child Health Programme (RCH).
- (7) Blindness Control Programme.

The state government implements special health care programmes through its network rural health delivery system comprised of the primary health centres, mini primary health centres, dispensaries and sub centres.

A brief outline of these programmes is presented in Chart 6.1.

Child Survival and Safe Motherhood Programme

The Child Survival and Safe Motherhood Programme had been started in the state in August 1992, in a phased manner, where, immunization, oral rehydration therapy, vitamin A prophylaxis scheme and essential obstetric care at the

Table 6.1 : An Outline of the Special Health Care Programmes Being Implemented in Rural Areas of Assam

<i>Programmes</i>	<i>Strategy</i>	<i>Diseases</i>	<i>Target Group</i>
Child Survival & Safe Motherhood Programme (CSSM)	Immunization	Polio Whooping Cough Tetanus Diphtheria TB Measles /Small Pox	Children
	Immunization	TT	Mothers + Children
	Iron Tab	Anemia	
	ORS Packet	Diarrhea Gastroenteritis	Affected Person
	Vitamin A	Blindness Control ARI Control Prog.	Children Children

• Detail of the Programmes are discussed below:

community level are being implemented in all districts through primary health centres. Under immunization, children soon after birth have to be administered the triple vaccination against whooping cough, tetanus and diphtheria, popularly known as Triple Antigen. Starting with Triple Antigen the immunization is extended to TB and measles. All children below five years of age are immunized under this programme. Each and every PHC with the help of health service network under it (like dispensary, mini-PHC and sub-centres etc.) provide immunization and mother care through immunization camps and health education training camps.

About 85 percent polio cases occur in children under three years of age that contributes to disability of the children. On May 13, 1988, the World Health Assembly adopted the programme 'global polio eradication by 2000 AD'. The slogan of WHO in 1995 'target 2000 a world without polio' is well reflected in the national policy of the Government of India. All children from birth to 5 years of age are covered through National Pulse Polio Immunization Programme. The vaccination is done on a single day and simultaneously in a large geographic area so that wild virus polio does not get any foothold on to the intestine of children. This strategy is called 'pulse polio immunization'. This is done over and above the usual routine immunization under 'universal immunization programme' with 5 doses of OVP from birth to 5 years of age. Standard case management of diarrhea in

children is one of the major interventions under the 'child survival and safe motherhood programme' for the reduction in infant and child mortality rate. The consequence of diarrhea is death dehydration and mal-nutrition. So to get rid of diarrhea and to combat dehydration ORS packets (NF) are distributed at free of cost at different health institutions as well as ORS packet is selling at subsidized rate from UNICEF through ORT depot as well as through health training 'home available fluid (HAF)' are promoted.

Under 'child survival and safe motherhood programme', vitamin A is also supplied to children between 9 months to 3 years of age at 6 monthly intervals, as the prevalence of vitamin A deficiency associated blindness is seen to be maximum between 6 months to 3 years. For the safe motherhood, the pregnant mothers are immunized against tetanus (two doses of TT vaccine are given) and iron folic acid tablets are supplied free of cost for every pregnant woman.

Many deaths are found under the age of 5 years due to acute respiratory infection (ARI). So through 'child survival and safe motherhood programme' the health personalities are trained for ARI. Thee C.T. tablets are supplied free of cost to the sub-centre level and the vulnerable babies are referred to the first and referral unit.

National Tuberculosis Control Programme (NTP)

In Assam, districts with large 'char' area population and labourers in the tea gardens show high incidence rate of tuberculosis infectious cases. The NTP aims at the methods by which the systematic reduction of tuberculosis in the community may be done. The primary objective of the NTP is to provide tuberculosis case finding and treatment activities on domiciliary basis through an organized district TB control programme. The patients detected under the PHC are referred to the district TB centres for treatment and of course, medicines are supplied through district TB centres. As a preventive measure children after birth are immunized (BCG Vaccination) against the tuberculosis. Already 11 numbers of district TB centres have been fully implemented and 6 numbers are under construction. Three chest clinics (Rangia,

Morigaon and Golaghat) and three TB hospitals (L. G. B. Chest Hospital, Guwahati; C. L. M Chest Hospital, Tezpur; Chest Hospital, Dhubri) are functioning in Assam. All total 656 numbers of beds are available under public sector for the treatment of TB patients.

National Malaria Eradication Programme (NMEP)

Malaria is termed as the largest killer disease in Assam. Due to high humidity and forest region malaria is endemic in North Eastern region. Every year hundreds of life are killed by malaria in this region. Through NMEP the malaria workers of different sectors are working in different levels from blood slide collection of the fever infected people to the bio-technological research of the malaria circuit. Particularly, through malaria research centre (established in Sonapur of Kamrup District of Assam) the bio-technological works are done and health staff of different sectors does the works in phased manner. The multi-purpose workers in the grass-root level collect the blood smear and they send it to the PHCs where it is examined. The medical therapy (Cloroqueen + Prima queen) under the guideline of WHO are supplied free of cost. Under the Joint Director (malaria) there is a district Chief Medical and Health Officer (CD) to look after the works of malaria workers. In every district there is one district malaria officer (who is a non-medical officer) and entomologist to supervise the district works. Every year DDT is spraying in two phases where the malaria is endemic.

Iodine Deficiency Disease Control Programme

Iodine deficiency particularly in sub-Himalayan region leads to Goitre and mentally retarded child and mynadaematous baby. As it is reported as in endemic region iodine control and supply is monitored through iodine control programme.

Blindness Control Programme

Presently in every block PHC, one ophthalmic assistant is appointed for surveillance work of ocular disease in the area under the scheme of blindness control programme and particularly the eye ointments are supplied for simple ocular diseases. He has to detect the major blindness causing 'cataract' and to refer it to the district hospital and also to detect night blindness of people.

THE EXISTING PHYSICAL INFRASTRUCTURE AND THE HUMAN RESOURCE INVOLVED IN THE DELIVERY OF HEALTH CARE IN ASSAM

Comparative Position of Assam and India in Respect of Hospital Facilities

Hospitals and Hospital Beds per Lac of Population in Rural and Urban Areas

The comparative position of Assam and India in respect of hospital facilities for their respective rural and urban populations is conveyed in Table 7.1. It is clear that in Assam one can see the same all India picture with regard to the rural – urban imbalance in the distribution of hospital facilities. In case of hospitals, hospital beds, dispensaries as well as dispensary beds the number available per lac of urban population far exceeds the number available per lac of rural population. For instance, of the total 268 number hospitals existing in Assam in 1993, 151 were located in rural areas and the remaining 117 were in urban areas. But the ratio of hospitals to a lac of population is 4.4 in urban areas compared to only 0.71 in rural areas. The disparity is even wider in terms of hospital beds as the rural hospitals in general had fewer beds. Against 331 number of hospital beds per lac of urban population there were only 18.7 beds per lac of rural population. Similar disparity is also visible in case of dispensaries and dispensary beds.

Compared to the all India position, the number of hospitals per lac of population is marginally better in Assam both in rural and urban areas. But in the overall bases the all India position is somewhat better than Assam. The apparent contradiction actually appears because of the fact that the share of urban population is much higher in India than in Assam and that the urban areas in general have much higher number of hospitals per lac of population than rural areas. With respect to hospital beds per lac of population the all India position not only better as a whole but also for the rural areas. In case of dispensary and dispensary beds per lac of population the all India position is better than that of Assam in rural areas, urban areas as well as on the overall basis.

Thus, on the whole it appears that hospital facilities for the rural population in Assam is somewhat worse than the same at the all India level. However, the disparity between rural and urban areas of the facility is glaring both for Assam and at the all India level.

Table 7.1 : Comparative Position of Assam and India in Case of Hospital Facilities Per Lac of Population in Rural and Urban Areas (in the year 1993)

	Rural		Urban		Overall	
	Assam	India	Assam	India	Assam	India
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hospitals	0.71	0.66	4.40	4.04	1.13	1.54
Hospital beds	18.70	19.50			53.37	67.14
Dispensary	1.40	1.69	1.10	7.04	1.37	3.09
Dispensary beds	0.17	1.98	0.22	5.25	0.18	2.88

Source: Central Bureau of Health Intelligence, Government of India, 1994.

Dominance of Public Sector as Provider of Hospital Facilities in Assam

The health care service in the state of Assam is mainly dominated by public sector. As per statistics available for 1993 (CBHI, Government of India, 1994), out of total 288 number of hospitals and 12661 number of hospital beds the public sector accounted for 70 percent of hospitals (52.6 percent by the state government and 17.6 percent by local bodies) and 85 percent of hospital beds (76.6 percent by state

government and 7.7 percent by local bodies). The remaining 30 percent of hospitals and 15 percent of hospital beds were under the non-government sector comprised of the private commercial sector and the voluntary organizations. Also out of total 325 numbers of dispensaries 317 numbers i.e., 97.5 percent of dispensaries were under public sector leaving 2.5 percent in the private sector. The private sector dispensaries, however, have no beds available in them. Thus, all the 42 dispensary beds were in the public sector (refer Appendix Table 7.1).

On the other hand, the all India figures show the opposite trend, where 66.6 percent of hospitals and 63 percent of dispensaries were in the private sector. Of course, public sector hospitals and dispensaries (having 64.6 percent of hospital beds and 57.9 percent of dispensary beds) were equipped with more beds than the private sector.

The Size and Composition of Hospitals in Assam and India

As per Central Bureau of Health Intelligence (CBHI, 1994), average size of hospitals was larger in Assam than at the all India level. The hospitals of Assam on the average had 85.7 beds against the all India average of 58.5 beds. In Assam, about 20 percent of hospitals were equipped with more than 100 beds. But in India as a whole, only 12.6 percent of hospitals had more than 100 beds. The details are available in Table 7.2.

**Table: 7.2 : Distribution of Hospitals According to Bed Capacity
(1st January, 1988)**

Bed Capacity	Assam			India		
	Number	Percentage	Cumulative Percent	Number	Percent	Cumulative Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0-25	46	36.5	36.5	5,798	59.9	59.9
26-50	29	23.0	59.5	1,805	18.6	78.5
51-100	26	20.6	80.1	863	8.9	87.4
101-200	12	9.5	89.6	661	6.3	93.7
201-300	7	5.6	95.2	250	2.6	96.3
301-700	3	2.4	97.6	249	2.6	98.3
700+	5	2.4	100	105	1.1	100

Source: Central Bureau of Health Intelligence, Government of India.

The Expansion of the Public Sector Rural Health Centre Network in Assam

As discussed in Chapter Six, the public sector organization for delivery of primary health care in the villages has a three tier set-up, in which, the sub-centres are at the bottom, the primary health centres are at the middle and community health centres are at the top. As per statistics reported by the Central Bureau of Health Intelligence (1994), number of primary health centres per lac rural population in Assam, which was 0.63 in 1961 increased to 2.71 in 1993. Contrary to this, the number of dispensaries per lac rural population decreased from 5.87 numbers in 1966 to 2.26 numbers in 1981 and then again decreased to 1.56 numbers in 1988 (refer Table 7.3).

Table 7.3 : Primary Health Centres and Rural Dispensaries Per Lac of Population

	1961		1966		1971		1981		1988		1993	
	PHC	DIS	PHC	DIS	PHC	DIS	PHC	DIS	PHC	DIS	PHC	DIS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Assam	0.63	0.0	0.15	5.87	0.78	-	0.82	2.26	2.27	1.56	2.71	-
India	0.75	1.39	1.27	1.92	1.17	-	1.06	2.21	2.81	2.29	3.36	-

Source: Central Bureau of Health Intelligence, Government of India. Health Information of India, 1994.

The same publication also gives detailed information of the development of all the three layers of health care centres namely, sub-centre, primary health centre and community health centre. Table 7.4 shows that during the period 1985-1993, in case of all the three layers of health care centres Assam had a higher percentage of increment compared to all India level. In Assam, the figures are 208.5, 140.9 and 708.3 percents for sub-centres, primary health centres and community health centres respectively, while for India as a whole the corresponding figures are 56.4, 130.4 and 200.7 percents. As a result of this increase the number of sub-centres per lac of rural population in Assam improved from 5 in 1985 to 25 in 1993. The number of community health centres serving per lac of rural population also increased from 0.06 in 1985 up to 0.46 in 1993. This increase was made possible by the spurt in capital expenditure of the government

in health care service from the mid 1970s to the late 1980s discussed in earlier in Chapter Five.

**Table 7.4 : Progress of Establishment of Health Centres in Assam
(Numbers of Functioning)**

		1-4-1985	1-4-1985	Population Covered Per Centre in 1993	% Increase of Health Centres 1985- 1993	No. of Health Centres per Lac Rural People		Average Annual Growth Rate
						1985	1993	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SC	Assam	1711	5280	3995	208.5	5.00	25.00	0.15
	India	84053	131470	4775	56.4	16.00	21.00	
PHC	Assam	237	571	36935	140.9	1.25	2.71	0.12
	India	9118	21009	29756	130.4	1.74	3.36	
CHC	Assam	12	97	217422	708.3	0.06	0.46	0.29
	India	761	2289	273115	200.7	0.14	0.37	

Source: Rural Health Statistics, March 1963 and June 1993.

From the above discussion, it is clear that the health care facilities in Assam shows impressive rate of growth. Despite the impressive expansion of rural health centre network in Assam since 1985, the state still lagged behind the national norms of population coverage as per the National Health Policy of India (1982). For example, in Assam, population coverage per sub-centre, primary health centre and community health centre in 1993 were 3995, 36935 and 217422 numbers whereas the national norms are 3000 - 5000 numbers for 'sub-centre', 20000 -30000 for 'primary health centre' and above 1 lac for 'community health centre'.

The Human Resource Involvement in Delivery of Public Health Care

In Assam, after independence during the various five-year plan periods, along with the development of health infrastructure there has also been increase in the number of health practitioners. The number of registered doctors per lac of population, which was 23.92 in 1971 increased to 27.54 in 1986. Nonetheless, compared to all India level availability of doctors was lower in Assam. During the same period of

1971 -1986, the number of registered doctors per lac of population in India increased from 27.57 to 41.76 numbers (refer Table 7.5). However, the expansion of public sector health care service particularly in rural areas in the subsequent years might have improved the position of Assam considerably. According to the Central Bureau of Health Intelligence (1994), every 8750 persons in Assam enjoyed the service of a public sector doctor whereas in India every 21,337 persons get the same facility. For delivering the primary health care all total 584 numbers of doctors worked at primary health centres of rural Assam (in 1988) covering 33185 numbers of rural people per doctor. Also 4037 numbers auxiliary nurse midwife / female health guides were engaged in the service. During the period 1974 -1991, 14229 numbers of dais have been trained for delivering maternal and child health care in rural areas.

Table 7.5 : Total Number of Doctors (Registered) Per Lac of Population

	1971	1976	1981	1986
Assam	23.92	24.97	27.19	27.54
India	27.57	34.14	39.22	41.76

Source: CBHI, 1994.

Non Government Organizations' Activity in Delivery of Health Services in the State of Assam

Non-Government Organizations (NGO) have a long history of contributing to improving the health of India's poor with early efforts beginning in the 19th century. Since independence the quantity and scope of NGO health programmes have increased. In 1989, it was estimated that NGO were serving the health needs of approximately 5 percent of India's population in rural and urban areas (Berman and Dave, 1994). During 1980s, the Government of India sought the involvement of non-government / voluntary organizations to increase community participation in the programmes such as Universal Immunization Programme and Integrated Child Development Scheme (ICDS), and also to engage individuals as community health workers. The government as well as international organizations like United Nations Organization (UNO), World Health Organization (WHO) etc., recognized the capacity of non-government

organizations to contribute to community health and ways were sought to widen their impact by involving them in the public health system.

In Assam, according to their activities in the field of health care, NGOs can be grouped as follows:

- (a) NGOs involving in training workers for the government health system, ranging from community health workers and anganwadi workers to doctors and health administrators. For instance, district branches of Indian Council for Child Welfare (ICCW) Assam are comprised of this category.
- (b) NGOs working in the field of creating public awareness about mother and child health care, immunization etc. For example, activities of Voluntary Health Association of Assam (VHAA) and its member organizations are of this category.
- (c) NGOs like the branches of Red Cross Society and Christian Missionaries are working in case of delivery of both primary health care services as well as specialist health care services.
- (d) NGOs supplying the specialist health care with the help of government agencies. Organizations like Lions Club, Rotary Club etc., are examples of this group.
- (e) Also the activities of some NGOs are limited with motivating and promoting the rural people to accept the government facilities of safe drinking water and sanitation. Mainly the village level youth clubs/mahila samities are included in this category.

Now, we will briefly summaries the activities of some prominent NGOs in health sector, as classified above.

(a) Activity of NGOs Included in the First Category

The Indian Council for Child Welfare (ICCW), Assam state branch has been working in the cause of child welfare. The council conducts a number of government-sponsored schemes besides their own welfare works. The health related programmes conducted by this NGO are- (1) The Anganwadi Workers Training Programme, (2) The Balsevika Training Programme, (3) Immunization etc. The ICCW, Assam state

branch has been entrusted with training of the anganwadi workers of the Integrated Child Development Scheme (ICDS). Out of nine anganwadi workers training centres in the state, the council runs seven such training centres through its district branches. The balsevika training programme was the first training venture by the state council. The council has been running two centres since 1973. In this scheme the girls selected, are trained in health, nutrition and pre-school teaching besides other income generating activities. The council has also been continuing nutrition programme in three districts - Darrong (Tezpur), Nowgong and Kamrup (Guwahati) from 1973. The programme is conducted through Balwadis and Day Care centres. The council through its district branches has been conducting regular immunization programmes in the districts like Kamrup, Darrong, Jorhat and Dibrugarh etc. The branches held health check - up camps for children, pregnant and nursing mothers.

(b) NGOs of the Second Category

The Voluntary Health Association of Assam (VHAA) is a state level federation of voluntary organization engaged in the field of health and development. VHAA in its endeavour to promote health has along been guided by the primary health care approach. VHAA, which started functioning in June 1989, works in the field of community health through training, mass education, publications and conducting seminars, workshops etc. VHAA assists its member organizations in implementing and evaluating different programmes and also does the liaisoning of the member organizations with the government. The total strength of its membership in 1994 was seventy, and the area of operation is whole of Assam. In the field of community health VHAA has taken maternal and child health care (MCH) as one of their priority activities with an objective to give comprehensive knowledge, skill and information to the women in general and mothers in particular about the health of mothers and children. The VHAA is running a nutritional awareness project in Dimoria (Kamrup District) and East Golaghat development blocks with collaboration and support from Child Relief and You (CRY), Calcutta. The objective of this project is to improve the nutritional status of children between 0 - 6 year in ten villages of the said

blocks. Major activities of the project include arranging health check-up camps, maternal and child health, training of birth attendants, school health etc., as part of the health component of the project.

(c) NGOs of the Third Category

During the period 1983 - 1996, the Indian Red Cross Society (IRCS), Assam State Branch has expanded its service network in 13 districts of the state. Besides the relief activities during the period of natural disaster, the IRCS, Assam, through its health centres is delivering primary health care, mainly maternity and child health care to the people of the state. For maternity and child health care, the society has established huge hospitals with indoor and outdoor facilities in the districts of Kamrup (Guwahati), Silchor and Karimganj. Two out patient clinics and diagnostic centres have been established in Guwahati. In each district branches of Silchor, Karimganj, Nalbari, Lakhimpur, Tezpur and Guwahati one children clinic, one ANM training centre, one *dhai* training centre and immunization programmes have been taken by the society. The society is rendering family welfare services as well as immunization facilities to the people through different schemes taken by the government. Above the nurses training centre, the Guwahati branch also runs another female health workers training course. The IRCS, Assam organizes health check-up camps in remote places of the state. The Hajo branch of the society opened a community health care training centre in November 1993 covering a population of 26,100 of 20 villages under Hajo PHC. The health workers of nurses training centre visited the area and advised the rural people on sanitation, prevention of communicable diseases, family welfare, child health and immunization programmes of government by house to house visit or holding group discussion with village headman / chief besides free distribution of iron folic acid tablets, vitamin-A solution, medicines of minor ailment and family planning motivation to the eligible couples of the area. The maternity and children hospitals established in Guwahati, Silchor and Karimganj also provide specialist health care to the people.

The council of Baptist Churches of North East India, Guwahati Branch is working for the community health in the

North Eastern states including Assam. In Assam, the council is running three hospitals - (i) Chatribari Christian Hospital, Guwahati, (ii) Jorhat Christian Medical Centre, and (iii) Babupara Christian Hospital, Goalpara. These hospitals are delivering mainly the health care services including maternity and child health care. The working staff of the hospitals, frequently visit nearby villages to supply health services to them. The Church's Auxiliary for Social Action (CASA), another voluntary organization is also working for the upliftment of rural women.

(d) NGOs of Last Category

As a part of integrated water supply and self help sanitation programme, one intensive sanitation project in the Kamrup district of the state of Assam was prepared in 1991 with support from UNICEF. The state public health engineering department which is the overall implementing agency, identified village / block level NGOs for supporting and implementing the programme. All total 17 block level committees / NGOs worked as cluster organizations in operation of the programme.

Conclusion

From the above discussion, it is clear that there are quiet a few NGOs actively engaged in the delivery of health care especially primary health care. However, the priorities and activities, and the location of operations of different NGOs seem to be different. While organizations like the Red Cross Society and Christian Missionary hospitals are directly involved in providing medical services specially maternity and child health care, many other organizations are engaged in raising the awareness of the public for better utilization of the health services provided by government agencies. In both these senses their role is complementary rather than competitive to the public sector. Potentially such organizations can bring about major changes in the health care scenario specially in the rural areas. Besides supplementing resources with the government such organization can help better utilization of government resources through their involvement in implementation of various community health programmes.

REFERENCES

- Berman, Peter and Dave, Priti (1994), "Experiences in Paying for Health Care in India's Voluntary Sector" in *Reaching India's Poor*, (ed.) Saroj Pachauri, 1994, Sage Publications, New Delhi.
- Central Bureau of Health Intelligence (CBHI) (1994), *Health Information of India*, CBHI, Directorate General of Health Services, Ministry of Health and Family welfare, Government of India, Puspa Bhawan, New Delhi.

Appendix Table 7.1 : Hospitals / Dispensaries and Beds According to Ownership as on 1.1.1993

		No. of Hospitals		No. of Hospital Beds		No. of Dispensaries		No. of Dispensary Beds	
		Assam	India	Assam	India	Assam	India	Assam	India
Public Sector	State Govt.	141 (52.6)	4235 (31.0)	9687 (76.6)	365696 (61.3)	317 (97.5)	8377 (30.6)	0	13241 (52.6)
	Local Bodies	47 (17.6)	334 (2.4)	982 (7.7)	19520 (3.3)	0	1758 (6.4)	0	1336 (5.3)
	Total Public Sector	188 (70.2)	4569 (33.4)	10669 (84.3)	385216 (64.6)	317 (97.5)	10135 (37.0)	0	14577 (57.9)
Private & Voluntary Sector		80 (29.8)	9113 (66.6)	1992 (15.7)	210987 (35.4)	8 (2.5)	17268 (63.0)	42 (100)	10596 (42.1)
Total		268 (100)	13682 (100)	12661 (100)	596203 (100)	325 (100)	27403 (100)	42 (100)	25173 (100)

Sources: Directorate of Health Services (Health Information of India 1994).
 Figures in brackets indicate the percentages.

AN OUTLINE OF THE RESEARCH DESIGN AND METHODOLOGY FOLLOWED IN THE FIELD SURVEY

The Need for the Field Study

The discussions in Chapters Five and Seven based on secondary data give an overall picture about the existing set up of health care service and the role of various agencies involved in implementation of different health care schemes in Assam. The public sector investments in health care in Assam have been analyzed in those chapters from a macro standpoint. From the discussions in those chapters, it is clear that macro level study based on secondary data can describe the present state of affairs in the primary health care of the state and indicate the relative position compared to primary health care elsewhere in the world. However, the analysis based on aggregated data fails to answer satisfactorily basic problems related to implementation, impact and effectiveness of specific health care schemes on target population groups and the relative importance of government and non-government sectors in implementing various schemes of rural health care. For example, the secondary data reveal that public expenditure in rural health care has increased significantly since 1981-82. The increase has not only been in nominal terms, but also in per capita real terms. Similarly, during the period under study there has been step up of investment in rural health

infrastructure. However, the available secondary data do not reveal the extent to which the benefit of public expenditure has percolated to the people. To obtain answer to such questions it is necessary to approach the problem from a micro point of view, i.e., it is necessary to carry out investigation at the grass root level. Accordingly, a field survey was carried out as a part of the study during the first quarter of 1998 at a few selected areas of Kamrup district of Assam.

Objectives of the Field Study

The main objectives of the field study were:

- (1) To find out the extent to which the public sector primary health care system caters to the basic health care needs of rural households.
- (2) To identify factors determining a rural household's per capita expenditure on health care service.
- (3) To examine the extent to which the burden of procuring health care service on a household is affected by the household's access to public sector health care system.
- (4) To suggest policy measures for making the system of primary health care more effective.

Selection of Locations for Field Study

To become true representative of the state, the field study should cover a fairly large number of rural areas of the state. But, due to constraints of time, manpower and other resources of this small project, it is almost impossible to cover the entire state in the field study. Thus, the field study had to be confined to a relatively small area. After a preliminary scrutiny the Kamrup district was selected as the broad location for field study. The district includes Guwahati, the only major city of the region. However, the rural areas of the district are not particularly better off than villages in any other parts of the state in terms of socio-economic development. The population composition also has the diversity and mixer, which is representative of the state. While the south-eastern region of the district is largely inhabited by tribal and backward community population, in

the western part there is a concentration of scheduled caste, religious minorities, plain tribes and also of other backward class population. The rest of the district is mixedly inhabited by people of different castes and religions. For the delivery of primary health care the rural areas of the district is served by a network of health centres comprised of 14 full fledged block primary health centres supported by 30 mini-primary health centres and 46 dispensaries, operating under the block primary health centre. For intensive field work three out of the fourteen block primary health centres were selected. The selection of the three block primary health centres was done purposively, but keeping in view two factors. First, the selected primary health centres are geographically scattered in the different parts of the district. Second, the selected block primary health centres are adequately representative of the different social and ethnic groups constituting the population of the district. One of the three block primary health centres selected is Sonapur taken from the south eastern part, another one is Chaygaon from the western part and the third one is Kamalpur located in the northern part of the district.

The Type and Method of Data Collection

In the field study data were collected from two categories of informants. The first category included personnel employed in rural government health service, members of non-government organizations and other people engaged in providing health services. Data collected from these informants are about the general background of the field study locations, activities of government and non-government agencies engaged in the delivery of primary health care and related matters. For collecting these data the personal interview method was followed as a common questionnaire for different informants was thought to be unsuitable. However, while interviewing these people a list of questions was carried so as not to leave out questions relevant for all classes. The second category of informants were those to whom primary health care is supposed to be delivered. For collecting data from this category of informants a sample of households was drawn from each of

the three pre selected primary health centre areas. For selecting samples a two stage random sampling design was adopted. In the first stage of sampling the villages in the primary health centre areas were the sample units. At this stage 5/6 villages of each primary health centre area were selected at random. Altogether 17 villages were selected - 6 each from Sonapur and Chaygaon and 5 from Kamalpur. In the second stage the households in the selected villages were the sampling units and in this stage about 10 percent of households from each selected village were drawn at random as the ultimate unit of survey. The sample thus selected was comprised of a total of 250 households - 85 from Sonapur, 75 from Kamalpur and 90 from Chaygaon.

To collect data from the sample households, a standard questionnaire was used. The questionnaire used had three broad sections. The first section included questions related to general socio-economic background of the households, such as, family size, educational attainment and occupation of the family members, caste-community, house type, land ownership and family income etc. The second section contained questions about the health status of the households, the nature and source of health care service consumed, expenditure on different components of health care service, extent of utilization of government health care schemes etc. The third section contained questions to record public awareness of activities of health workers and other extension agencies involved in delivery of health information. The questionnaire was finalized after a test checks in a small pilot survey.

Presentation and Analysis of Data Collected in the Field Survey

Presentation and analysis of the data collected in the field survey have been laid out over the two subsequent chapters viz., Chapter Nine and Chapter Ten.

The Chapter Nine prepares the background for intensive analysis by describing the general background and health infrastructure of the field study locations, basic facilities available in the sample villages and socio economic profile of the sample households.

Chapter Ten reports the results of detail analysis of the data collected in the field study. In carrying out the analysis apart from the simple tools of ratio and percentages, other statistical tools and econometric methods, such as, coefficient of association and multiple regression analysis have been used.

A PROFILE OF THE FIELD STUDY

—Locations and the Sample

General Background of the Three Locations of Field Study

Name and Location

The three primary health centre areas selected for field sample survey are Sonapur, Kamalpur and Chaygaon of the Kamrup district. The Sonapur primary health centre is located in the south-eastern part of the district and it falls under the revenue circle of Sonapur and community development block of Dimoria. Kamalpur is located in the northern part of the district and falls within revenue circle and community development block with the same name i.e., Kamalpur. Chaygaon primary health centre area falls within the revenue circle and community development block Chaygaon located in the western part of the district. [Refer Map-1].

Area and Population Covered

Among the three locations of the field study the Kamalpur primary health centre is the smallest in terms of both area and population. It caters to an area of 64 square kms inhabited by a population of 80,529 as per estimates of 1998. In terms of coverage of area, Sonapur primary health centre is the largest but in terms of population Chaygaon is the largest. While the former covers a population of 1,30,377 (as per 1998 estimate) inhabiting an area of about 900 square kms., the latter covers a population of 1,54,144 inhabiting an area of about 120 square kms. [Refer Table 9.1]. The Sonapur primary health centre area includes several hilly parts, which are

comparatively sparsely populated than the plain areas. Accordingly the density of population there is much lower than the other two locations of the field study. Moreover, because of concentration of tribal population in this location, the Sonapur area is officially recognized as falling in the tribal belt.

Table 9.1 : Area and Population Coverage of the Three Selected Primary Health Centres

	<i>Name of the PHCs</i>		
	<i>Sonapur</i>	<i>Kamalpur</i>	<i>Chaygaon</i>
(1)	(2)	(3)	(4)
Area (in sq. km.)	900	64	120
No. of Villages Covered	263	66	160
Population Covered	1,30,377	80,529	1,54,144
Density of Population Per square km. (in persons)	149	1258	1284

It may be mentioned here that the general norm of population coverage by a primary health centre according to National Health Policy, Government of India (1982) is one lac. As per that norm, both Sonapur and Chaygaon are overburdened.

Public Sector Primary Health Care Infrastructure in the Selected Primary Health Centre Areas

In delivery of primary health care Sonapur primary health centre is supported by a group of 3 mini-primary health centres and 5 dispensaries, operating under it. In Kamalpur, the number of mini-primary health centre and dispensaries are 1 and 2 respectively. The Chaygaon primary health centre is also supported by 1 mini-PHC and 2 dispensaries. Though as mentioned in the foregoing section that Sonapur and Chaygaon PHCs are overburdened in terms of coverage of population, the picture is different in these two PHC areas when we take the population to health centre (including PHC, mini-PHC and Dispensary) ratio. Corresponding to a population of 14,486 to per health centre in Sonapur, in Kamalpur and Chaygaon PHC areas there are 20,132 and 38,536 persons per health centre respectively. Compared to Chaygaon and Kamalpur the Sonapur PHC also has more sub-

centres operating under it. It may however be recalled that, sub-centres are primarily meant for implementation of family planning and maternal & child health programmes and not giving any other medical care. The coverage of population per sub-centre in all the three locations also meets the norms of national health policy [Refer Table 9.2]. The Kamalpur and Chaygaon PHC areas are also fortunate to have the community health centres of the respective blocks located within them. However, it may be recalled that community health centres are meant more for delivery of specialized medical care than for catering primary health care.

Table 9.2 : Primary Health Care Infrastructure Available Under the Selected Primary Health Centres

	<i>Name of the PHCs</i>		
	<i>Sonapur</i>	<i>Kamalpur</i>	<i>Chaygaon</i>
(1)	(2)	(3)	(4)
Number of mini-PHCs	3	1	1
Number of State Dispensaries	5	2	2
Number of Sub-Centres	38	18	27
Ratio of Population per Health Centre	14,486	20,132	38,536
Coverage of Population Per Sub-Centre	3430	4473	5709

In case of delivery of primary health care through implementation of national preventive and pro-motive health care programmes, the multi-purpose workers including the anganwadi workers play a significant role [Refer Chapter Six]. At the time of our field study 91 numbers of multi-purpose workers were found to be working under the Sonapur PHC. The number of multi-purpose workers engaged in Kamalpur and Chaygaon were 58 and 97 respectively. In Sonapur, besides the multi-purpose workers, over hundred anganwadi workers were associated with the primary health centre who extended their helping hands in arranging immunization sessions and family welfare activities. However, involvement of anganwadi workers in implementation of similar health programmes was found to be absent in both Kamalpur and Chaygaon.

Table 9.3 : Manpower Associated With Selected Primary Health Centres

Manpower	Name of the PHCs		
	Sonapur	Kamalpur	Chaygaon
(1)	(2)	(3)	(4)
Entire PHC Staff	244	101	11
No. of Doctors	5	5	7
Number of AWW associated with PHC	116		
Number of Village Health Guides	18	23	32
Number of Multipurpose Supervisors (male + female)	6+4	2+4	6+3
Number of female Multipurpose Workers (male)	19	7	22
Number of female Multipurpose Workers / ANM	44	22	34

Non Government Organizations Operating in Health Sector in the Field Study Locations

Although apparently there are three non-government organizations operating in the Sonapur PHC area with people's health as one of the concerns, only one of them was found to be active. This organization is the Voluntary Health Association of Assam (VHAA) which, has been carrying out the project 'Khoj' with the collaboration of another NGO named Santi-Sadhana Ashram. The project is currently covering 20 villages in the Dimoria block, some of which are parts of the Sonapur PHC area. The project operates from a centre with a 4-bedded unit and a resident doctor located at Bamfor at a distance of about 15 kms from Sonapur PHC. The project also has 8 field out-patient units each manned by a health worker trained by VHAA. The health component of this project is mainly concerned with supporting government agencies in implementation of programmes of maternal and child health. The other two NGOs namely, Maloybari Gaon Unnayan Sammittee and Amri Project of some Christian missionaries in the Sonapur PHC area were found to be inactive in practice. The two NGOs operating in Chaygaon namely, Luit Club and Venus Club were also found to be more or less inactive except for organization of occasional eye camps. But it was the Kamalpur PHC area,

which was found to be worst of in this context as no NGOs were found to be associated with any health care programmes there.

Basic Facilities in the Samples Villages

In case of availability of basic facilities like educational institutions, post-office, sufficient electricity supply and good transport and communication system etc., the sample villages of Kamalpur are relatively in a better position than the other two primary health centre areas. The sample villages of Chaygaon on the other hand, are the most backward in terms of these facilities. The sample villages each has a lower primary school, however, there was neither a high school nor a post office in any of the sample villages in Chaygaon. In Kamalpur each of the 5 sample villages has a post office and 3 of these villages have high schools. In Sonapur also three sample villages have high schools though only two of the 6 sample villages from this area have post offices. The sample villages in both Sonapur and Kamalpur have electricity connections, though the power supply is reportedly extremely irregular. But, the sample villages in the Chaygaon do not even have the electricity connections. These villages also poorly connected with the health centre with no proper road connection. People in the villages have to visit the health centre or the medical shops on foot only. In both Sonapur and Kamalpur, sample villages are better connected with the primary health centres by all weather roads.

General Profile of the Sample

It may be recalled that in the field study data were collected from a sample of 250 households comprised of 85 households from Sonapur, 75 from Kamalpur and 90 from Chaygaon. The socio-economic profile of this sample of households is described in the remaining pages of this chapter.

(a) Family Size

The sample of 250 households constituted a population of 1507 at the time of the field study. The average family size was 6.03 persons for the entire sample. The average family size was somewhat higher in Kamalpur and lower in Chaygaon and Sonapur. [Refer Appendix Table 9.1].

(b) Social Group wise Composition of Sample Households

The inhabitants of Kamalpur primary health centre area are mainly belong to Assamese Hindu (General, Scheduled Caste and Other Backward Caste) community. The Table 9.4 below shows that out of 75 households selected for study are mostly from scheduled caste (SC) and general caste communities. The sample from Sonapur primary health centre area is more diverse in this respect. Though households belonging to general caste and OBC community together comprised more than half of the sample, there are significant number of scheduled tribe and scheduled caste communities. The community composition of the sample from Chaygaon primary health centre area is also markedly different from those of the other two samples. In this sample, households belonging to scheduled tribes constitute the single largest section. The sample also includes significant number of scheduled caste and muslim households.

Table 9.4 : Social Group Wise Composition of Sample Households				
Categories	Number of Families			Total
	Sonapur	Kamalpur	Chaygaon	
(1)	(2)	(3)	(4)	(5)
General Caste	17 (20.0)	36 (48.0)	14 (15.5)	67 (26.8)
Scheduled Caste	12 (14.1)	15 (20.0)	27 (30.0)	54 (21.6)
Scheduled Tribes	23 (27.1)	2 (2.6)	28 (31.1)	53 (21.2)
OBC/ MOBC	33 (38.8)	11 (14.6)	6 (6.6)	50 (20.0)
Muslim	0	11 (14.6)	15 (16.6)	26 (10.4)
Total	85 (100)	75 (100)	90 (100)	250 (100)

Figures in brackets indicate the percentages.

(c) Literacy Level

Among the three sample locations of our field study the Kamalpur seems to be comparatively more advanced with respect to adult literacy. In sixty four percent of sample households from this area all adult members were found to