Chapter 6

HEALTH STATUS IN SOUTH 24 PARGANAS

Along with education, health is the most important human development indicator. It is crucial in determining the level of welfare of individuals and the community. Health is important not only as a target important for its own sake, but for enabling the individual to access or utilize the facilities and services available to the person. Provisioning of health services to the community is therefore crucial in any economy, and more so in developing economies. In particular, policy makers must ensure equitable access to the health care system, by providing cost effective health services (as recognized in the Alma-Ata "Health for All" initiative undertaken by the World Health Organisation in 1978) and facilities to the poor especially in rural areas. Such intervention characterizes an effective and socially acceptable approach to poverty reduction.

6.1 Healthcare Institutions in South 24 Parganas: A Stock-taking

6.1.1 Institutional Network

State healthcare system in South 24 Parganas comprises a total of 99 healthcare institutions under the control of the Chief Medical Officer (CMOH), 141 private healthcare institutions, 5 institutions run by Local Bodies, 1 by Labour Department under State Government (SGL) and 1 by Central Government (CG).

Table 6.1: No. of Healthcare Institutions

Sl. No.	Under control of	Total Institutions	Total No. of Beds
1	CMOH South 24 Parganas	99	2633
2	Pvt.Health Institutions	141	1901
3	Local Bodies	5	88
4	State Govt. Labour Dept	1	300
5	Central Govt.	1	143
Total		**247**	**5065**

Source: Office of CMOH, South 24 Parganas

Healthcare institutions under the control of CMOH include District hospital (DH), Sub-division Hospitals (SDH), Rural Hospitals (RH), Block Primary Health centers (BPHCs), Primary health centres (PHCs) and sub-centres (SCs). The health sub-centers are functionally grouped into government clinics and dispensaries (Table 6.2).

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The three-tier referral health care system is as follows:

- At the lowest level we have Government clinics and dispensaries, which offer only out-patient treatment,
- PHCs providing basic in-patient facilities,
- Government Hospitals situated at the block, sub-division and district head quarters, offering full fledged out-patient and in-patient services to the district population.

On an average, for each SD and SG hospital-level healthcare facility there are 3 RHs/BPHCs; each RH/BPHC has under it 2 PHCs and each PHC has 17 SCs under its control.

Table 6.2: Healthcare Institutions under the Control of CMOH, South 24 Parganas

Sl. No.	Category of the Health Institution	Total No. of Institutions	Total No. of Beds
1	Dist. Hospital	1	620
2	SD Hospital	4	486
3	SG Hospital	4	406
4	Rural Hospital	9	385
5	BPHC	18	235
6	PHC	63	501

Source: Office of CMOH, South 24 Parganas

Table 6.3: No. of Healthcare Institutions – Trends in South 24 Parganas

Year	Hospitals	Health Centres	Clinics	Dispensaries	Total Beds
1995	11	81	26	23	958
1999	12	83	42	29	1049
2004	27	82	982	30	1026

Source: Bureau of Applied Economics & Statistics, District Handbooks

It can be seen from Table 6.3 that over time there has been an increase in all health care facilities. There has been an increase in the number of Hospitals and particularly in the number of Clinics after 1999. While upgrading has led to a marginal decrease in Health Centres between 1999 and 2004, there has been a some reduction in number of beds. This is an unwelcome trend that should be reversed.

The GIS map of villages of the District shows that there are a large number of villages without medical facilities. Further, these are not concentrated in the Sundarban Region but also occur in the North-Eastern part of the district and even on the periphery of Kolkata.

6.1.2 *Settlement Density and Infrastructure*

Apart from the infrastructural set-up other important issues are size of the health care service sector and the size of the population for whom they extend health care coverage. Table 6.4 examines the situation with respect to different blocks in South 24 Parganas for some critical parameters. For analytical purposes the blocks are divided into three principal regions:

- Region-I: North West (Kolkata Surroundings),
- Region-II: North East and Mid West, and
- Region-III: South (Sundarbans)

Figure 6.1 Availability of medical facilities in south 24 parganas

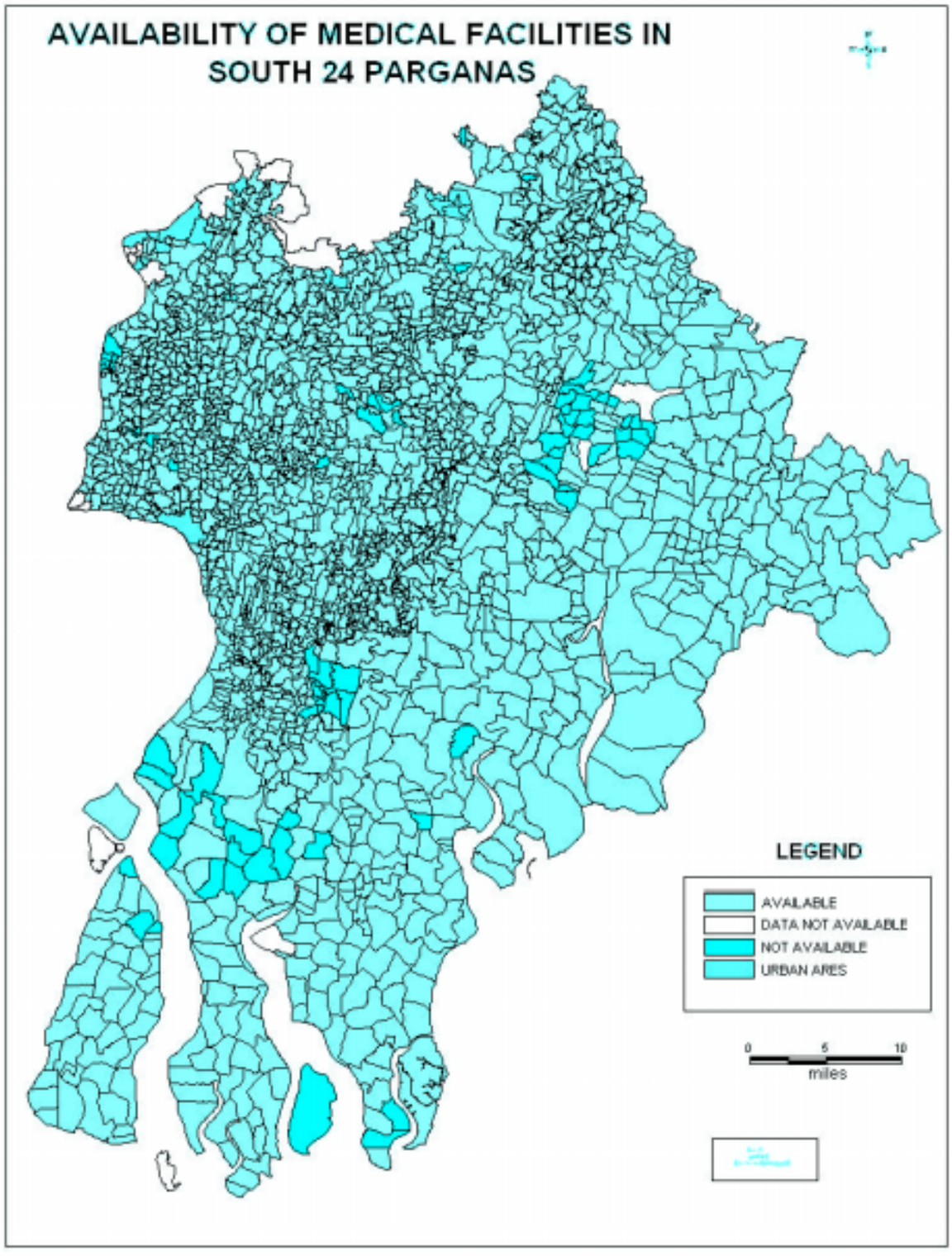

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Table 6.4: Health Care Infrastructure : Block-wise, 2006

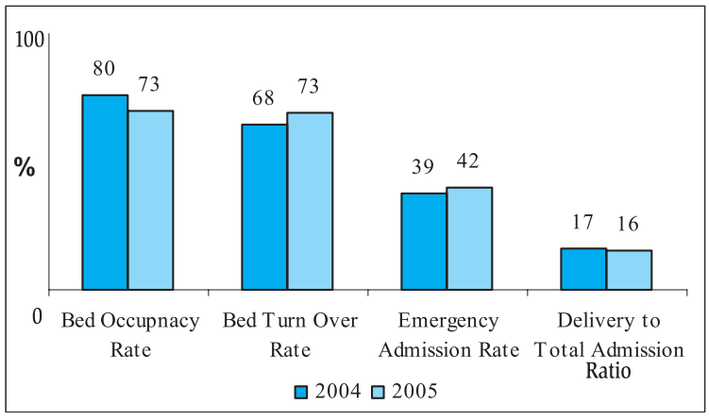
Block	Population	Total No. of Villages	No. of Sub Centers	No. of RHs / BPHCs/ PHCs	RH + BPHC + PHC Number of					No. of Villages with nearest PHC within 5 Km (If not available within the village)
					Beds	Medical Officers	Nurse	Health Assistants Male /Female	Pharmacists & Technicians	
Thakurpukur-Mahestala	136903	66	19	1	15	3	5	23	3	15
Budge Budge - I	99945	40	14	3	36	6	4	16	6	6
Budge Budge - II	173446	66	24	3	72	8	11	42	8	3
Bishnupur - I	206370	86	28	3	35	6	9	49	5	3
Bishnupur - II	190636	78	26	2	25	7	6	39	5	39
Sonarpur	167408	74	23	4	47	14	16	30	13	38
Region I: North West (Kolkata Surroundings)	**974708**	**410**	**134**	**16**	**230**	**44**	**51**	**199**	**40**	**104**
Baruipur	351439	230	48	4	90	32	36	69	15	49
Bhangar- I	204380	148	28	2	25	5	7	53	3	16
Bhangar- II	207580	111	28	3	31	5	10	50	4	33
Falta	221695	175	30	2	25	5	4	43	3	0
Diamond Harbour - I	133366	93	18	3	31	5	8	24	3	32
Diamond Harbour - II	165233	126	22	3	31	6	11	22	3	57
Magrahat - I	164650	130	31	2	25	7	6	50	4	48
Magrahat - II	198281	132	36	3	31	6	9	53	4	26
Kulpi	242752	242	33	5	47	8	13	44	4	51
Mandirbazar	228335	99	25	1	15	5	5	31	2	36
Region II: North East and Mid West	**2117711**	**1486**	**299**	**28**	**351**	**84**	**109**	**439**	**45**	**348**
Canning - I	244627	61	56	2	78	16	25	79	11	3
Canning - II	195967	161	45	2	25	3	5	69	6	11
Basanti	278592	65	63	4	33	2	8	68	5	16
Gosaba	222822	122	51	3	31	5	10	41	4	6
Joynagar - I	219090	134	50	3	46	7	12	71	9	23
Joynagar - II	209145	115	47	4	52	9	15	67	8	2
Mathurapur - I	262092	155	37	3	76	10	17	44	5	44
Mathurapur - II	183131	119	45	4	82	10	23	53	7	2
Kultali	187989	52	43	4	47	9	11	57	6	4
Patharpratima	288394	87	65	4	61	7	11	55	5	29
Kakdwip	239326	189	54	4	116	25	41	56	5	18
Namkhana	160627	37	37	5	43	10	8	43	8	7
Sagar	185644	121	42	4	82	9	19	40	8	21
Region III: South (Sundarbans)	**2877446**	**1418**	**635**	**46**	**772**	**122**	**205**	**743**	**87**	**186**

Source: Office of CMOH; Health On the March

The volume of health care services is measured in terms of the physical infrastructure (consisting of the number of SCs, PHCs, BPHCs and RHs) Medical Officers, Nurses, Health Assistants, Pharmacists and Technicians.

It can be seen that Region-I has the lowest population, and Region-III the largest population. We would expect that the parameters studied would also increase

Figure 6.2: Indication of Hospital Performance in South 24 Parganas



proportionately with the population. Such a trend can be observed in general with two exceptions – the increase in number of beds and technicians and pharmacists between Region-I and Region-III is substantially less than the increase in population between these two regions. On the other hand, the increase in the physical infrastructure and manpower is significantly higher than the population increase between Region-II and Region-III. However, this analysis merely examines whether the expansion in health infrastructure has been commensurate with respect to the increase in population – it does not take into account whether the health infrastructure is capable of supporting the population pressure or not. The latter analysis is undertaken subsequently.

The regional perspective also hides the considerable block-wise variations. For instance, Mandirbazar (Region-II), ranking eighth according to population, has a poor infrastructure – both physical and service providers. Region-III blocks like Patharpratima, Basanti, and Mathurapur I also have very high populations (second, third and fourth highest, respectively). However, while Basanti has a satisfactory number of RHs/BPHCs and Sub-Centers, the number of beds (in hospitals) and medical staff is very low. Similarly in Patharpratima, the number of doctors and nurses is inadequate. Mathurapur I has a satisfactory physical infrastructure, but the staff strength is low. A contrasting picture of plenty can be seen in Sagar where the population is low, but both staff and particularly the physical infrastructure are very satisfactory.

An interesting ratio is that of the number of BPHCs, RHs and SDHs to the number of Sub Centres. While the former provides in-patient admission facilities, the facilities extended by Sub Centres is limited to out-patients. This ratio does not vary substantially across blocks in each region – the coefficient of variation in the three regions are 48%, 43% and 34% – but varies significantly across all blocks in the District (coefficient of variation is 80%). This variation is the highest in Region-I, adjoining Kolkata, and lowest in the Sundarban region.

6.2 Performance of Hospitals

It can be seen that the health infrastructure in blocks is not always consistent with the demographic pressure. This is reflected in indicators like Bed Occupancy Rate (BOR), Bed Turn Over Rate (BTOR), Emergency Admission Rate (EAR), and Delivery-Admission Ratio (DAR).

The aggregative performance appears relatively satisfactory and compares favourably with existing standards accepted by the Health Department, Govternment of West Bengal (see Figure 6.2). Thus, BOR – reflecting the extent to which existing facilities are utilized – was within the norms in 2004. In 2005, however, it fell by 7 percentage points to a level that is marginally below the WHO norm. The BTOR indicates the load on the health infrastructure. The performance is slightly better in this regard, as BTOR level has increased from 2004 levels by 5 percentage points, and attained the accepted standards of 72-96%. The problem with these figures is that they may be interpreted as evidence that people are 'healthier' and do not have to access health services. In reality, these figures are more likely to reflect the low reliance of the population on public health services. This is supported by the low figures for EAR and DAR. While the standard for EAR is 40-45%, the actual rates were lower in 2004 and just attained the standard in 2005. On the other hand, deliveries are expected to constitute the major share of admissions, particularly in a District with low average age of marriage and long period of fertility. However, the extremely low figures for DAR clearly indicate that institutional deliveries are relatively few. This issue has been discussed in greater details in a subsequent section. Data from *Health on the March*, published by the State Government, also shows that the proportion of major and even minor surgeries is relatively low in the public sector.

It is of course possible that the proximity of most of the blocks to Kolkata enables the district population to readily access hospitals in the latter. While this may explain why pressure on the District health facilities is low, it would also indicate a break-down of the three-tier referral system, lying at the core of decentralization of health facilities.

BOR is worst in Garden Reach SGH, followed by Bijoygarh and Bagha Jatin SGH. A considerable extent of under-utilisation of existing facilities – reflected in a low BOR - is also seen in Diamond Harbour and Vidyasagar SGH. The load on the health infrastructure is reflected in BTOR. The worst performance is by Diamond Harbour SGH, followed by Garden Reach and Baruipur SGH. EARs are substantially below the norms indicating the inability of SGHs to address the needs of patients.

Apart from the referral institutions, the

situation in blocks is also worth examining. This is not an easy task as there are considerable block-wise variations. Only six blocks out of 29 have satisfied norms

Table 6.5: Indicators of Individual Hospital Performance, 2006-07

Name of the Unit	Total No. of In-Patients	Total No. of Out-Patients	% of Deliveries Performed	% of Emergency cases referred out	% of Emergency cases referred in	Average Bed Occupancy Rate	Bed Turnover Rate
M.R. Bangur Hospital	41870	341789	16.1	5.8	9.6	71.5	72.5
Canning SD Hospital	9317	327048	17.0	8.3	0.1	100.8	74.8
Kakdwip SD Hospital	7939	182309	23.7	8.7	0.6	75.4	47.7
Baruipur SD Hospital	13335	223401	24.5	8.1	5.4	103.2	121.3
Diamond Harbour SD Hospital	11333	128960	52.0	4.2	10.5	43.1	176.8
Garden Reach SG Hospital	1359	63296	1.1	24.4	0.0	3.0	162.4
Vidyasagar SG Hospital	18774	188254	22.1	10.0	0.2	58.3	65.6
Bijaygarh SG Hospital	811	21457	17.9	6.5	0.0	25.6	25.3
Bagha Jatin SG Hospital	5443	43283	12.3	3.5	0.0	26.1	31.6
RH/BPHC							
Sonarpur	4142	146930	23.1	19.9	0.0	76.4	129.3
Baruipur	724	15221	0.0	13.0	6.8	3.7	N/A
Joynagar - I	4000	90268	33.5	8.7	0.0	67.4	174.7
Joynagar - II	3111	150225	12.5	5.2	0.0	42.3	N/A
Kultali	1997	108199	16.6	11.6	7.2	67.5	21.4
Bhangar - I	894	89854	37.8	20.1	0.0	56.0	82.5
Bhangar - II	1710	83046	5.9	34.8	0.0	33.4	71.3
Canning - I	995	28763	10.4	7.8	0.0	N/A	N/A
Canning - II	538	74263	30.3	11.9	0.0	23.5	13.3
Basanti	1158	42043	7.9	3.7	0.4	98.5	33.8
Gosaba	982	33334	19.7	17.0	0.0	65.8	34.9
Thakurpukur-Mahestala	123	27604	5.7	785.4	104.9	0.1	0
Bishnupur - I	565	96914	4.4	17.3	0.0	17.6	N/A
Bishnupur - II	1715	69228	12.9	19.4	0.0	69.4	N/A
Budge Budge - I	2643	154419	2.6	2.9	0.0	113.5	56
Budge Budge - II	3581	106696	15.1	7.0	0.0	38.2	N/A
Falta	1302	66073	17.7	3.4	0.0	75.3	85.5
Magrahat - I	1884	88349	6.7	8.8	0.0	47.1	130.3
Magrahat - II	1939	54528	16.0	9.6	0.9	63.0	5.6
Diamond Harbour - I	1369	108255	11.1	11.5	0.0	63.7	183.7
Diamond Harbour - II	2506	95261	17.0	8.3	0.0	59.9	61.5
Mathurapur - I	4244	91686	13.8	8.3	16.7	38.3	54.6
Mathurapur - II	5222	36687	16.6	3.6	28.2	94.9	67.8
Mandirbazar	679	43558	10.2	7.2	1.5	28.1	5.6
Kulpi	2712	62844	19.7	16.8	0.0	79.1	N/A
Kakdwip	0	7161	0.0	0.0	0.0	0.0	N/A
Namkhana	2600	31786	18.7	9.2	1.4	81.0	172.3
Patharpratima	1743	58330	43.3	2.2	3.7	130.8	172.2
Sagar	3906	82999	15.5	6.1	7.3	73.7	73.5
Amtala RH	18260	398586	18.5	8.8	4.4	36.5	121.4
TOTAL	**328698**	**7094417**	**20.2**	**8.9**	**5.2**	**628.2**	

Source: CMOH (South 24 Parganas)

NOTE: Since complete data not found for BTOR, the aggregate percentage for BTOR was not calculated

for BOR – Kultali, Falta, Mathurapur-II, Kulpi, Namkhana and Sagar. It is worth noting that four out of these blocks are in the Sundarban region where transport links to Kolkata are not so well developed, thereby forcing the population to avail of local public health facilities. Thus, in Patharpratima (also in Sundarban), the load has exceeded the standards significantly (131, against the norm of 75-100). Under-utilisation of services is found in many blocks. BOR is particularly low in Thakurpukur-Mahestala Block, Baruipur, Bishnupur-I (adjacent to Kolkata) and Canning-II. In all, BOR is below 50 in 11 blocks out of the 27 blocks for which data is available. Out of these 11 blocks, six are located in Regions I and II.

The block-wise situation with respect to BTOR is equally concerning. The pressure on public health facilities is excessive in the RH/BPHCs at Diamond Harbour-I (almost double the standard), Joynagar-I, Namkhana, Patharpratima (where BTOR exceeds norms by more than 70%), Sonarpur, and Magrahat I, and Amtala. The unevenness in spatial distribution of health infrastructure is seen from the fact that in almost one out of three blocks BTOR is below 50%. Levels are particularly low in Magrahat-II (5.6), Canning I (13.3) and Kultali (21.4).

The low rates of BOR and BTOR have important consequences for policy makers. The under-utilization of BPHCs/RHs in many of the blocks indicate that the reach of these institutions remains limited. This raises questions about PHCs and Sub-Centers. Their effective functioning can attract people to the public health facilities, and ensure effective utilization of middle level referral institutions (BPHCs/RHs) through the operation of the referral system.

In contrast to data published in *Health on the March: 2005* for the state (see graph above) it can be seen that EARs have not even remotely approached standards in any of the blocks, except Diamond Harbour-I. Except in BPHCs at Patharpratima, Bhangar-I and Canning-II, Joynagar-I RH, and in Diamond Harbour SDH, the proportion of deliveries to admissions is quite low, and deliveries constitute less than a third of total admissions.

Overall, the most concerning feature is the low reliance of the public on the District healthcare system. In the absence of a survey of District Hospitals, it is not possible to identify all the causes of this phenomenon. We would recommend that the Health Department undertake a regular stock taking to identify the nature of deficiencies in different units – where functional machines are lacking, where beds are in short supply, where posts are lying vacant, where attendance of doctors are irregular – and take steps to remedy the shortcomings. This would rejuvenate the District health infrastructure and build trust in the system among the public.

6.3 Carrying Capacity of Healthcare System

6.3.1 Infrastructure with respect to Population Pressure

Absolute figures of physical infrastructure and health personnel do not provide a meaningful picture of the extent to which the infrastructure is equitable across blocks. To overcome this limitation, population figures must be incorporated into the analysis. In this section we will first estimate the healthcare parameters after adjusting for block population. In the next section we will compare the block-wise situation (adjusted for population) with existing national norms for the parameters.

In South 24 Parganas the number of beds per ten thousand population is the highest

Table 6.6: Current Healthcare System Load in South 24 Parganas

Blocks	Beds per 10,000 pop	Doctors per lakh Pop	% of Ward Patients to Total Pop	% of Outpatients to Total Pop	% of Total Patients to Total Pop
Thakurpukur-Mahestala	1.10	2.19	0.03	33.99	34.02
Budge Budge I	3.60	6.00	1.19	126.41	127.60
Budge Budge II	4.15	4.61	1.25	0.53	1.79
Bishnupur I	1.70	2.91	0.00	0.00	0.00
Bishnupur II	1.31	3.67	2.50	65.80	68.30
Sonarpur	2.81	8.36	2.12	41.40	43.52
Baruipur	2.56	9.11	0.04	26.25	26.29
Bhangar I	1.22	2.45	0.33	23.49	23.82
Bhangar II	1.49	2.41	0.75	28.89	29.64
Falta	1.13	2.26	0.40	20.14	20.55
Diamond Harbour I	2.32	3.75	3.64	95.83	99.47
Diamond Harbour II	1.88	3.63	0.16	8.26	8.42
Magrahat I	1.52	4.25	0.00	11.55	11.55
Magrahat II	1.56	3.03	0.34	28.41	28.74
Kulpi	1.94	3.30	0.00	0.00	0.00
Mandirbazar	0.66	2.19	0.07	13.90	13.97
Canning I	3.19	6.54	2.40	69.32	71.72
Canning II	1.28	1.53	0.06	31.73	31.78
Basanti	1.18	0.72	0.16	9.34	9.50
Gosaba	1.39	2.24	0.19	4.80	4.99
Joynagar I	2.10	3.20	0.98	26.82	27.80
Joynagar II	2.49	4.30	6.10	56.61	62.70
Mathurapur I	2.90	3.82	0.00	0.00	0.00
Mathurapur II	4.48	5.46	2.46	27.05	29.51
Kultali	2.82	5.32	0.15	30.18	30.33
Patharpratima	2.12	2.43	0.49	13.92	14.41
Kakdwip	4.85	10.45	0.71	49.72	50.44
Namkhana	2.68	6.23	1.73	20.53	22.26
Sagar	4.42	4.85	1.37	38.13	39.50

in Kakdwip, followed by Mathurapur-II, Sagar, Budge Budge-I and II, Canning-I. It can be seen that four out of these six blocks are in the Sundarban region. The position is concerning in Thakurpukur-Mahestala, Falta and Mandirbazar blocks.

In the case of number of doctors per lakh population, the situation is satisfactory in Kakdwip, Canning-I, Namkhana (in Sundarban Region), Baruipur and Sonarpur (Region-I). The number of doctors has to be increased substantially in Basanti, Canning-II, Gosaba (Sundarban), Mandirbazar and Thakurpukur-Mahestala.

The dependence of the population on the public health system is measured by the proportion of patients to population. This figure is high in Budge Budge-I and Diamond Harbour-I, but is lower than 10% in Bishnupur-I, Kulpi, Mathurapur I, Budge Budge-II, Diamond Harbour-II, Gosaba, and Basanti. The proportion of out-patients is substantially higher than the proportion of ward patients. The block-wise variation is therefore similar to that for total patients. In the case of in-patients, the situation is satisfactory in Diamond Harbour-I and Joynagar-II, but lower than 1% in Bishnupur-I, Kulpi, Mathurapur-I, Magrahat-I, Thakurpukur-Mahestala Block, Mandirbazar, Baruipur and Canning-II.

Now it is to be expected that the existence of health facilities and doctors would encourage a greater dependence on public health facilities. For instance in Budge Budge-I, the number of beds per population is high and the number of doctors per lakh is also high, the percentage of patients to total population is high. On the other hand, Kakdwip and Canning I, despite having satisfactory beds and doctors per population, have failed to attract the population to the public health sector to the same extent. We have therefore estimated a ***correlation matrix*** between these parameters. This matrix shows that while there is a strong association between beds per 10,000 population and doctors per lakh population, the correlation of both these infrastructural parameters with the proportion of patients in population is fairly weak.

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Table 6.7: Correlation Matrix between Blockwise No. of Beds, No. of Doctors and No. of Patients (adjusted for Population)

	No. of Beds per 10,000 pop	No. of Doctors per lakh Pop
No. of Beds per 10,000 Population	1	
No. of Doctors per lakh Population	0.723805	1
% of Ward Patients to Total Population	0.316698	0.240788
% of Outpatients to Total Population	0.2832	0.340442
% of Total Patients to Total Population	0.290417	0.342668

6.3.2 Infrastructural Gaps following existing National Norms

The above analysis indicates that there is scope to improve the situation with respect to the provisioning of health infrastructure. This raises the question as to the extent to

Table 6.8: Existing National Norms for Rural Primary Healthcare Facilities

Items	Norms
At least one Trained Dai	For each village
One Trained Village Health Guide	For each village per 1,000 population
One SC	For 5,000 population in plain area and for 3,000 population in tribal, hilly and backward areas
One PHC	For 30,000 population in plain area and for 20,000 population in tribal, hilly and backward areas
One Community Health Centre	For every 1-1.20 lakh population, serving as a referral institution for 4 PHCs

Table 6.9: Infrastructural Gaps in the Healthcare system in South 24 Parganas

Block	PHC/ 30000 pop	No.of Required PHCS	Deficit in PHCs	SC/ 5000 pop	No.of SCs Required	Deficit in SC's	CHC per 1.20 lakh pop	Required No.of CHCs	Deficit CHCs	No.of FHAs / village	FHAs / '000 pop	Required No.of FHAs / '000 pop	Deficitin No.of FHAs
Thakurpukur-Mahestala	0	5	5	0.69	27	8	0.88	1	0	0.29	0.14	137	118
Budge Budge I	0.6	3	1	0.7	20	6	1.2	1	0	0.35	0.14	100	86
Budge Budge II	0.35	6	4	0.69	35	11	0.69	1	1	0.36	0.14	173	149
Bishnupur I	0.29	7	5	0.68	41	13	0.58	2	1	0.33	0.14	206	178
Bishnupur II	0.16	6	6	0.68	38	12	0.63	2	1	0.33	0.14	191	165
Sonarpur	0.54	6	3	0.69	33	10	0.72	1	1	0.31	0.14	167	144
Baruipur	0.26	12	9	0.68	70	22	0.34	3	3	0.21	0.14	351	302
Bhangar I	0.15	7	6	0.68	41	13	0.59	2	1	0.19	0.14	204	176
Bhangar II	0.29	7	5	0.67	42	14	0.58	2	1	0.25	0.13	208	180
Falta	0.14	7	6	0.68	44	14	0.54	2	1	0.17	0.14	222	192
Diamond Harbour I	0.45	4	2	0.67	27	9	0.9	1	0	0.19	0.13	133	115
Diamond Harbour II	0.36	6	4	0.67	33	11	0.73	1	1	0.17	0.13	165	144
Magrahat I	0.18	5	4	0.94	33	2	0.73	1	1	0.24	0.19	165	134
Magrahat II	0.3	7	5	0.91	40	4	0.61	2	1	0.27	0.18	198	162
Kulpi	0.49	8	4	0.68	49	16	0.49	2	2	0.14	0.14	243	210
Mandirbazar	0	8	8	0.55	46	21	0.53	2	1	0.25	0.11	228	203
Canning I	0.12	8	7	1.14	49	-7	0.49	2	2	0.9	0.22	245	190
Canning II	0.15	7	6	1.15	39	-6	0.61	2	1	0.28	0.23	196	151
Basanti	0.32	9	6	1.13	56	-7	0.43	2	2	0.85	0.2	279	224
Gosaba	0.27	7	5	1.14	45	-6	0.54	2	1	0.27	0.15	223	190
Joynagar I	0.27	7	5	1.14	44	-6	0.55	2	1	0.37	0.23	219	169
Joynagar II	0.43	7	4	1.12	42	-5	0.57	2	1	0.41	0.22	209	162
Mathurapur I	0.23	9	7	0.71	52	15	0.46	2	2	0.23	0.14	262	226
Mathurapur II	0.49	6	3	1.23	37	-8	0.66	2	1	0.38	0.25	183	138
Kultali	0.64	6	2	1.14	38	-5	0.64	2	1	0.83	0.23	188	145
Patharpratima	0.31	10	7	1.13	58	-7	0.42	2	2	0.49	0.15	288	245
Kakdwip	0.25	8	6	1.13	48	-6	0.5	2	1	0.28	0.22	239	187
Namkhana	0.75	5	1	1.15	32	-5	0.75	1	1	1	0.23	161	124
Sagar	0.48	6	3	1.13	37	-5	0.65	2	1	0.3	0.19	186	150

which the existing set up must be expanded. In this section we attempt to estimate the number of additional Sub Centres, PHCs, Community Health Centres (CHCs) and Female Health Assistants (FHA) required in the district.

Based on the national norms for provisioning of health infrastructure, the number of such units required in each block has been estimated. This is then compared with the actual number of units currently existing to measure the infrastructural gap.

The health infrastructure in most of the blocks are characterised by varying extents of deficiency. Only in the case of Sub-centres in Sundarban blocks is there is a surplus – with the exception of Mathurapur-I, where there is a large deficit.

The average level of deficit with respect to number of PHCs, SCs, CHCs and FHAs are 5, 4, 1 and 171 per block, respectively. The actual extent of deficit does not vary substantially across blocks except in the case of Sub-centres. In case of the latter, Baruipur, Mandirbazar and Mathurapur-I have the highest deficiency.

6.3.3 An Overall Assessment of Carrying Capacity

The correlation matrix of deficits in these four parameters shows that blocks with deficits in CHCs and FHAs also have high deficits in PHCs. Similarly, blocks lagging behind national norms with respect to CHCs also lag behind in number of FHAs. Based on this analysis, we recommend that investment be undertaken in all four parameters (PHC, SC, CHC and FHA) – it is not enough to single out any of the four parameters for specific attention while making block-wise plans.

Table 6.10: Correlation between Deficits of PHCs, SCs, CHCs and FHA

Correlation	Deficit in PHCs	Deficit in SC's	Deficit CHCs	Deficit in FHA
Deficit in PHCs	1			
Deficit in SC's	0.244	1		
Deficit CHCs	0.804	0.043	1	
Deficit in FHAs	0.823	0.233	0.969	1

6.4 Endemicity of Diseases in the District

6.4.1 Vector Borne Diseases

Inhabitants of backward villages of South 24 Parganas, specially of the riverine blocks of the Sundarban area, suffer from malnutrition and various diseases of which vector borne diseases and water & food borne diseases are

Table 6.11: Incidence of Several Diseases during 2001-2006

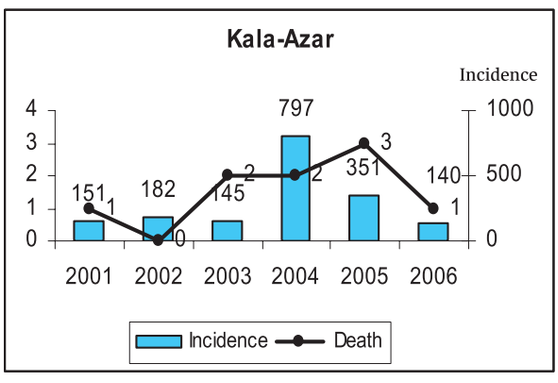
Year		2001	2002	2003	2004	2005	2006
Kalaazar	Incidence	151	182	145	797	351	140
	No. of Deaths	1	0	2	2	3	1
Malaria	Incidence	429	1580	592	803	1167	951
	No. of Deaths	0	3	2	2	4	3
Pneumonnia	Incidence	2832	4459	4298	3301	2199	4969
	No. of Deaths	0	5	6	20	19	25
Enteric Fever	Incidence	1377	1817	1318	2158	7152	2543
	No. of Deaths	2	2	0	0	0	1
Diarrhoea	Incidence	230753	240478	14411	132657	138013	126970
	No. of Deaths	17	48	21	62	23	32
Hepatitis A	Incidence	63	220	206	413	531	314
	No. of Deaths	2	13	2	10	1	0

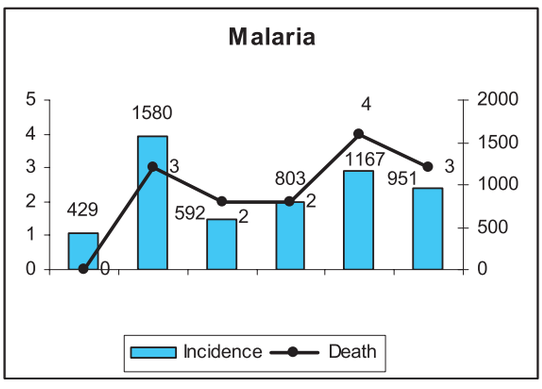
Source: Office of CMOH, South 24 Parganas

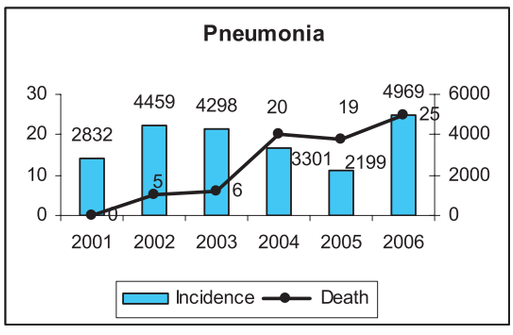
of prime importance. Due to their poor socio economic status, low level of education, inadequate sanitation, unsafe water supply and poor housing facilities, people of this district suffer from vector borne disease like Kala-azar. Malaria is also on the rise, while the incidence of Filaria remains another area of concern.

A total of 1766 cases in ***Kala-azar*** were recorded in the district from 2001 to 2006. But the number of cases has decreased significantly from 351 to 140 between 2005

Figure 6.3: Incidence of Vector Borne Diseases and No. of Reported Deaths







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and 2006. Ten blocks have reported cases of Kala-azar, out of which 4 blocks of Canning Sub Division (Canning-I, Canning-II, Gosaba, Basanti) are endemic blocks. The highest number of cases has been reported from Basanti block as follows: 2006- 86 cases, 2005- 331 cases, 2004- 666 cases, 2003- 84 cases, 2002- 104 cases, 2001- 75 cases. Though endemicity of the disease is reported from all parts of the block, GP Phul

Table 6.12: No. of *Kala-Azar* Cases and No. of Deaths during 2004-2006

Block/ Municipality	2004		2005		2006	
	No. of Cases	No. of Deaths	No. of Cases	No. of Deaths	No. of Cases	No. of Deaths
Gosaba	16	0	27	0	6	1
Basanti	666	2	331	2	86	0
Canning- I	57	0	42	0	16	0
Canning- II	55	0	86	0	32	0
Kulpi	0	0	1	0	0	0
Kultali	0	0	4	0	0	0
Baruipur	2	0	2	0	0	0
Bhangar - I	0	0	1	0	0	0
Patharpratima	1	0	0	0	0	0
Sonarpur	0	0	0	0	0	0
Total	**797**	**2**	**494**	**3**	**140**	**1**

Source: Office of CMOH

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Malacha and Kathalberia are the villages most affected. There has been one death due to Kala-azar in the year 2006 in Gosaba block. A blockwise report of Kala-azar for most affected blocks is given in Table 6.12.

Another vector borne disease that recurs with regular frequency in South 24 Parganas is ***Malaria***. In 2006 951 cases were reported, mainly from Canning Sub Division (Canning-I, Canning-II, Gosaba, Basanti), Diamond Harbour Sub Division (Diamond Harbour-II, Magrahat-I, Kulpi, Mathurapur-II) and Namkhana blocks. One fatality each was also reported from Canning-I, Sagar block and Kulpi block in 2006.

Attempts to combat such diseases fall under the National Vector Borne Disease Control Programme (NVBDCP). Regular spraying programmes are carried out in *Kala-azar* and Malaria prone areas. National Anti Malaria Programme (NAMP) is another attempt to eradicate Malaria. Attempts are made to sensitize residents about the benefits of using mosquito nets. Radical treatment for those who have caught either of the two diseases has usually managed to avert fatalities. Advocacy workshops are also conducted on a regular basis in the ten affected blocks for *Kala-azar*.

The economic costs of such diseases are substantial, particularly if the bread earner is affected by the disease. To reduce such costs, the Office of the Chief Medical Officer, South 24 Parganas, had proposed introduction of the following package in 2007:

- Compensation of the daily wages of the *Kala-azar* patient admitted in Hospital. This will entail an outlay of Rs.7.28 lakhs.

- Medicated mosquito net to be distributed free of cost to poor needy families living in *Kala-azar* affected blocks. The total cost of this component will be Rs.25.8 lakhs.
- Another Rs.12 lakh will be spent on providing water filters in arsenic affected areas.
- Provisioning of temporary support for laboratory support for each block with a microscope for diagnosis of vector-borne diseases. This will cost Rs.3.48 lakhs.

The total number of persons affected by **Lymphatic Filariasis,** another vector borne disease, in 2004-05 was 1542, out of which more than 50% were detected from Canning-II (289 cases), Kulpi (133 cases), Mathurapur I (121 cases), Diamond Harbour-I (104 cases) and Magrahat-I (102 cases). Almost half of the reported cases pertained to Hydrocele.

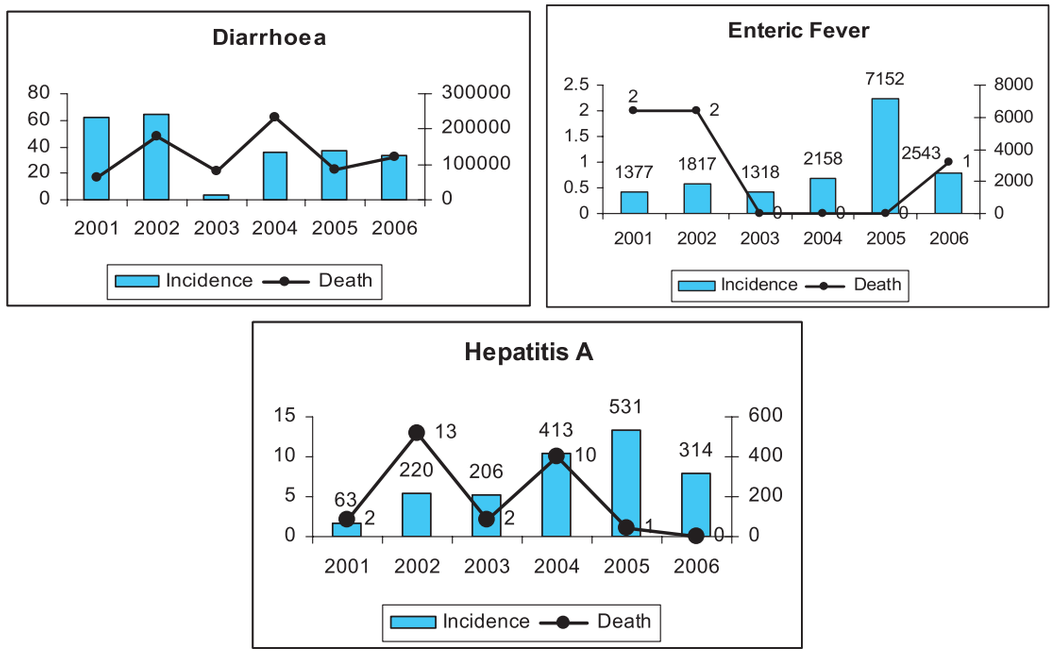
The basic strategy of intervention is Mass Drug Administration, based on a single dose of Diethycarbamazine Citrate (DEC). This is a relatively cheap method of intervention compared with other vector control strategies. The drug is safe and effective for human lymphatic filariasis. In the first case, it is usually the patient who is in need of help and therefore he or she is more likely to comply with the treatment. This reduces morbidity of affected persons and interrupts disease transmission. In a community, however, only a small proportion of the population is suffering from acute clinical filariasis at any one time and therefore only a few people will feel the need for help.

6.4.2 Water and Air borne Diseases

Among water borne diseases the incidence of ***Diarrhoea*** in the District is alarmingly high, with 1.27 lakh cases being treated in 2006. The number of fatalities that year was 32; this amounts to 6.53% of the total diarrhoea cases occurring in West Bengal and 4.93% of total death due to diarrhoea occurring in the state. A review of diarrhoeal diseases for the last 5 years show that the incidence of the disease reported to hospitals has decreased gradually regarding number of cases. However, the number of cases reported to indoor due to Diarrhoea has increased substantially over the last three years (31862 in 2006 compared to 21206 in 2005 and 9134 in 2004). The incidence of death has also increased compared to last year.

The blocks of Canning I/II, Mandirbazar, Budge Budge-I as well as Magrahat I are diarrhoea prone blocks reporting high incidence through the year, peaking substantially during the rainy season from June to October. Poor water supply and environmental sanitation are major causes of the high incidence of diarrhoea in these above mentioned blocks. Since diarrhoeal infections spread through the use of contaminated water, the District Health Action Plan 2007-08 is emphasizing on focused intervention that combines the

Figure 6.4: Incidence of Water and Air Borne Diseases and Reported Deaths



provision of safe drinking water to rural residents with improved sanitation and mass education on the effective use of oral rehydration therapy.

Enteric fever is another water-borne disease posing a severe health hazard problem. A total of 2546 cases were reported in 2006 compared to 7152 cases reported in 2005 – that is a decrease of 35.6%. The maximum number of cases of this water borne disease has been reported from the riverine blocks of Gosaba, Canning I and II, Mandirbazar, Namkhana, Sagar and some blocks of Alipore Sub Division like Budge Budge-I & Bishnupur-I. The lone death due to Enteric Fever has occurred in Canning-I block during 2006. The main causes for the endemicity of the disease is contaminated food and water, particularly in remote riverine blocks and slums in Budge Budge-I block. Low education levels in blocks like Magrahat-I and II, Mathurapur-I and II and high rates of migration from other neighbouring areas pose major problems in controlling the spread of enteric fever.

The total number of cases reported of ***Viral Hepatitis*** in 2006 was 314 (with no death) compared to 531 reported cases in 2005, with 1 death. There has been a decrease of 59.1% in the reported incidence of the disease.The majority of the cases has been reported from Matherdighi, Namkhana, Sarisa, and Amtola Rural Hospitals and Vidyasagar State General Hospital. There has been one outbreak in Matherdighi between September to December last year due to flood and cyclone in the first week of October. The main reasons behind the endimicity of disease in Canning-II block are poor quality of food and water supply and low level of education.

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Arsenicosis is another major health issue in South 24 Parganas. A total of thirty six cases with one death in have been reported till June 2006. In earlier years thirty eight and ninety nine cases were reported in 2005 and 2004 respectively, without any deaths. In 2004 the highest number of cases had been reported from Baruipur (58 cases) followed by Bhangar-I (38 cases). In Baruipur 14 GPs and in Bhangar-I and II 34 GPs had been affected by this problem. All the Arsenic affected nine blocks have completed advocacy training and BCC for NGOs and panchayat personnel, AWW and CHGs and are running Arsenic clinics. Government intervention has resulted in Baruipur being the only block still reporting a large number of cases (31 cases in 2006).

Air borne diseases also pose a major threat to different regions of the District. A review of report of last five years shows that incidence of ***Respiratory and Lung diseases*** are continuously increasing, mainly due to the significant increase in air pollution. In 2006, 110719 cases of Acute Respiratory Infection were reported with twelve deaths, compared to 117602 cases along with thirty deaths in 2005. Pneumonia is another air borne disease generating high risk. The total number of cases reported in 2006 is 4969 with twenty five deaths compared to 2199 cases with nineteen deaths in 2005. Thus there has been an alarming increase of 125% of incidence of Pneumonia with an increase of 31.5% deaths in 2006 compared to that in 2005. Details of OPD and IPD patients show that the attendance of patients for indoor treatment has increased from 583 cases in 2005 to 2070 cases in 2006 – an increase of 255%. Block-wise analysis indicates that Gosaba, Diamond Harbour-I, Bishnupur-I, Baruipur, Mandirbazar, Kulpi, Canning-I and Budge Budge-I blocks should be trgaetted for intervention. Intersectoral Coordination Meeting with general administration, Environmental Department and NGOs as well as training of PMWs for early detection of the diseases to prevent mortality are necessary to manage the outbreaks of these air borne diseases.

6.4.3 Revised National Tuberculosis Programme (RNTCP) and HIV Control

Tuberculosis continues to be a major health problem and number one killer of adults among all infectious diseases in India.

Government of India has reinitiated the Revised National Tuberculosis Programme for control of Tuberculosis among the poor people in villages where proper treatment and specialist hospitals do not exist.

The Revised National Tuberculosis Control Programme (RNTCP), based on the DOTS strategy, began as a pilot project in 1993 and was launched as a national programme in 1997. Rapid RNTCP expansion began in late 1998. Under the RNTCP, suspects are examined for TB, free of charge. The diagnosis of these patients and the follow-up of patients on treatment are

achieved through the examination of more than 50,000 laboratory specimens.

In the first phase of RNTCP (1998-2005), the programme's focus was on ensuring expansion of quality DOTS services. The RNTCP has now entered its second phase in which the programme aims at firstly consolidating the gains made to date, to widen services both in terms of activities and access, and to sustain the achievements for decades to come in order to achieve ultimate objective of TB control in the country.

All components of new 'Stop TB Strategy' are incorporated in the second phase of RNTCP. These are:

- Pursue quality DOTS expansion and enhancement, by improving the case finding and cure through an effective patient-centred approach to reach all patients, especially the poor.
- Address TB-HIV, MDR-TB and other challenges, by scaling up TB-HIV joint activities, DOTS Plus, and other relevant approaches.
- Contribute to health system strengthening, by collaborating with other health programmes and general services.
- Involve all health care providers, public, nongovernmental and private, by scaling up approaches based on a public-private mix (PPM), to ensure adherence to the International Standards of TB care.
- Engage people with TB, and affected communities to demand, and contribute to effective care. This will involve scaling-up of community TB care; creating demand through context-specific advocacy, communication and social mobilization.
- Enable and promote research for the development of new drugs, diagnostics and vaccines. Operational Research will also be needed to improve programme performance.

The Revised National TB Control Programme now aims to widen the scope for providing standardized, good quality treatment and diagnostic services to all TB patients in a patient-friendly environment, in whichever health care facility they seek treatment from. The programme has made special provisions to reach marginalized sections of the society, including creating demand for services through specific advocacy, communication and social mobilization activities.

A block-wise analysis reveals that the incidence of TB is high in Thakurpukur-Mahestala, Baruipur, Bhangar-II, Canning-I, Mathurapur-I, Sonarpur blocks. These blocks have to be singled out for specific policy attention.

Table 6.13: Performance of South 24 Parganas under RNTCP in 2007

Quarters in 2007	Population (in lakhs) covered by RNTCP	No. of Suspects examined	No. of Suspected examined per lakh	No. of Smear-positive Patients	% of Smear-positive Patients	No. of Patients registered for treatment
1	75	8665	116	966	11	1567
2	75	8635	115	1049	12	1756
3	75	9852	132	1096	11	1767

Source: Office of CMOH

Table 6.14: RNTCP Blockwise Report for 2nd Quarter, 2007

Block	No. of Adult OPD Patients Attended	No. Detected Smear Positive	No. Put on DOTs
Thakurpukur Mahestala	12825	112	116
Baruipur	15380	88	110
Bhangar-II	12543	81	86
Canning-I	14817	97	81
Mathurapur-I	8559	117	71
Sonarpur	22741	89	100

Box 6.1

Directly Observed Treatment (DOT)

DOT with short course chemo therapy is one of the prime means of treating the TB patients. This system has five components:

- **Political and administrative commitment.** TB is the leading infectious cause of death among adults. TB kills more men than women, yet more women die of TB than all causes associated with childbirth combined. Since TB can be cured and the epidemic reversed, it warrants the topmost priority, which it has been accorded by the Government of India. This priority must be continued and expanded at the state, District and local levels.
- **Good quality diagnosis.** Good quality microscopy allows health workers to see the tubercle bacilli and is essential to identify the infectious patients who need treatment the most.
- **Good quality drugs. An uninterrupted supply of good quality anti-TB drugs** must be available. In the RNTCP, a box of medications for the entire treatment is earmarked for every patient registered, ensuring the availability of the full course of treatment the moment the patient is initiated on treatment. Hence in DOTS, the treatment can never interrupt for lack of medicine.
- **Supervised treatment to ensure the right treatment,** given in the right way. The RNTCP uses the best anti-TB medications available. But unless treatment is made convenient for patients, it will fail. This is why the heart of the DOTS programme is "directly observed treatment" in which a health worker, or another trained person who is not a family member, watches as the patient swallows the anti-TB medicines in their presence.
- **Systematic monitoring and accountability.** The programme is accountable for the outcome of every patient treated. This is done using standard recording and reporting system, and the technique of 'cohort analysis'. The cure rate and other key indicators are monitored at every level of the health system, and if any area is not meeting expectations, supervision is intensified. The RNTCP shifts the responsibility for cure from the patient to the health system.

The new Stop TB Strategy published by WHO in 2006 has DOTS in the core with additional components to address TB/HIV and MDR-TB, health system strengthening, involvement of all care providers, engaging people with TB and affected communities, and enabling/promoting research. RNTCP is already implementing/ plans to implement the activities recommended under the new Stop TB Strategy.

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6.4.4 HIV Control

TB is the most common opportunistic infection in people living with HIV virus. As the HIV breaks down the immune system, HIV- infected people are at greatly increased risk of TB. Without HIV, the lifetime risk of developing TB in TB-infected people is 10%, compared to at least 50% in HIV co-infected. HIV is also the most powerful risk factor for progression from TB infection to TB disease. TB in turn accelerates the progression of HIV to AIDS and shortens the survival of patients with HIV infection. Thus, TB and HIV are closely interlinked. In India, there are an estimated over 5 million HIV-infected persons.

Table 6.15: Sentinel Surveillance Report

Sentinel Site	No. of Sample Tested	Total Positive	Prevalence
STD Clinic	247	8	3.24%
ANC	710	2	0.27%
FSW	250	20	8%

Source: Office of CMOH

With such large numbers of HIV-positive individuals in India, it is likely that HIV may worsen the TB epidemic in the absence of a robust TB control programme. However, even among HIV-infected people, TB can be cured. Directly Observed Treatment Short-course (DOTS) is as effective among HIV- infected TB patients as among those who are HIV negative.

Official reports of last 2 years as well as sentinel surveillance reports reveal that HIV infection is on the rise in South 24 Parganas. As per sentinel surveillance report 2005, South 24 Parganas had reported the 3rd highest number of HIV cases next to Kolkata and West Midnapur. Similarly the STD cases is also on the rise. The total number of HIV cases officially reported from January to December 2006 is 91. The total number of STD cases reported from January to March 2006 is 16 out 1323 samples tested. A main reason for this is the heavy movement of population in this District. South 24 Parganas is a District having border areas with Bangla Desh, many migrant populations, with many urban areas community up and many resorts and sight seeing spots developed. There is movement of people from other parts through out the year.

A comparative analysis of the data on HIV-positive cases and full blown AIDS cases in the District as on 31.12.2007 reveals their number to be 277 and 150, respectively.

Out of the 91 HIV-positive cases detected in 2006, the highest proportion has been detected in Bangur Hospital and by the CINI unit. The block-wise spread of AIDs is given below.

Figure 6.5: HIV Detection in Different Units: 2006

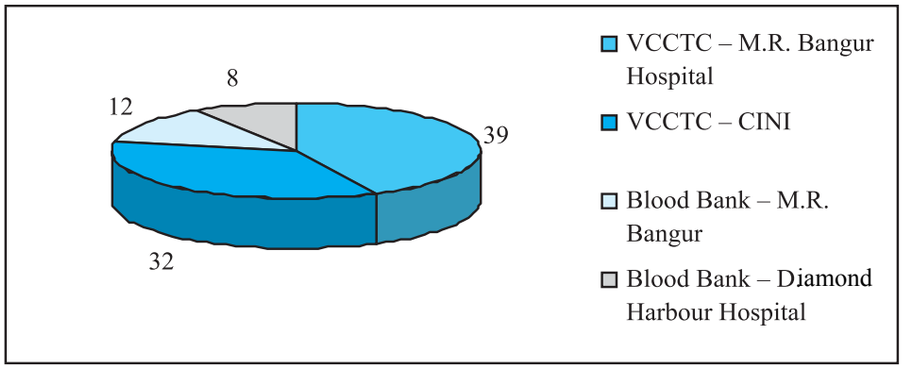

Table 6.16: Block-wise cases of HIV +ve /AIDS: January-June 2007

Area	List of HIV Positive/AIDS Cases
Budge Budge	20
Bishnupur	20
Sonarpur	14
Baruipur	10
Rajpur Sonarpur Municipality	12
Falta	8
Diamond Harbour	5
Magrahat I	10
Magrahat II	10
Canning I	14
Canning II	15
Basanti	17
Joynagar I	10
Kultali	5
Patharpratima	3
Kakdwip	2
Namkhana	10
Mathurapur	15
Total	**200**

The incidence of HIV+ve/AIDS cases is highest in Bishnupur and Budge Budge municipalities, followed by Sonarpur, Basanti and Magrahat-II. What is concerning to policy makers is the high proportion of children affected – as much as 11.5% of cases reported in 2007 were children.

The National Aids Control Project III financed by IDA, the arm of the World Bank that provides no-interest credits to the most needy countries, is expected to halt and reverse the HIV/AIDS epidemic by 2011, ahead of the 2015 target of the 6th Millennium Development Goal. This project has been implemented from April 2007 and accordingly targeted intervention will be taken to control the rising trend of STD and HIV in South 24 Parganas.

Apart from Government several NGOs

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are also playing crucial role to fight against this deadly disease. War against Tuberculosis has been one of the prime activities of SHIS. It has implemented the DOT program in over 1202 villages of South 24 Parganas.

6.4.5 National Leprosy Eradication Programme

A 100% centrally sponsored National Leprosy Control Programme (NLCP) had been in operation since 1954-55. With the introduction of highly effective MDT for cure of leprosy, the programme was redesignated as National Leprosy Eradication Programme (NLEP) in 1983 with the objective to achieve elimination of leprosy by reducing the caseload to less than one case per 10,000 populations.

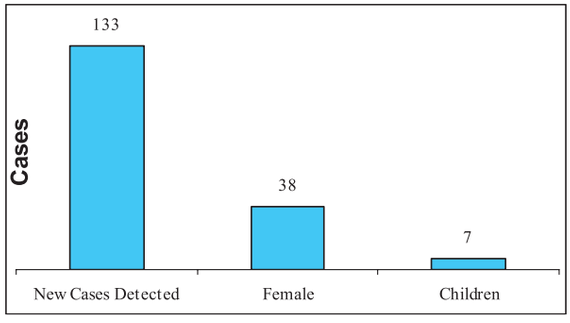
The programme received further thrust in 1993-94 when World Bank assisted first National Leprosy Elimination Project was started and the whole country was brought under MDT services with strengthening of existing services, intensive health education, trained manpower development, disability prevention and care including reconstructive surgery. This First NLEP ended on 30th Sept. 2000. The World Bank supported 2nd NLEP started w.e.f year 2001-02 for 3 years, wherein:

1. The NLEP has been decentralized to States/UTs and Districts with responsibilities for planning, implementation, supervision and timely corrective measures.
2. Leprosy services have been integrated with General Health Care System in the country to increase their out reach with extensive community education and involvement.
3. All General Health Care functionaries have been oriented in leprosy (Technical & IEC),

NLEP Simplified Information System has been placed in operation for concurrent monitoring, supervision and timely corrective measures under the programme at different levels of implementation.

Analysis of block-wise figures obtained from CMOH shows a high incidence of leprosy cases in Kakdwip (22), Canning-II (17), Rajpur-Sonarpur Municipality (14) and Mathurapur-II (13). The Health Department must focus on these blocks while implementing the NLEP.

Figure 6.6: Leprosy Cases April-June 2007: South 24 Parganas



6.4.6 Snake Bites in Sundarbans

Given the low-lying nature of a large part of the District, the incidence of snake bites is traditionally high in South 24 Parganas. Snakebite is a common problem in the Sundarbans and it results in death in many

cases. Even bites from non-poisonous snakes cause trauma, as people do not have information about the features that distinguish poisonous snakes from non-poisonous ones. Every year traditional honey collectors going deep into the forests from February to April face the risk of losing their life to bites by poisonous snakes like the cobra, krait and Russell's viper. The villagers, especially the women, who are engaged in collection of prawn seed in the rivers and streams/estuaries are also vulnerable to this problem. There have been 8 reported deaths from January-June 2007, compared to 15 in 2006. According to data provided by CMOH, the highest incidence of snakebites in September 2007 was reported from Dwariknagar BPHC (99 cases), followed by Madhavnagar BPHC (45 cases) and Canning SD Hospital (23 cases). Cases of snakebites are also reported from Nalmuri, Falta, Kulpi, Basanti, Gosaba, Sarsuna, Magrahat, Chandi Daulatabad and Sarisha BPHCs, Sonarpur, Joynagar, Amtala, Mathurapur, Raidighi and Sriramkrishna RHs, and Baruipur and Kakdwip SDHs.

Treatment for snake bites is usually done by *ojhas*. In most cases of snakebite, the affected persons do not receive the correct treatment as anti-venom is not available in the islands. The Sundarban Development Board has launched a year-long programme to impart training to quacks on how to deal with snake-bite cases. The NGO, World Wildlife Fund (WWF), will be collaborating with the Sundarban Development Board in the programme.

6.4.7 Blindness

Apart from eradicating the above-mentioned communicative diseases, another mission of the District to eradicate blindness under the National Programme for Control of Blindness (NPCB). Number of cataract surgeries has increased continuously from 8861 cases in 2004 to 10129 cases in 2005 and the number has crossed 12000 cases in 2006. NGO-Government partnerships are working very well in several blocks of Canning SD, Mandirbazar, Bhangar-I and II.

6.4.8 An Overall Assessment of Endemicity of Diseases

To sum up, while geographically specific problems like arsenic contamination and snakebites still require attention, vector borne diseases and diseases spread through food and water (like diarrhoea) comprise the major health problems in the district. While the government has introduced measures to combat the latter, their success crucially depends upon the socio-economic status of the population. The programmes of the Health Department must therefore be integrated into a *multi-dimensional holistic policy* to improve literacy (and hence awareness), sanitation and housing facilities and the provisioning of safe drinking water.

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6.5 Maternal and Child Health Issues

Maternal and child health is crucial in health care related issues and provisioning of health care facilities. The reason is that both are crucial in determining the health and productivity of future generations. The Government of India has repeatedly taken steps to strengthen maternal and child health services in the country, starting during the First and Second Five-Year Plans (1951–56 and 1956–61) under the Ministry of Health, and continuing with the Minimum Needs Programme initiated during the Fifth Five-Year Plan (1974–79). More recently, efforts to improve maternal and child health have been enhanced by activities of the Family Welfare Programme and by the introduction of the Child Survival and Safe Motherhood Programme (Ministry of Health and Family Welfare, 1992). The Ministry of Health and Family Welfare has also sponsored special projects under the Maternal and Child Health Programme, including the Oral Rehydration Therapy (ORT) programme, the establishment of Regional Institutes of Maternal and Child Health in states where infant mortality rates are high, the Universal Immunization Programme, and the Maternal and Child Health Supplemental Programme within the Postpartum Programme. These programmes are now integrated into the Reproductive and Child Health (RCH) Programme launched in 1996. This new programme seeks to integrate maternal health, child health, and fertility regulation interventions with reproductive health programmes for both women and men.

Maternal and child health services in rural areas of the country are delivered mainly by government-run Primary Health Centres and Sub-centres. Some major issues related to this area are

- Age at marriage including the issue of *birth order* and *birth interval*
- Family planning
- Nutrition and the prevalence of anaemia
- Maternal and reproductive health
- Immunisation

The GIS village level map is used to present a snapshot of the situation with respect to child and maternal health. Figure 6.7 shows the the spread of Maternity and Child Welfare Centres in the district. It can be seen that in most areas, such centres are absent. Villages in the Sundarban Region do have some Centres (1-4); their number is 7 only in two pockets in Region-II.

The performance of South 24 Parganas is satisfactory with respect to immunization as we have discussed in subsequent section. However, there is considerable room to improve the situation with respect to other parameters relating to child and maternal health. The status of maternal and child health problems in rural areas of South 24 Parganas are rooted in the widely prevalent

Figure 6.7: Number of Maternity and Child Welfare Centers

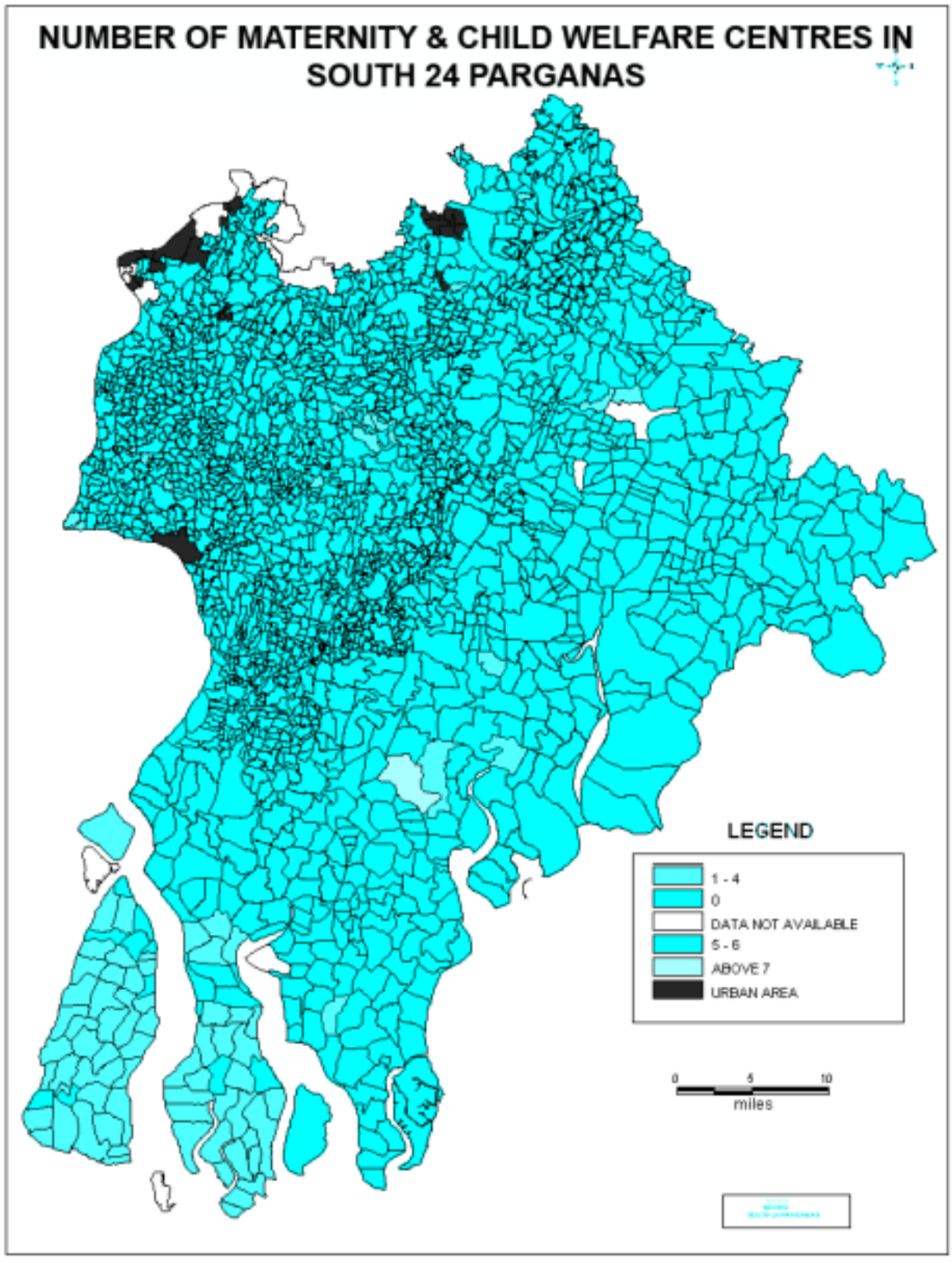

Table 6.17: Comparative Statement of Achievements under RCH Programe in South 24 Parganas: 2006-2007

Item	ELA for the Year 2006-07	Achievement up to the month	% of ELA Achievement of the Year	Last Year Achievement up to the same month	Comparison with the last Year of same month	Comparison with the last Year (%)
STERILISATION	11717	3525	30.08	2354	1171	50
IUD	10184	6445	63.29	6722	-277	-4
CC	128427	55858	43.49	46554	9304	20
OP	167261	87450	52.28	55972	31478	56
TT(PW)	156179	135316	86.64	122736	12580	10
FOLIFER(M)	156162	82747	52.99	89709	-6962	-8
BCG	140566	152768	108.68	151908	860	1
DPT	140566	136966	97.44	134304	2662	2
POLIO	140566	141732	100.83	130953	10779	8
MEASLES	140566	132638	94.36	129807	2831	2
VITA-A(1ST)	140566	128074	91.11	135011	-6937	-5
VITA-A(3RD-5TH)	421699	203060	48.15	191692	11368	6

Source: Office of CMOH, South 24 Parganas

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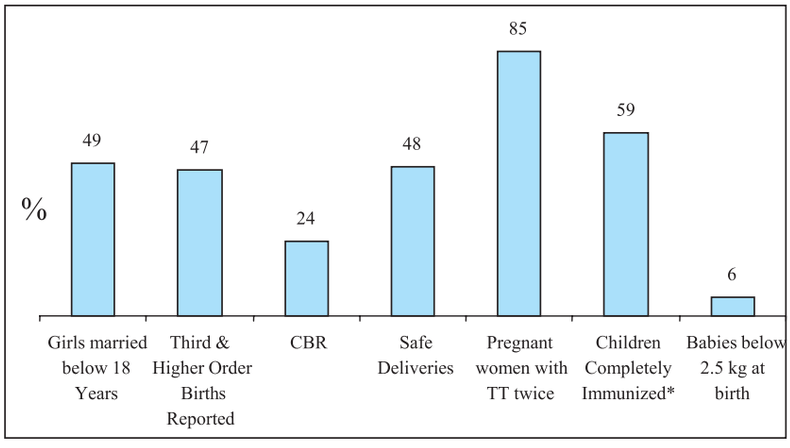
practice of early marriage, accompanied by high fertility. Contraceptive prevalence is still low in the district, as a result of which birth spacing cannot be practised efficiently by the parents. An analysis of these trends in the district is important to identify the blocks for improving maternal and child health.

6.5.1 Age at Marriage

Although there has been a slight decrease in the proportion of girls getting married before attaining the age of 18 years, this

Figure 6.8: DLHS/RCH Key Indicators - 1998-99



*DPT-3, Polio-3, BCG, Measles
Source: Health on the March, 2005-06

proportion still remains very high. The Rapid Household Survey undertaken in 2003-04 revealed that about one out of every two girls got married before reaching 18 years (Health on the March, 2005-06). This implies that such women have a *lengthy reproductive span*, leading to very high crude birth rates (CBR). The magnitude of the problem facing policy makers can be seen from the fact that about half of the married women record *3rd or higher order births*. Not only is this rate unacceptably high, but its adverse health implications are compounded by the fact that most of these deliveries do not occur in a safe environment. Less than half of the deliveries occur in an institutional set-up. The incidence of institutional or attended deliveries was only 48 percent in 1998-99; this proportion has decreased alarmingly to 39 percent in 2003-04. As a result of early marriage and pregnancy, the frequency of babies with low birth weight remains quite high.

6.5.2 Family Planning in South 24 Parganas

Under RCH programme family planning emphasizes the target-free promotion of contraceptive use among eligible couples, the provision to couples of a choice of contraceptive methods (including condoms, oral pills, IUDs, and male and female sterilization), and the assurance of high-quality care. An important component of the programme is the encouragement of adequate spacing of births, with at least three years between births for ensuring safe motherhood.

Analysis of blockwise data for 2006-07 (Table 6.18) shows that tubectomy is the commonly practised method of sterilization. The number of tubectomy cases is highest in the Sundarban areas – partly reflecting the high population in this area, and partly reflecting the large number of Government schemes targeting this area. Out of the five blocks recording highest number of tubectomy cases, four are in Sundarban region (Kultali, Canning-II, Patharpratima, and Basanti); only Baruipur lies outside the region. This is also true for IUD devices, OP cycles and *Nirodh* pieces distributed. Examining the prevalence of these methods among male (or female) population, the figures are not very flattering. The performance of blocks in Region-I is also satisfactory and generally better than the blocks situated in Region-II. The latter group of blocks perform better only with respect to oral pills and contraceptive use. The number of medically terminated pregnancies and abortions is the highest in Region-III, followed by Region-II. A blockwise picture of sterilization and other family welfare parameters are presented in Table 6.18.

Table 6.18 also shows that the number of cases of vasectomy is negligible compared to tubectomy cases, mainly due to the presence of government incentives. This indicates that there is scope to develop consciousness and acceptance of vasectomy in all blocks.

Table 6.18: Family Welfare Programme 2006-07

Block	Vasectomy	Tubectomy	Total Sterilization	I.U.D.	O.P. Cycles Distributed	Nirodh pieces distributed	M.T.P. cases	Abortion
Thakurpukur-Mahestala	0	120	120	64	5033	47160	32	11
Budge Budge - I	8	64	72	83	11899	77377	9	9
Budge Budge - II	0	3	3	103	5602	65161	24	22
Bishnupur - I	0	168	168	93	19426	117040	27	33
Bishnupur - II	0	0	0	45	24829	79151	0	84
Sonarpur	0	28	28	142	10081	73234	59	0
Region I: North West (Kolkata Surroundings	**8**	**383**	**391**	**530**	**76870**	**459123**	**151**	**159**
Baruipur	0	294	294	271	20751	100405	42	48
Bhangar I	0	121	121	183	9519	49726	12	6
Bhangar II	0	0	0	147	13901	66411	0	0
Falta	6	12	18	214	119897	185520	55	49
Diamond Harbour I	0	60	60	259	72960	291817	0	0
Diamond Harbour II	1	45	46	121	62650	297871	29	43
Magrahat I	0	88	88	162	80700	415983	10	3
Magrahat II	0	0	0	237	79797	154891	12	2
Kulpi	35	5	40	387	109546	200567	35	59
Mandirbazar	0	0	0	143	37773	216011	24	33
Region II: North East and Mid West	**42**	**625**	**667**	**2124**	**607494**	**1979202**	**219**	**243**
Canning - I	0	6	6	224	14115	74267	24	6
Canning - II	0	359	359	69	17375	73727	2	3
Basanti	0	249	249	25	34019	133675	8	30
Gosaba	0	172	172	108	13834	81777	87	70
Joynagar - I	0	0	0	126	13366	67642	2	4
Joynagar - II	0	60	60	960	16407	210500	0	0
Mathurapur - I	0	47	47	263	39145	125089	5	10
Mathurapur - II	0	9	9	368	78331	243862	3	35
Kultali	0	392	392	547	80065	196506	9	22
Patharpratima	0	298	298	230	60061	70869	20	69
Kakdwip	2	2	4	136	18071	84827	21	24
Namkhana	0	70	70	393	12777	78079	48	44
Sagar	0	0	0	72	22132	57136	0	0
Region III: South (Sundarbans)	**2**	**1664**	**1666**	**3521**	**419698**	**1497956**	**229**	**317**
Total	**52**	**2672**	**2724**	**6175**	**1104062**	**3936281**	**599**	**719**

Source: Office of CMOH, South 24 Parganas

6.5.3 Pregnancy and Maternal Morbidity

The issue of pregnancy and maternal deaths is related to several aspects like the following:

- Provision of antenatal care (ANC), including at least three antenatal care visits, iron prophylaxis for pregnant and lactating mothers, two doses of tetanus toxoid vaccine,

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detection and treatment of anaemia in mothers, and management and referral of high-risk pregnancies

- Encouragement of institutional deliveries or home deliveries assisted by trained health personnel
- Provision of postnatal care, including at least three postnatal visits
- Identification and management of reproductive tract and sexually transmitted infections

In rural areas, a female paramedical worker, called an auxiliary nurse midwife (ANM), is posted at a Sub-centre to provide basic maternal health, child health, and family welfare services to women and children either in their homes or in the health clinic. Her work is overseen by the lady health visitor (LHV) posted at the PHC. With regard to safe motherhood, the ANM is responsible for registering pregnant women, motivating them to obtain antenatal and postnatal care, assessing their health throughout pregnancy and in the postpartum period, and referring women with high-risk pregnancies. The ANM is assisted by a male health worker whose duties include motivating men to participate in the family welfare programme and educating men about reproductive tract and sexually transmitted infections. The ANM and LHV also assist the medical officer at the PHC where health services including antenatal and postnatal care are provided.

Apart from the Government, several NGOs have extended their hands to promote mother and child care activities. One such organization (SHIS) has become popular by working in different villages of South 24 Parganas and focuses on addressing the unmet RCH needs by delivering RCH services, in areas which are under-served or un-served by the government infrastructure. Proposed programme is aimed to enhance male involvement and partnership in improving the reproductive health status of women and children in four blocks of South 24 Parganas, viz. Namkhana, Kakdwip, Patharpratima and Kultali. The intervention also includes adolescent population. The community is mobilized and made more aware of their needs to generate demand for RCH services in the target region.

Antenatal Check-Ups : According to RCH programme a pregnant woman should have an antenatal check-up by visiting a doctor or another health professional in a medical facility, receiving a home visit from a health worker, or both. But the surveys regarding this issue reveal that rural areas of the country are far from receiving this type of care in most of the cases.

Two important issues related to antenatal care are ***Tetanus Toxoid Vaccination*** and ***Iron and Folic Acid Supplementation***. An important cause of death in infancy mostly in rural areas of our country is neonatal

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tetanus, which is caused by newborn infants becoming infected by tetanus organisms, usually at the umbilical stump. Neonatal tetanus is most common among children who are delivered in unhygienic environments and when unsterilized instruments are used to cut the umbilical cord. Tetanus typically develops during the first or second week of life and is fatal in 70–90 percent of cases. Two doses of tetanus toxoid vaccine given one month apart during early pregnancy are nearly 100 per cent effective in preventing tetanus among both newborn infants and their mothers.

Apart from the problem of tetanus, another threat to safe motherhood is nutritional deficiencies often exacerbated during pregnancy because of the additional nutrient requirements. Iron deficiency anaemia is the most common problem in this situation which not only poses threat to the mother but also to the health and survival of infants contributing to low birth weight, lowered resistance to infection, impaired cognitive development, and decreased work capacity. Improvement in a woman's nutritional status, coupled with proper health care during pregnancy, can substantially increase her child's birth weight. To this end, the provision of iron and folic acid (IFA) tablets to pregnant women to prevent nutritional anaemia forms an integral part of the safe-motherhood services offered as part of the RCH Programme. The programme recommends that pregnant women should consume 100 tablets of iron and folic acid during pregnancy.

In the absence of data it is not possible to comment on the coverage of pregnant women under the Antenatal Care schemes in different blocks of South 24 Parganas. However, given the early year of marriage and high CBRs, the number of pregnant mothers is likely to be substantially higher than the number of registered cases. This calls for steps to increase the coverage of women under the ANC schemes. Given the mobility of women - from their matrimonial home to maternal homes (during pregnancy) and return to matrimonial homes (after delivery) - it is difficult to keep a track of mothers who have been provided with the required ANC check-ups. The data collection and retrieval system has to be improved to take into account the mobility of expecting mothers.

The available figures presented in the following Table reveal that the percentage of registered mothers completing 3 ANC check ups is satisfactory only in Budge Budge-I and II, Bishnupur-I and II, Falta, Diamond Harbour-I and II, Magrahat-II and Mathurapur-I and II. The situation has to be improved in the Sundarban area (particularly in Joynagar, Kakdwip and Sagar blocks), and in Sonarpur and Baruipur blocks.

As many as one in five pregnant women

Table 6.19: No. of cases given Antenatal Care - 2006-07

Block	ANTENATAL CARE									
	No. of Case Registered for ANC	No. of Preg. 3 check ups	H.R.P.W.Referred			No.of TT Cases			Anaemia	
			Attended	Attended & treated	Referred to FRU	TT-1	TT2	Booster	No.of preg.-women under treatment for anaemia	No. of preg.-women given pro-phylaxis for anaemia
Thakurpukur-Mahestala	2527	1465	65	1	62	2008	1803	65	57	166
Budge Budge - I	1942	1444	71	0	71	2018	1906	196	282	629
Budge Budge - II	3645	2154	200	79	105	2991	2810	23	162	243
Bishnupur - I	4251	3329	290	29	261	4035	3855	191	707	723
Bishnupur - II	3897	2653	342	165	167	3416	3027	300	588	1013
Sonarpur	5726	2065	286	31	259	3897	3330	460	699	491
Region I: North West (Kolkata Surroundings	**21988**	**13110**	**1254**	**305**	**925**	**18365**	**16731**	**1235**	**2495**	**3265**
Baruipur	13282	4629	569	103	503	8515	7249	783	1663	4526
Bhangar I	5510	2829	93	0	93	4920	4325	607	584	804
Bhangar II	5402	3133	382	0	382	4757	4602	334	686	1102
Falta	5239	4500	364	31	333	5239	5116	28	1498	1471
Diamond Harbour - I	3764	2629	320	0	320	3496	3331	134	1334	1302
Diamond Harbour - II	3929	2828	337	0	337	3418	3356	293	946	1577
Magrahat I	5559	4242	437	357	80	5720	5449	261	1375	1481
Magrahat II	6054	5362	221	177	45	5781	5395	273	1277	2047
Kulpi	6541	4060	264	44	239	5738	5013	796	2438	2473
Mandirbazar	4686	2617	186	0	186	4125	3772	125	1919	1965
Region II: North East and Mid West	**59966**	**36829**	**3173**	**712**	**2518**	**51709**	**47608**	**3634**	**13720**	**18748**
Canning - I	9980	5245	1967	453	1282	8216	6122	434	88	111
Canning - II	6442	3447	240	136	120	5950	4536	479	1771	1711
Basanti	7015	3944	298	224	74	6961	5999	76	736	1557
Gosaba	3656	2173	251	217	34	3034	2608	173	356	903
Joynagar - I	5663	3482	836	160	607	4433	4002	855	455	914
Joynagar - II	5774	2335	225	78	95	4958	4527	816	1889	3038
Mathurapur - I	3854	2804	442	343	109	3767	3447	166	1372	1513
Mathurapur - II	3848	3265	231	89	123	4529	4257	29	1911	2420
Kultali	5293	2829	229	10	219	4740	4163	470	2085	2476
Patharpratima	6527	3402	228	178	52	5648	4553	310	1903	1761
Kakdwip	9420	2988	553	215	346	5305	5159	0	2088	3391
Namkhana	3416	2709	278	29	249	3402	3251	23	800	1365
Sagar	3770	1635	215	32	183	4029	3622	21	260	1641
Region III: South (Sundarbans)	**74658**	**40258**	**5993**	**2164**	**3493**	**64972**	**56246**	**3852**	**15714**	**22801**
Total	**156612**	**90197**	**10420**	**3181**	**6936**	**135046**	**120585**	**8721**	**31929**	**44814**

Source: Office of CMOH, South 24 Parganas

registered for ANC suffer from anemia. This proportion is highest in Region-II (23%), followed by the Sundarban region (21%). In Region-I, this proportion is relatively low, but still at an unacceptable 11%. In 15 blocks of the district, the incidence of anemia among the pregnant women is relatively high. Seven of these blocks are in Region-II (Falta, Diamond Harbour-I and II, Magrahat-I and II, Kulpi and Mandirbazar), and eight in Region-III (Canning-II, Joynagar-II, Mathurapur-I and

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II, Kultali, Patharpratima, Kakdwip and Namkhana). The proportion is highest in Mathurapur-II and Mandirbazar (above 40% in both cases). This has important consequences for both the mother and child – onone hand it leads to High Risk cases, on the other hand, it increases the possibility of mortality during birth and leads to a high proportion of babies with low birth weight. Community participation is very important in addressing these problems as concern for women, even pregnant women, is not very prevalent in rural areas of our society. The Integrated Child Development Scheme (ICDS) and NGOs have an important role to play in changing attitudes and addressing nutrition-related problems. This has been evaluated in a subsequent section.

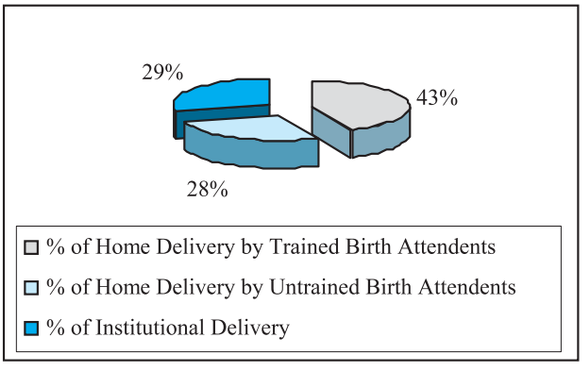
Place of Delivery

Another important thrust of the Reproductive and Child Health Programme is to encourage deliveries under proper hygienic conditions under the supervision of trained health professionals. Women who receive antenatal check-ups are more likely than other women to deliver in a health facility because their antenatal care providers are likely to have advised them to do so.

The proportion of safe deliveries is quite high throughout the district. Such deliveries include deliveries occurring in medical institutions or home deliveries assisted by Auxiliary Nurse Midwives (ANM). Decomposition of the proportion of safe deliveries reveals that less than half of the babies born are delivered in institutions.

Block-wise analysis shows that only in Diamond Harbour-II, Thakurpukur-Mahestala, Canning-I, Magrahat and Kulpi blocks the proportion of home deliveries exceed 50%. In Bhangar-II, Falta, Bishnupur-I and Bishnupur-II less than one out of every ten babies are born in medical institutions. Out of these four blocks, the proportion of home deliveries assisted by ANMs in Bhangar-II, Bishnupur-I and Bishnupur-II is high so that the proportion of safe deliveries is satisfactory. The situation in Falta is concerning as even the proportion of home deliveries assisted by ANMs is low. Blocks like Baruipur, Sonarpur and Sagar also require the attention of policy makers.

Figure 6.9: Delivery Status



While the proportion of safe births is quite high, the high dependence on home

deliveries assisted by ANMs remains a major area for concern. The reason is that ANMs generally do not reside within their service areas, so that they are not able to provide direct services during delivery.

The Government is attempting to increase the proportion of safe deliveries through the introduction of ***Janani Suraksha Yojana*** (JSY) and provisioning of referral transport facilities to poor and under-privileged families under the *Rogi Kalyan Samitis* at subsidized rates. The allocation under the latter was Rs. 18.85 lakhs in 2006-2007, but the CMOH estimates that a further Rs.35 lakhs is required to meet the targets. ICDS workers may be trained to keep track of pregnant mothers, and facilitate the access to transport services around the expected delivery date. The ***Ayushmati Scheme*** aims

Table 6.20: Status of Delivery 2006-07

Block	ICDS Centre	% of Institutional Delivery	% of Home Delivery by Trained Birth Attendents	% of Safe Deliveries	% of Home Delivery by Untrained Birth Attendents
Thakurpukur-Mahestala	219	59.56	23.11	82.67	17.33
Budge Budge I	104	48.41	32.59	81.00	19.01
Budge Budge II	100	25.71	51.58	77.29	22.71
Bishnupur I	172	8.68	63.03	71.71	28.30
Bishnupur II	217	7.07	66.67	73.74	26.26
Sonarpur	190	11.56	31.58	43.14	56.87
Baruipur	246	11.25	34.60	45.85	54.15
Bhangar I	151	29.28	57.55	86.83	13.17
Bhangar II	158	3.06	73.80	76.86	23.14
Falta	201	6.60	47.51	54.11	45.89
Diamond Harbour I	128	10.49	60.43	70.92	29.08
Diamond Harbour II	130	78.44	13.28	91.72	8.28
Magrahat I	227	54.52	25.40	79.92	20.07
Magrahat II	192	69.66	23.15	92.81	7.18
Kulpi	190	57.75	24.40	82.15	17.84
Mandirabazar	149	49.04	25.48	74.52	25.48
Canning I	170	59.01	16.15	75.16	24.84
Canning II	185	28.47	47.37	75.84	24.15
Basanti	229	29.68	40.81	70.49	29.50
Gosaba	184	15.13	61.01	76.14	23.85
Joynagar I	200	48.33	38.93	87.26	12.74
Joynagar II	148	24.46	51.03	75.49	24.51
Mathurapur I	165	28.10	45.43	73.53	26.47
Mathurapur II	160	18.12	49.26	67.38	32.62
Kultali	189	25.76	50.07	75.83	24.17
Patharpratima	225	26.15	42.33	68.48	31.52
Kakdwip	166	19.39	54.89	74.28	25.73
Namkhana	121	18.14	40.47	58.61	41.40
Sagar	137	18.89	24.80	43.69	56.30

Source: Office of CMOH, South 24 Parganas

Table 6.21: Block-wise distribution of Post Natal Care and Maternal Deaths, 2006-2007

Blocks	POST NATAL CARE		MATERNAL DEATHS		
	No. of women given 3 post natal check-ups	Complication referred to FRU	During pregnancy	During delivery	Within 6 weeks of delivery
Thakurpukur-Mahestala	1668	5	0	0	0
Budge Budge - I	1540	1	0	0	2
Budge Budge - II	1945	10	1	1	1
Bishnupur - I	3705	3	3	2	2
Bishnupur - II	2235	28	1	5	0
Sonarpur	1662	0	0	3	0
Region I: North West (Kolkata Surroundings)	**12755**	**47**	**5**	**11**	**5**
Baruipur	3743	2	1	7	0
Bhangar I	2813	8	0	1	0
Bhangar II	3246	28	0	3	2
Falta	4189	58	1	3	3
Diamond Harbour I	2600	26	0	2	8
Diamond Harbour II	2664	17	5	1	2
Magrahat I	3266	57	0	4	1
Magrahat II	4110	0	4	5	2
Kulpi	3905	2	3	1	0
Mandirbazar	2565	20	0	5	2
Region II: North East and Mid West	**33101**	**218**	**14**	**32**	**20**
Canning - I	4075	94	1	2	0
Canning - II	3485	19	2	0	2
Basanti	4237	16	1	14	2
Gosaba	1835	39	2	0	0
Joynagar - I	3966	16	2	1	2
Joynagar - II	874	0	0	0	0
Mathurapur - I	2876	60	3	3	5
Mathurapur - II	3367	0	0	1	1
Kultali	2684	15	1	1	0
Patharpratima	3259	22	1	2	0
Kakdwip	2717	38	5	5	5
Namkhana	2169	20	1	0	1
Sagar	597	4	0	0	0
Region III: South (Sundarbans)	**36141**	**343**	**19**	**29**	**18**

Source: Office of CMOH, South 24 Parganas

to provide free of cost emergency obstetric care through empanelled private health facilities under Public – Private Partnership (PPP) scheme to women belonging to BPL and SC/ST families holding JSY cards.

Since traditional birth attendants (*Dais*) and quack practitioners mostly attend to

home deliveries unattended by trained personnel. To tackle this problem, the Health Department has also attempted to train such traditional birth attendants through various training programmes. However, the trained *dais* may not attend the births. This has resulted in practices like the 'five cleans' and other precautionary measures not being adequately taken.

Several NGOs are also playing crucial role in training destitute women, widows, single mother, etc. as a Community Health Worker to stop the problem of unsafe deliveries. SHIS has introduced such training course in Bhangar – I and II, Canning – I and II, Kakdwip, Patharpratima and Namkhana of South 24- Parganas. It provides training to twenty destitute and marginalized women and girls in each block for six months. This trained community health workers, will provided basic health consultation and services to poor communities.

Postnatal Care

The health of a mother and her newborn child depends not only on the health care she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery. Postpartum check-ups within two months after the delivery are particularly important for births that take place in non-institutional settings. Recognizing the importance of postpartum check-ups, the Reproductive and Child Health Programme recommends three postpartum visits.

The number of recorded maternal deaths is quite low. However, the figures relate to registered pregnancies and may not reflect the actual maternal deaths. In the absence of data on actual pregnancies it is not possible to arrive at any conclusion regarding the actual status of maternal deaths. Most of these deaths occur during delivery; this does not speak well about the health care system in the District. It is necessary to identify to what extent the problem is due to lack of access to health care at the time of delivery and the extent to which the health care system itself may be at fault.

Data from the CMOH shows that maternal death from April 2007 to July 2007 was the highest in Kakdwip (8), followed by Basanti and Mandirbazar (5), out of 71 maternal deaths in South 24 Parganas.

In order to increase awareness about family welfare and maternal health related issues, the District Health Department has taken an initiative to organize Health Camps at the Gram Panchayat level. A record of these camps is given below for the half-year pertaining to 2007.

About one out of every hundred babies

is still born. This has to be lowered still further, particularly in Joynagar II, where one out of every twenty babies is still born. However, it should be noted that the data available with the CMOH may not reflect all the births; in particular, still born babies are likely to be reported less. This means that there may be a downward bias in the estimates of still born babies.

The proportion of underweight babies

Table 6.22: Block-wise Number of GP Based Health Camps, Jan-July, 2007

Block	Total No. of GPs in the Block	No. of GPs Where Camps Held	No. of Camps Held	Total No. of Patients Attended	Avg. No. of Patients per Camp
Thakurpukur-Mahestala	6	6	58	4595	79
Budge Budge - I	6	4	41	4619	113
Budge Budge - II	11	8	48	3379	70
Bishnupur - I	11	7	49	3509	72
Bishnupur - II	11	7	56	7772	139
Sonarpur	11	9	141	15144	107
Region I: North West (Kolkata Surroundings)	**56**	**41**	**393**	**39018**	**580**
Baruipur	19	17	123	10602	86
Bhangar I	9	6	44	3560	81
Bhangar II	10	5	29	4842	167
Falta	13	7	79	11737	149
Diamond Harbour - I	8	5	45	3107	69
Diamond Harbour - II	8	5	23	1955	85
Magrahat I	11	7	53	7212	136
Magrahat II	14	10	103	7912	77
Kulpi	14	7	71	12280	173
Mandirbazar	10	5	38	4440	117
Region II: North East and Mid West	**116**	**74**	**608**	**67647**	**1140**
Canning - I	10	6	65	6892	106
Canning - II	9	7	26	2928	113
Basanti	13	NA	NA	NA	NA
Gosaba	14	7	18	1312	73
Joynagar - I	12	7	81	6372	79
Joynagar - II	10	6	37	5878	159
Mathurapur - I	10	7	100	11434	114
Mathurapur - II	11	8	85	8000	94
Kultali	9	5	40	6798	170
Patharpratima	15	8	45	3677	82
Kakdwip	11	7	86	11176	130
Namkhana	7	6	36	1159	32
Sagar	9	5	40	2584	65
Region III: South (Sundarbans)	**140**	**79**	**659**	**68210**	**1217**
DISTRICT TOTAL	**312**	**196**	**1660**	**174875**	**105**

(with weights below 2.5 kg) also requires the attention of policy makers, particularly as in 13 blocks, this proportion is higher than the state average. In particular mention must be made of Joynagar II and Mathurapur I blocks where almost one out of four babies is under weight.

6.5.4 Immunization Programmes for controlling Infant and Child Mortality

Children are the first call on agenda of human resource development – not only because young children are the most vulnerable, but because the foundation for lifelong learning and human development is laid in these crucial early years. It is now

Table 6.23: Block-wise Number and Percentage of Babies by Status at Birth – 2006-07

Blocks	No. of Live Birth	% of Still Birth	% of New Born having weight less than 2.5 kg	% of New Born having weight 2.5kg or more	% of high risk new born referred to FRU
Thakurpukur-Mahestala	2185	0.64	8.10	76.66	0.23
Budge Budge - I	1820	1.32	7.91	75.66	1.26
Budge Budge - II	2815	1.35	10.83	68.77	0.32
Bishnupur - I	3738	0.88	4.63	93.79	0.19
Bishnupur - II	3434	1.40	12.84	70.44	3.12
Sonarpur	2278	0.31	10.10	65.41	0.00
Baruipur	8536	0.83	1.94	37.30	0.00
Bhangar I	4713	0.25	3.18	26.12	0.04
Bhangar II	4745	0.61	2.72	19.58	0.02
Falta	4889	0.84	11.76	71.90	3.72
Diamond Harbour I	2669	0.60	8.28	63.77	2.70
Diamond Harbour II	3462	1.27	1.53	5.14	0.20
Magrahat I	5111	0.53	3.17	58.91	4.97
Magrahat II	5561	1.11	6.78	60.55	0.04
Kulpi	5372	0.60	7.74	75.15	1.28
Mandirbazar		0.66	3.46	48.19	1.34
Canning - I	6433	0.89	8.22	86.72	0.00
Canning - II	5267	0.61	5.90	46.10	0.76
Basanti	6036	1.13	8.55	39.00	0.25
Gosaba	2972	1.08	7.17	59.49	1.04
Joynagar - I	5161	0.60	6.99	18.33	0.02
Joynagar - II	3976	5.26	24.47	45.17	0.00
Mathurapur - I	3935	1.25	23.71	77.15	0.08
Mathurapur - II	4503	0.76	8.37	89.45	0.33
Kultali	4169	0.74	4.82	16.43	0.00
Patharpratima	5030	0.85	12.64	141.29	0.28
Kakdwip	4891	0.86	7.63	60.70	0.74
Namkhana	3188	0.47	6.81	64.40	1.51
Sagar		0.41	6.44	21.71	0.00
Total	**123704**	**0.95**	**7.83**	**57.19**	**0.80**

Table 6.24: Achievement of Universal Immunisation Programmes: No. of Infants/Children Treated

Immunisation Programmes	Years	South-24 Parganas	West Bengal
TT(PW)	2004-05	121792	1481285
	2005-06	122736	1512125
DPT	2004-05	130112	1533887
	2005-06	13404	1621658
POLIO	2004-05	132050	1556175
	2005-06	130953	1605785
BCG	2004-05	141011	1784424
	2005-06	151908	1855722
MEASLES	2004-05	128299	1503905
	2005-06	129807	1520463

Source: Health on the March, 2004-05; Office of CMOH, 24 Pg(S)

globally acknowledged that investment in human resource development is a pre-requisite for economic development of any nation. Early childhood (the first six years) constitutes the most crucial period in life, when the foundations are laid for cognitive, social, emotional, physical/ motor development and cumulative lifelong learning. Child survival, growth and development, have to be looked at as a holistic approach, as one cannot be achieved without the others. There have to be balanced linkages between education, health and nutrition for proper development of a child.

Immunization of pregnant women and infants protects children from six vaccine preventable diseases- poliomyelitis, diphtheria, pertussis, tetanus, tuberculosis and measles. These are major preventable causes of child mortality, disability, morbidity and related malnutrition.

Table 6.24 presents data on number of babies immunized. These projects are evaluated by the Health Department using the concept of ELA (Expected Level of Achievement). The ELA figures are, however, ad hoc targets based on a mark-up over last year's achievements. They do not provide an accurate estimate of the success of the immunization programme. Further the mobility of mothers during pregnancy and after birth (from their matrimonial home to maternal home and back after delivery) creates complications in evaluating Immunization programmes, as babies may receive different doses of DPT and OPV in different places. The Health Department should therefore introduce a Universal Surveillance System based on unique Registration IDs for each mother and her child.

Figure 6.10: Immmunisation Coverage in South 24 Parganas

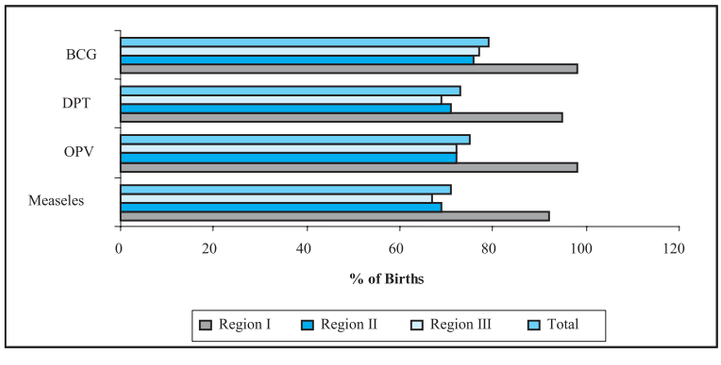


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Table 6.25: Reported Immunisation coverage in different Blocks: 2006

Blocks	No. of Live Births	No. and Percentage Immunised							
		BCG	BCG %	DPT3	DPT%	OPV3	OPV %	Measles	Measles %
Thakurpukur-Mahestala	2491	2794	112.16	2653	106.5	2661	106.8	2368	95.1
Budge Budge - I	2294	2135	93.1	2065	90.0	2067	90.1	1952	85.1
Budge Budge - II	3580	3143	87.8	2942	82.2	2963	82.8	2777	77.6
Bishnupur - I	4729	4284	90.6	4086	86.4	4131	87.4	4063	85.9
Bishnupur - II	4287	3400	79.3	3215	75.0	3502	81.7	3483	81.2
Sonarpur	2813	4113	146.2	4282	152.2	4401	156.5	3888	138.2
Region I: North West (Kolkata Surroundings	**20194**	**19869**	**98.4**	**19243**	**95.3**	**19725**	**97.7**	**18531**	**91.8**
Baruipur	11405	9821	86.1	7966	69.8	8149	71.5	7642	67.0
Bhangar I	6217	5082	81.7	4801	77.2	4794	77.1	4600	74.0
Bhangar II	6426	4873	75.8	5141	80.0	5160	80.3	4806	74.8
Falta	5724	4894	85.5	4798	83.8	4787	83.6	4728	82.6
Diamond Harbour I	4320	3125	72.3	2996	69.4	3114	72.1	3048	70.6
Diamond Harbour II	4864	3368	69.2	3577	73.5	3598	74.0	3252	66.9
Magrahat I	7572	5158	68.1	5191	68.6	5175	68.3	5068	66.9
Magrahat II	7918	5621	71.0	5319	67.2	5306	67.0	5398	68.2
Kulpi	8110	5578	68.8	4989	61.5	5255	64.8	4792	59.1
Mandirbazar	5478	3963	72.3	3553	64.9	3814	69.6	3540	64.6
Region II: North East and Mid West	**68034**	**51483**	**75.7**	**48331**	**71.0**	**49152**	**72.2**	**46874**	**68.9**
Canning - I	10225	8389	82.0	7002	68.5	7301	71.4	6867	67.2
Canning - II	9208	5982	65.0	5544	60.2	5807	63.1	5338	58.0
Basanti	9004	7351	81.6	6512	72.3	6941	77.1	6122	68.0
Gosaba	4816	3479	72.2	3080	64.0	3296	68.4	3136	65.1
Joynagar - I	7870	5422	68.9	4670	59.3	4616	58.7	4412	56.1
Joynagar - II	6821	5646	82.8	5129	75.2	5239	76.8	4842	71.0
Mathurapur - I	6014	3967	66.0	3435	57.1	3651	60.7	3298	54.8
Mathurapur - II	6598	4496	68.1	4190	63.5	4481	67.9	4084	61.9
Kultali	7000	5380	76.9	4837	69.1	4869	69.6	4805	68.6
Patharpratima	7126	6234	87.5	6182	86.8	6243	87.6	6239	87.6
Kakdwip	7021	5669	80.7	5022	71.5	5372	76.5	4862	69.2
Namkhana	4961	3379	68.1	3424	69.0	3469	69.9	3466	69.9
Sagar	3970	3972	100.1	3404	85.7	3775	95.1	3370	84.9
Region III: South (Sundarbans)	**90634**	**69366**	**76.5**	**62431**	**68.9**	**65060**	**71.8**	**60841**	**67.1**
Block Total	**178862**	**140718**	**78.7**	**130005**	**72.7**	**133937**	**74.9**	**126246**	**70.6**

Source: Office of CMOH

In the absence of such data, we have attempted an evaluation based on figures for births provided by the CMOH. These figures indicate the extent of unfinished tasks in the case of immunization. Regional analysis reveals the sharp difference in immunization levels between Region-I and the other two regions. Immunization level in Region-I is substantially higher than the District average. On the other hand, differences in immunization level between Region-II and III is marginal.

Within each region, blockwise variations in immunization level are minimal, particularly in the case of Regions II and III.

6.5.6 Coverage of ICDS

Integrated Child Development Services (ICDS) is a national program committed to the welfare of pregnant/ lactating women and children under six years old in India. Funded by UNICEF, ICDS has undertaken pilot projects - under the leadership of the Departments of Women and Child Development & Social Welfare and Panchayat & Rural Development – based on the use of the Positive Deviance (PD) approach in Nutrition and Child Care Program (NCCP) in South 24 Parganas along with several other Districts. Several local NGOs (CINI, ASHA, etc.) have been involved in the implementation of ICDS in such projects. The primary objective of ICDS is to improve the nutritional status of children under three years of age.

The PD informed project has enabled families to break the dependence on donated food, by

- Identifying cheap, locally available nutritious food which some families (PD) feed their healthy children as well as PD caring health-seeking and hygiene practices
- Bringing these food for preparation to the daily NCC session
- Feed their malnourished children a high calorie energy dense extra meal.

Under this initiative, behavioural change is emphasized through participatory learning and community mobilization to bring about the desired results. The guardians of the children bring food including vegetables, fish and eggs to the Anganwadi centre. The ICDS programme provides the centre with rice and pulses. All this is cooked together and a nutritious meal is fed to the children once a day. For twelve days in a month, mothers with undernourished children follow this regime. This is followed up by an 18-day break wherein care givers monitor the feeding practices in the respective child's homes and record progress. Every month the malnourished child is weighed and in most cases, mothers find their children gaining weight between 100 and 600 grams.

Box 6.2

ICDS in Bharu Ramkrishnapur

UNICEF reports show how people are involved in the ICDS scheme. They observed that Community Child Development Centre (Anganwadi centre) at Bharu Ramkrishnapur, a sleepy village in South 24 Parganas District of West Bengal seemed to be hosting a 'picnic'. The community kitchen, teeming with activity; toddlers happily banging their spoons on the steel plates filled with food while their mothers were coaxing their young ones to have another morsel. Amidst all the noise and laughter, Kavita Naskar, the energetic Anganwadi worker, was busy supervising the feeding session: 'Bachcha take aarek tu dao' (give the child a little more) she called out to one mother. This "picnic" was actually a collective feeding session for underweight and malnourished infants under the Positive Deviance (PD) approach, an intervention aimed at reducing malnutrition among children less than three years of age.

Mangala Karmakar, one of the workers associated with the PD approach in Bishnupur block, where Bharu Ramkrishnapur is situated, explains that PD has made a major impact in tackling malnutrition in the villages. The whole village is mapped and charts are drawn indicating the status of each child under different grades as per its nutritional status in the village. The charts stating the health status of each child are prominently displayed at the Anganwadi centres creating a sort of psychological impact on the mothers to improve the status of their children.

The whole programme is based on an integrated strategy consisting of convergence and partnership through capacity building of childcare functionaries and leaders of the community. This is done through Information Education and Communication activities and dissemination of information about improved methods of child care like breast feeding, immunization and hand washing, community based management of malnutrition through counselling and hands-on child care sessions. The unique feature about the Positive Deviance approach is that it focuses on the inherent strengths of the community and draws from the untapped resources available within the community.

Community mobilization has resulted in the following outcomes:

- Overwhelming positive response from communities in organizing and participating in various collective and creative activities at village level.
- Better relations and cooperation between

Table 6.26: Performances of AWCs

Functioning of AWCs		2004-05	2005-06
AWC	No. of AWCs Reporting	5142	5168
	No. of AWCs providing SNP for 21+ days in a month	4133	4694
Total Pop.Within Project	children 0-6 Years	733967	758077
	Preg & Lact. Women	104880	105984
No. of SNP Beneficiaries	children 0-3 Years	182267	225391
	3-6 Years	188231	227072
	Preg & Lact. Women	41616	61499
No. of PSE Beneficaries	No. of AWCs providing PSE for 21+ Day in a month	5128	5137
	Boys	66043	86567
	Girls	68438	90154
Classification of Nutritional Status	Normal	164693	212458
	Gr - I	140064	167055
	Gr - II	60006	66916
	Gr - III + Gr - IV	1898	1582
	Total No of Children Weighed	36661	448011

SNP: Supplementary Nutrition Programme
PSE: Pre School Education
Source: Health on the March

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diverse communities at village level (Muslims and Hindus).

- Emergence of new leaders and activists at the grassroots level.
- Empowerment of disaffranchised groups: emergence of committed women's groups, including adolescent girls, to improve childcare practices.
- At ICDS level, healthy competition between Anganwadi Workers (AWWs), increased staff interest, participation and dedication via new monitoring tools and skills, also better accountability to communities.

UNICEF has provided technical assistance as well as partly funding the programme wherever necessary. Progress is monitored right up the chain from the village level to the state level and corrective steps are taken to plug loopholes. Again, the women who used to meet at the Anganwadi Centres have formed self-help groups and in some cases even run income generation programmes. An aggregative picture regarding ICDS activities has been presented in the following Table. It can be seen that there has been an improvement across all parameters.

Table 6.27 provides blockwise data on enrolment of mothers and children. The number of enrolled mothers is high in Canning I, Kulpi and Basanti; the number of enrolled children is also correspondingly high in these blocks along with Baruipur. Thakurpukur-Mahestala block has the lowest enrolment figures. However, it is difficult to evaluate the success of ICDS until we have information on total number of eligible children. The number of deaths, particularly within 0-3 years, still remains high. The number of children aged 0-3 years who have died is high in Canning I, Sagar, Patharpratima, Basanti, Joynagar-I, Canning-II, Bauruipur, Mathurapur-I and Kultali (above 80). Statistics indicate that the period of greatest risk is 0-3 years and this age group should therefore be of particular focus in ICDS scheme.

Table 6.27: Block-wise No. of Enrolled Mothers and Children and Number of Deaths - 2007

Projects	Enrolled Pregnant Mother	Enrolled Nursing Mother	Enrolled Children 0-3 Years	Enrolled Children 3-6 Years	Children Death 0-3 Years	Children Death 3-6 Years
Thakurpukur-Mahestala	8052	11446	59942	63528	20	1
Budge Budge - I	10778	13052	67731	68573	34	3
Budge Budge - II	13770	15561	79902	65281	52	15
Bishnupur - I	20512	22731	104177	96793	31	10
Bishnupur - II	16296	18274	91637	86121	28	10
Sonarpur	13166	14785	82812	78292	38	14
Baruipur	26842	29944	169228	160519	112	6
Bhangar I	19167	20500	106433	118440	27	9
Bhangar II	25899	27822	144787	146174	58	6
Falta	20802	24405	118320	119093	59	4
Diamond Harbour I	20761	21886	104078	105474	22	12
Diamond Harbour II	16168	18079	87470	77327	52	18
Magrahat I	27885	31166	157154	129353	66	0
Magrahat II	25877	30482	153715	167455	66	11
Kulpi	33198	33194	167763	165115	64	3
Mandirbazar	17882	19490	103964	84694	51	10
Canning - I	32585	34367	185233	197287	80	4
Canning - II	21854	24945	138222	159468	110	3
Basanti	29470	31764	175935	148305	99	5
Gosaba	18132	18571	101043	102628	36	1
Joynagar - I	23413	29135	140960	155243	99	16
Joynagar - II	20870	23666	115308	134515	62	9
Mathurapur - I	15120	19558	102535	106314	118	0
Mathurapur - II	23556	22819	115450	116942	72	4
Kultali	25565	27735	146171	165746	129	1
Patharpratima	28647	30641	140336	140256	82	5
Kakdwip	23133	25055	120607	119138	28	15
Namkhana	12868	15279	95503	89103	6	13
Sagar		16843	88606	73245	80	12
Mahestala (U)	4893	8424	48929	70703	1	1
Behala	3280	5249	28084	29193	12	3

Source: ICDS, South 24 Parganas

Table 6.28 shows blockwise distribution by nutritional status. Since Grade-III and IV children are severely malnourished, they need clinical support and it is difficult to manage them at the community level, ICDS has little role to improve the condition of this category. The only thing the ICDS can do is that it can refer the child to appropriate level and appropriate time. On the other hand, ensuring that normal children remain normal even after six months lies at the heart of the ICDS programme; the window of opportunity for intervention is assumed to be between birth and 17 months of age of the children. Hence the major focus of ICDS is on Grade-I and II children

(constituting more than 50% of children enrolled under this scheme) as per norms prescribed by World Health Organisation as their needs can be managed at the community level and financial and administrative resources are allocated accordingly.

The blockwise data on nutritional status presented in Table 6.28 shows that the absolute number of Grade I and II children is lowest in Thakurpukur-Mahestala whereas the number is very high in Baruipur, Canning I, Bhangar I, Canning II, Basanti and Kultali.

The proportion of Grade I and II under-nourished children enrolled under the ICDS is quite high. About one out of every three

Table 6.28: Block-wise percentage distribution by Nutritional Status of Children under ICDS - 2007

Blocks	Normal	Gr-I	Gr-II	G III &IV	Total No. of Children under ICDS
Thakurpukur-Mahestala	53.7	35.6	10.4	0.3	69451
Budge Budge - I	49.9	39.0	11.1	0.1	135801
Budge Budge - II	53.0	34.9	11.7	0.4	169092
Bishnupur - I	52.0	38.3	9.4	0.3	198819
Bishnupur - II	52.0	34.6	12.5	0.9	190101
Sonarpur	53.8	34.6	11.5	0.1	151574
Baruipur	49.8	37.2	12.7	0.4	277098
Bhangar I	55.2	29.9	14.5	0.4	321015
Bhangar II	51.6	39.7	8.3	0.4	248885
Falta	55.3	32.0	12.0	0.6	212924
Diamond Harbour I	54.1	32.4	13.1	0.4	154682
Diamond Harbour II	46.5	38.3	14.8	0.4	109334
Magrahat I	47.3	37.4	14.5	0.9	202395
Magrahat II	46.6	36.2	16.9	0.3	221525
Kulpi	49.7	34.8	15.3	0.2	219002
Mandirbazar	40.6	41.2	17.8	0.5	139353
Canning - I	44.4	39.3	16.1	0.3	257117
Canning - II	39.3	38.8	20.9	0.9	247557
Basanti	48.8	36.7	14.1	0.4	306753
Gosaba	49.8	35.1	14.7	0.4	177980
Joynagar - I	41.9	39.9	17.8	0.4	198096
Joynagar - II	39.1	41.1	19.6	0.3	164643
Mathurapur - I	45.0	37.4	16.9	0.7	151793
Mathurapur - II	49.2	35.9	14.7	0.2	189767
Kultali	43.1	42.3	14.3	0.3	287100
Patharpratima	47.4	35.4	16.1	1.1	177006
Kakdwip	49.1	36.4	14.4	0.1	150310
Namkhana	53.6	32.5	13.7	0.3	160614
Sagar	42.7	39.9	17.3	0.1	144044
Mahestala (U)	65.7	28.0	6.2	0.1	57055
Behala	54.8	39.1	6.0	0.1	86210

Source: ICDS, South 24 Parganas

children is malnourished in Falta, having the lowest proportion of Grade I and II children. The situation is worst in Joynagar II (where six out of every 10 children suffer from Grade I or II malnutrition), followed by Canning II, Mandirbazar, Joynagar I and Sagar (with marginally lower figures). In as many as 17 blocks, at least half of the children suffer from Grade I or II malnutrition.

The proportion of Grade III and IV children is highest in Patharpratima and Bishnupur II, both in absolute and relative terms. The number of such children in Magrahat I is also very high and exceeds 1500.

6.5.7 Some Remarks on Maternal and Child Health Issues

Issues relating to maternal and child health are of crucial importance in human development. It is necessary to assess the performance of the district health care system in this respect carefully. Unfortunately, as discussed, the data generation and collection system contains major flaws. For instance, instead of looking at actual coverage of babies under immunization, ELA's are arbitrarily fixed on an ad hoc basis, and performance is measured against these arbitrarily set targets. This provides flawed indications of success to the District level authorities, who are unable to effectively monitor the situation and plan appropriate intervention strategies. We would suggest that a computerized Surveillance system be introduced at the state level based on actual coverage. Based on the data generated, some specific areas requiring urgent attention may be identified. Some of these areas are: safe deliveries, immunization, and ante-natal care. Further, it is necessary to supplement the measures introduced by the Health Department by awareness building programmes. Female literacy campaigns and workshops on maternal health at the school level may be introduced.

6.6 Quality of Drinking Water

6.6.1 Status of Drinking Water

During the last twenty five years there has been an overwhelming development in the field of drinking water supply in West Bengal; 90.28% of the rural population has been covered by Drinking Water Supply System up to 2002 against overall rural population coverage of only 14% in 1977. Rural piped water supply coverage on March 2002 was 24.56% increasing from 0.7% in 1977. The task was not easy in the background of varied hydro-geological conditions in different parts of the state bringing about different qualitative and quantitative problems. Public Health Engineering (PHE) Department is committed to retain this achievement in the field of drinking water supply and to step forward to ensure safe water for all.

6.6.2 Water Pollution

Groundwater, being inexpensive and safe, was used as the main source of drinking water in South 24 Parganas. But during the early phase of 1980s it was detected that some people were suffering from arsenical dermatosis. In 1983 it was observed by the working group of School of Tropical Medicine, Kolkata and All India Institute of Hygiene and Public Health that the samples of groundwater showed presence of Arsenic beyond Maximum Contaminant Level (MCL) of 0.05 mg / l even in some blocks of South 24 Parganas.

A recent study by SOES based on longitudinal data for 19 years has analyzed 8334 hand tubewell water samples from 1374 villages/Para/wards in 79 GP's/ Municipal area from 17 blocks of this District. The Table No. 6.29 shows the distribution of arsenic in tubewell water from South 24 Parganas District. The Table shows that arsenic concentration is above 10 µg/L in 3500 (42%) hand tubewells, above

Table 6.29: Arsenic Concentrations of South 24 Parganas

	Total No. of Samples Analysed	No. of of total samples in different arsenic concentration (µg/L) ranges								%of Samples with As >10µg/L	% of Samples with As >50µg/L	Max. conc. g/L (samples with As >1000µg/L
		up to 3	4-10	11-50	51-100	101-200	201-300	300-500	501-1000			
Baruipur	4594	2298	182	552	482	495	209	194	156	46.0	34.0	3700 (26)
Basanti	10	8	2	-	-	-	-	-	-	-	-	10
Bhangar I	239	127	15	36	16	20	9	13	3	40.6	25.5	810
Bhangar II	195	95	3	63	24	10				49.7	17.4	164
Bishnupur I	203	133	9	32	11	5	3	9	1	30.0	14.3	521
Bishnupur II	6	5	-	1	-	-	-	-	-	16.7	0	40
Budge Budge	43	38	3	1	-	1	-	-	-	4.7	2.3	125
Canning I	14	9	3	1	1	-	-	-	-	14.3	7.1	55
Canning II	8	2	3	1	-	1	-	-	1	25.0	11.5	130
Diamond Harbour	157	157	-	-	-	-	-	-	-	-	-	<3
Gosaba	4	4	-	-	-	-	-	-	-	-	-	<3
Joynagar I	175	101	4	16	16	19	12	5	2	40.0	30.9	590
Joynagar II	11	11	-	-	-	-	-	-	-	-	-	>3
Magrahat I	25	23	-	1	1	-	-	-	-	8.0	4.0	55
Magrahat II	301	123	1	25	28	50	32	18	23	58.8	50.5	1040 (1)
Sonapur	2270	1195	202	412	164	140	62	66	26	38.5	20.3	2480 (3)
Thakurpukur	79	79	-	-	-	-	-	-	-	-	-	<3
Total	8334	4408	427	1141	743	741	327	305	212	42.0	28.3	3700 (30)

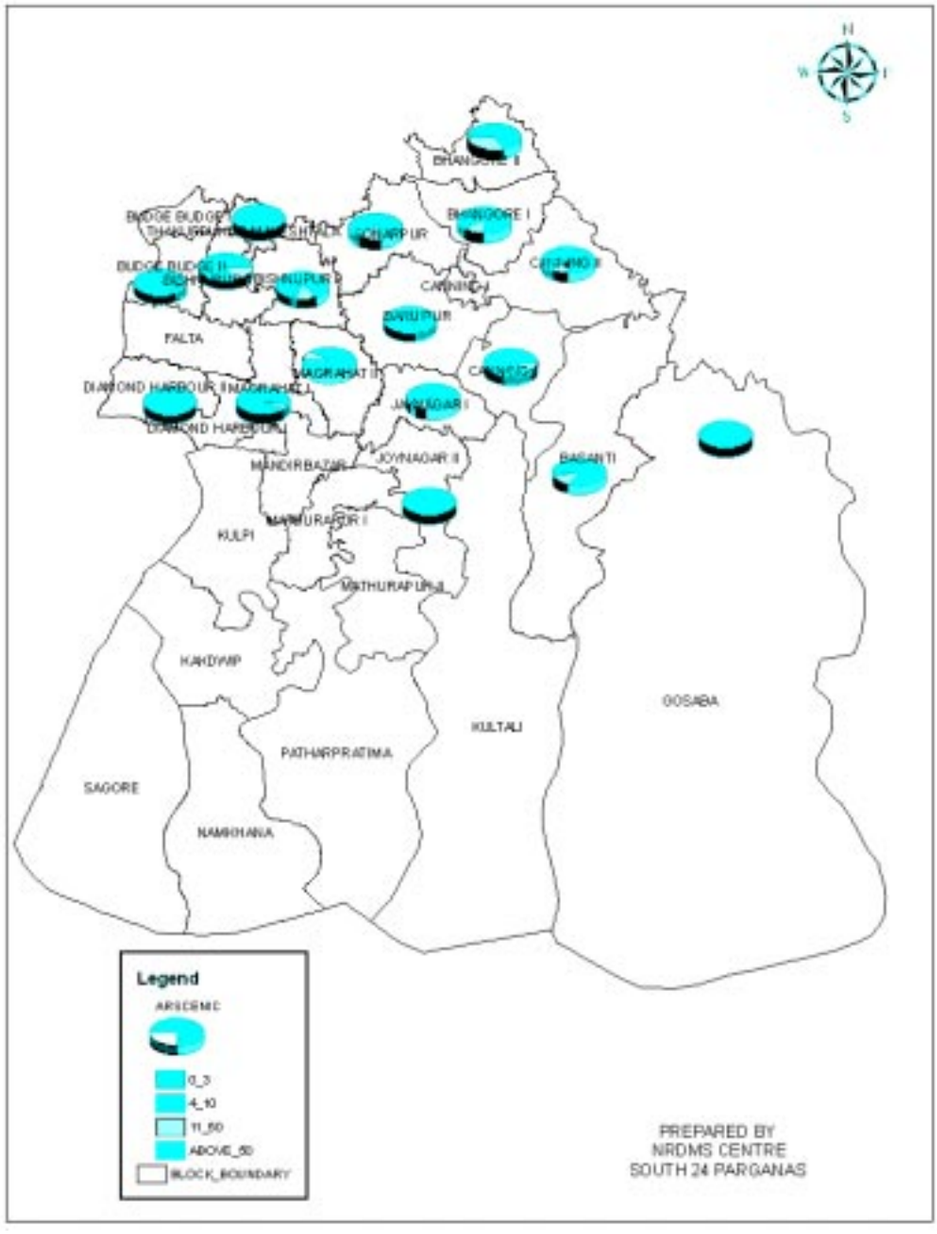
50 µg/Land in 2359 (28.3%) hand tubewells and above 300µg/L in 547 (6.6%) hand tubewells. From the above analysis, it appears that groundwater in 12 block contains arsenic above WHO guideline value of arsenic in drinking water (10 µg/L) and 11 blocks exceeds Indian standard value for *As* in drinking water (50 µg/L). Arsenic level above 1000µg/L was found in 30 tubewells. The maximum arsenic contamination level found in this district is 3700µg/L in the Baruipur block. In Diamond Harbour, Gosaba, Joynagar II and Thakurpukur blocks all the tubewells analyzed were arsenic safe (below 10µg/L). The probable reason may be that these blocks are situated in the coastal belt, so that most of the tubewells draw water from less contaminated deep aquifers. Many blocks such as Kakdwip, Namkhana, Sagar and Mathurapur are very near to the coastal zone so the number of hand tubewells are much less and if at all present they are deep tubewells. Although SOES did not cover these blocks but it can be predicted that tubewells in these blocks will also be arsenic safe.

The figure given below shows the groundwater arsenic contamination status in 17 blocks of South 24 Parganas with the Pie-diagrams indicating the distribution of contamination/safe drinking water.

The Arsenic problem in the District is geo-genic leading to its widespread nature. Therefore the solution was not very easy. With the help of Surface Water based Water Supply Scheme for the Arsenic affected areas of South 24 Parganas 688 villages having 2213 habitations have been fully covered in terms of availability of safe drinking water. Complete eradication of the arsenic contamination, however, calls for active involvement of the affected communities in tackling the problem. However, the Government's perception of people's participation seems to be limited to charging a user charge for provisioning of arsenic-free water. The current installation charges are Rs.500 for residential purposes and Rs.3000 for commercial purposes. In addition, a monthly water charge of Rs.30 is charged from households and Rs.50 from commercial units. The amount thus collected is paid into a corpus fund of Rs.325.37 crores invested in 1998-99 by the State Government that will be used for maintaining the system.

Apart from Government, several NGOs are working very efficiently in arsenic mitigation drive in the District. For example, in recent years Ramakrishna Mission Lokasiksha Parishad has taken up Water Quality Surveillance (WQS) activities as one of its integrated development initiatives. As a part of WQS programme, the Parishad is maintaining laboratory units for testing arsenic concentration in hand pump water. The staff members involved in this drive not only collect the water samples and test the same

Figure 6.11: Arsenic Contamination in South 24 Parganas



but also take lead in motivating people 'not to use the hand pump water contaminated with arsenic above the permissible limit' as well as popularising the use of iron-arsenic removal filters. The laboratory unit in the premises of the Parishad is functioning in Baruipur, Sonarpur and Joynagar I blocks of South 24 Parganas.

SHIS is another organization which has taken two approaches for its arsenic mitigation programme:

- Provide an arsenic-free water supply, that is, an alternative to contaminated tubewells.

• Provide an arsenic testing technology, that is, to check water from contaminated tubewells.

In many rural areas, there are few alternatives to the contaminated tubewells. As a result, household water treatments (Domestic Filter) are familiar concepts in many parts of West Bengal. SHIS has introduced Arsenic Removal Domestic Filter which follows the concept of the Amal unit, comprises a conventional two-chamber domestic candle filter body, with a layer of activated alumina granules in the top chamber (in place of a ceramic candle filter). The activated alumina media is a granulated form of aluminum oxide that has a strong affinity for dissolved arsenic, and removes it from solution by absorbing arsenic molecules into its surface. The media has a finite absorption capacity, but can be regenerated by flushing with sodium hydroxide and acid. SHIS's main challenge now is to make this Aresnic Removable Filter affordable, so that we can give some hope of better health for the poor underprivileged.

Another problem of ground water of the District is the presence of excess *salinity*. Surface water being free from arsenic contamination River Hoogly has been selected as a source. Hence surface water treatment is necessary before supplying through distribution system. Apart from the core scheme, a modern water testing laboratory and an audio-visual auditorium are being set up which would help in maintaining quality of water and also to keep constant vigil over the water supply system spread over a vast area of more than 1100 sq. km.

6.6.3 Coverage of Habitations

PHE Department maintains the data on coverage of villages and habitations in terms of availability of drinking water. A village is said to be fully covered (FC) when

• there is one spot source for 250 persons,

• the villages have drinking water available within a distance of two hundred meters,

• the supply capacity is at least is forty litres per capita per day, and

• quality parameters of drinking water are within specified limits of habitations.

According to PHE, there are about 113 Piped Water Supply Projects currently running in different villages of South 24 Parganas. These projects are taking care of 340 villages covering 959 habitations. Table

Table 6.30: Coverage of Piped Water Supply Projects in South 24 Parganas

Scheme	No. of Projects	Estimated Cost (Rs. in Lakhs)	Villages	Habitations
ARSWP	54	3281.00	229	568
State Plan	55	3075.61	103	355
SDP	4	347.21	8	36
Total	**113**	**6703.82**	**340**	**959**

Source: Division: Alipore Division, PHE Dte.

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6.30 shows that both the Augmented Rural Water Supply Programme (ARSWP) and State Plan are equally important to bring piped water supply in different blocks of South 24 Parganas.

Table 6.31provides the relative positions of different blocks in the District in terms of habitations covered by safe drinking water sources. Here safe drinking water sources include ordinary tube wells, DWP tube wells and piped water supply schemes.

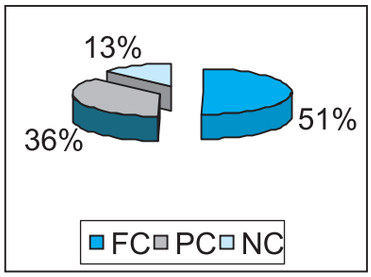
Table 6.31: Block-wise Coverage of Habitations in Terms of Safe Drinking Water

Block	Total Habitations	Habitations Fully Covered %	Habitations Partly Covered %	Habitations Not Covered %
Thakurpukur-Mahestala	143	22.4	70.6	7.0
Budge Budge - I	102	59.8	40.2	0.0
Budge Budge - II	242	99.2	0.8	0.0
Bishnupur - I	306	38.2	54.2	7.5
Bishnupur - II	250	56.4	35.6	8.0
Sonarpur	429	63.4	30.3	6.3
Region I: North West (Kolkata Surroundings)	**1472**	58.6	35.9	5.4
Baruipur	633	82.0	13.3	4.7
Bhangar I	273	74.0	18.3	7.7
Bhangar II	301	25.2	11.0	63.8
Falta	193	16.6	71.0	12.4
Diamond Harbour - I	180	22.8	46.1	31.1
Diamond Harbour - II	134	32.8	53.0	14.2
Magrahat I	434	30.0	47.2	22.8
Magrahat II	374	90.1	7.5	2.4
Kulpi	602	44.9	37.5	17.6
Mandirbazar	599	61.6	36.6	1.8
Region II: North East and Mid West	**3723**	54.3	30.5	15.2
Canning - I	254	19.3	46.5	34.3
Canning - II	196	20.9	53.6	25.5
Basanti	254	38.6	44.5	16.9
Gosaba	266	38.0	41.7	20.3
Joynagar - I	375	80.3	10.4	9.3
Joynagar - II	101	29.7	68.3	2.0
Mathurapur - I	262	46.2	53.4	0.4
Mathurapur - II	276	52.5	42.8	4.7
Kultali	229	52.4	47.2	0.4
Patharpratima	370	24.6	56.8	18.6
Kakdwip	329	39.5	29.2	31.3
Namkhana	177	42.9	51.4	5.6
Sagar	200	40.5	47.0	12.5
Region III: South (Sundarbans)	**3289**	42.1	42.9	15.0
TOTAL	**8484**	50.3	36.3	13.4

Source: Division: Alipore Division, PHE Dte.

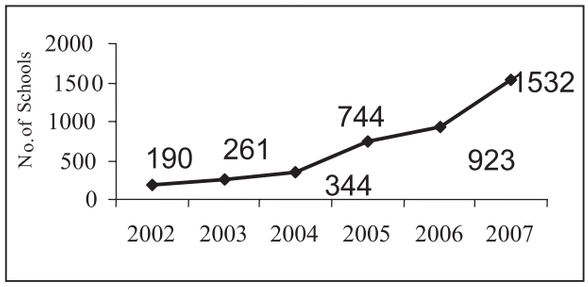
The blockwise data on availability of safe drinking water reveals that overall 87% of the habitations are either fully or partly covered. Further it interestingly reveals that Sundarbans region (Region-III) has marginally better coverage - Non Covered area (NC) is 15% - compared to Region-II which is comparatively closer to Kolkata having 15.2% as total NC. Fully covered (FC) as well as partly covered (PC) habitations are highest in Region-I. The block having the lowest coverage in terms of total habitations is Bhangar II having only 37% coverage including PCs along with FCs. Apart from Bhangar II, habitations where more than 30% have remained totally uncovered are in Diamond Harbour I, Canning I and Kakdwip.

Figure 6.12: Coverage of Habitations in Terms of Availability of Safe Drinking Water



Water supply in ***village schools*** is another important issue for good hygiene of children as well as to maintain the sanitation system developed in the schools. PHE Department had targeted to cover 1859 number of schools for supplying Hand Bored Tubewells in 2002-03. But 18% of the work is yet to be completed.

Figure 6.13: Cumulative Achievement of Water Supply



However, if we look at cumulative achievement for water supply arrangement in sourceless schools, we obtain a rising trend during the period between 2002 and 2007.

In contrast to the availability of medical facilities, the GIS map for availability of safe drinking water reveals a much better picture. Only the Sundarban Region, in the southern-most area, remains a problem area.

6.6.4 Priority Areas in Provisioning of Water

The overall situation with respect to water supply is concerning. The focus seems to be on ensuring partial coverage – the proportion of fully covered habitations remains poor (only about half of total habitations have been fully covered), and these are more concentrated around Kolkata. Increasing the coverage of villages with drinking water should be a high priority in the district. Further, it should be noted that mere provisioning of water is not enough – the quality of the water is also important. Given the high incidence of water borne diseases (like diarrhoea) and

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the spread of arsenic contamination, steps to combat water pollution remain a high priority. The need to provide alternative sources of safe drinking water and the provisioning of arsenic filters at affordable rates are important issues.

6.7 Sanitation Facilities

After drinking water, one must consider sanitation which is another vital aspect of infrastructure for achieving the goal of health for all. Epidemiological evidence suggests that sanitation is as effective in preventing disease as improved water supply. According to World Health Organization, the improved water supply and adequate sanitation will result in:

- 25 to 33 per cent reduction in diarrhoeal diseases in the developing world, which accounts for 4 billion cases each year.
- Decreased incidence of intestinal worm infestation (estimated at 10 per cent of the population in developing countries), which leads to malnutrition, anaemia, and retarded growth.

In India poor hygiene and sanitation accounts for 9 per cent of all deaths and an estimated 27,463,000 years of life lost each year (India Infrastructure Report, 2004). According to National Sample Survey data of 1998 for West Bengal, 76.1 percent of households in rural area and 15.2 percent of households in urban area did not have any latrine facility. Though sanitation facilities in urban areas are better than in rural areas, it is far from an ideal situation even in urban areas.

6.7.1 Sanitation Coverage in the District

Coming to District level data in Census 2001, it is found that South 24 Parganas has medium rank regarding the sanitation facilities. The District needs serious work to achieve the goal of complete sanitation on the basis of the fact that even after five years of introducing Total Sanitation Campaign (TSC) the campaign could not sufficiently motivate people of the district on the use of latrine. Apart from the government, several organizations are working to achieve the goal of complete sanitation. Eleven Cluster Organisations of Ramakrishna Mission Lokasiksha Parishad are directly involved in implementation of Total Sanitation Programme in several blocks of South 24 Parganas.

TSC was launched in the District with twin objectives of making the people aware of the advantage of use of sanitary latrines and at the same time providing low cost sanitary latrines to every household. Under the programme the people living below poverty line (BPL) get a subsidy for constructing the latrine, whereas for the above poverty line (APL) households, entire cost of the latrine is to be borne by the owner of the latrine. Table 6.32 shows that only 18% of total target has been achieved for APL households under TSC programme whereas the success rate is 88.6% for BPL households. One of the explanation of such varied success rates may be the arrangement

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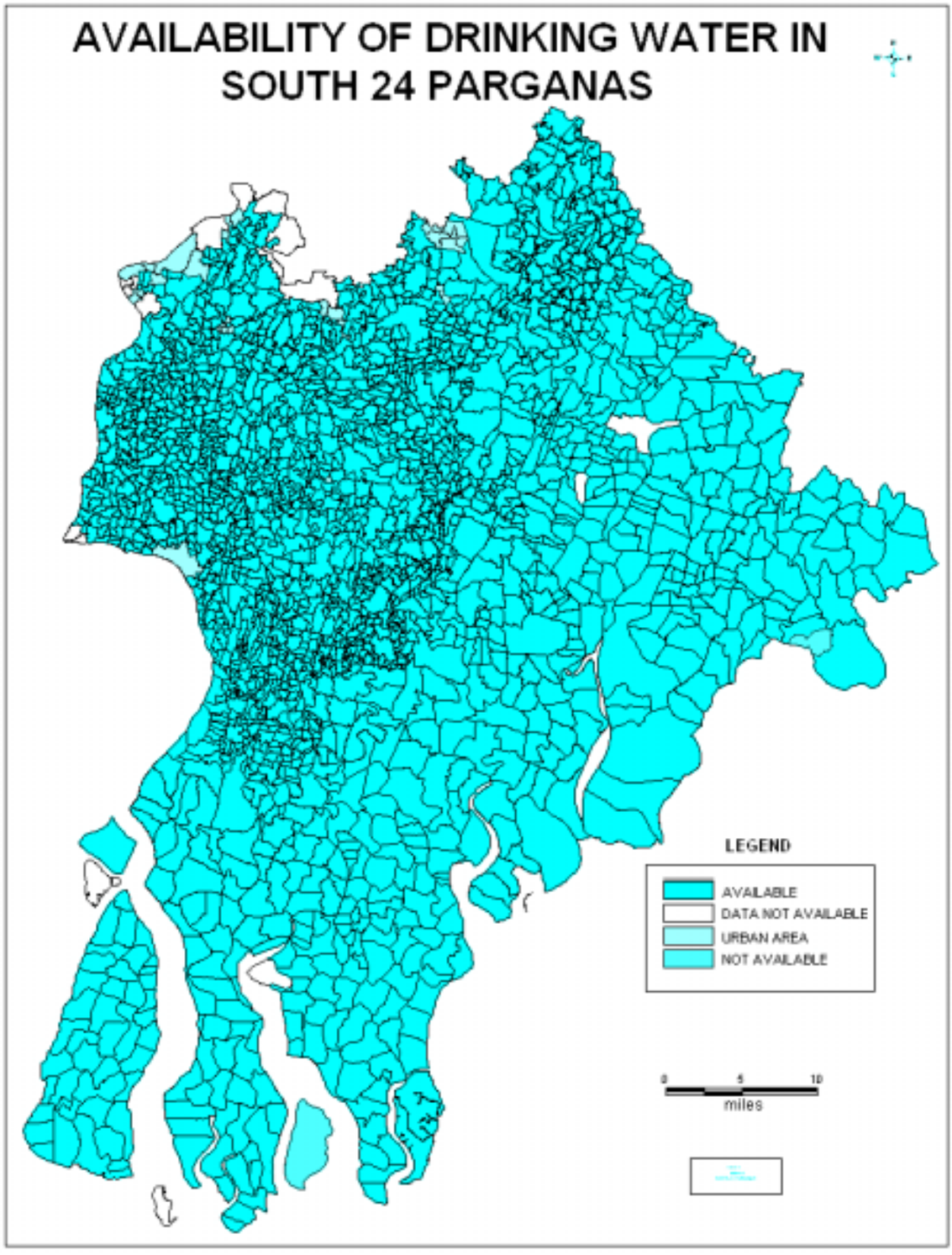
Figure 6.14: Availability of Drinking Water



of subsidy for the families living below the poverty line. BPL households get a partial contribution of Rs. 250 as reimbursement. It was thought that Campaign will motivate people to construct their own sanitary latrines with technical support from the Sanitary Marts. But the analysis of performance reveals that sanitary latrines were largely constructed only by the BPL families. Although target for construction was marginally higher in the BPL category, performance in the said category (428670) far surpasses the APL category (75472). Hence, one may argue that subsidy is working as the main driving force rather than the awareness aspect which was the core aim of launching TSC.

A blockwise analysis of achievement of sanitation targets (Table 6.33) shows that the success rate varies widely among different blocks. Some of the blocks are very well performing in the district achieving more than 100% of their target whereas some other blocks are very low performing. Namkhana ranks highest in the district, followed by Thakurpukur-Mahestala, Sonarpur, Gosaba, Kakdwip as second, third, fourth and fifth achievers. The situation is worst in Joynagar II and Canning I, the success rates being only around 30%. Surprisingly, most of the higher rank holders for BPL households belong to Sundarbans region. The better inclination towards latrine construction always cannot be explained either by level of educational achievement or by water supply facilities. It needs further study to understand specific dynamics of sanitation activities in the District. It may be the tenacity of the Sanitary Mart, may be the involvement of the Panchayat organizations, or initiative of the Block Development Officer or a combination of these factors that is responsible for higher level of performance in individual blocks.

One point may be worth noting in this context: several gram panchayats have been able to achieve complete sanitation as well as remove any type of environmental hazard in the district. Out of 312 gram panchayats, 11 were awarded Nirmal Gram Puroshkar in 2006; in 2007, 46 have applied for the same prize.

Table 6.32: Sanitation Coverage in South-24 Parganas

Items	APL	BPL	Total
No. of Households	782410	417473	1199883
Households having Latrine before launching of TSC	277413	23917	301330
Target under TSC	414708	483845	898553
No. of Toilets constructed	0	32811	32811
Total Latrines constructed under TSC so far	75472	428670	504142
Latrines to be constructed	339236	55175	394411

Box 6.3

Provisions of TSC

- Education and Communication for awareness and demand generation
- Incentives for poor to construct individual household latrines
- Sanitation facilities and hygiene education for all types of rural schools
- Baby friendly toilets facilities for Aganawadis
- Community Sanitary complex for poor and landless families.
- Supply chain encompassing alternate delivery

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Table 6.33: Block-wise Sanitation Targets for APL and BPL households and Achievements

Blocks	No. of Targets of Households Sanitary Lactrines under TSC		No. of Household Sanitary Latrine Constructed Under TSC		Percentage of Achievement	
	APL	BPL	APL	BPL	APL	BPL
Thakurpukur-Mahestala	7023	6400	4692	12025	66.81	187.89
Budge Budge I	7548	5059	5942	7411	78.72	146.49
Budge Budge II	9956	14377	7062	11543	70.93	80.29
Bishnupur I	18016	11992	8734	17707	48.48	147.66
Bishnupur II	17671	13323	5546	6938	31.38	52.08
Sonarpur	15521	3073	1847	5382	11.90	175.14
Region I: North West (Kolkata Surroundings)	**75735**	**54224**	**33823**	**61006**	**44.66**	**112.51**
Baruipur	22699	17473	7166	12367	31.57	70.78
Bhangar I	10480	16201	3906	13291	37.27	82.04
Bhangar II	17572	10148	209	14451	1.19	142.40
Falta	24699	15695	4615	16361	18.68	104.24
Diamond Harbour I	8686	11014	351	6353	4.04	57.68
Diamond Harbour II	17342	8493	218	9257	1.26	109.00
Magrahat I	8255	23253	2108	16669	25.54	71.69
Magrahat II	14581	26986	101	9109	0.69	33.75
Kulpi	20533	17309	1634	19286	7.96	111.42
Mandirbazar	17401	12213	4376	12933	25.15	105.90
Region II: North East and Mid West	**162248**	**158785**	**24684**	**130077**	**15.21**	**81.92**
Canning I	18515	21262	3330	6489	17.99	30.52
Canning II	11350	12575	197	7417	1.74	58.98
Basanti	21688	29555	209	24106	0.96	81.56
Gosaba	20488	16868	1024	27687	5.00	164.14
Joynagar I	2364	23130	1059	10389	44.80	44.92
Joynagar II	6014	25280	0	7933	0.00	31.38
Mathurapur I	15609	17901	430	17357	2.75	96.96
Mathurapur II	17914	13963	666	10754	3.72	77.02
Kultali	13929	17313	481	10304	3.45	59.52
Patharpratima	12801	38129	1190	33162	9.30	86.97
Kakdwip	10517	25910	3343	39099	31.79	150.90
Namkhana	18753	9771	1218	24094	6.49	246.59
Sagar	6783	19179	3818	18796	56.29	98.00
Region III: South (Sundarbans)	**176725**	**270836**	**16965**	**237587**	**9.60**	**87.72**
District	**414708**	**483845**	**75472**	**428670**	**18.20**	**88.60**

Source: Zilla Parishad, South 24 Parganas

6.7.2 School Sanitation

Schools are important for cognitive, creative and social development of children. So are the School Sanitation and Hygiene Education, necessary for the safe, secure and healthy environment for children

Box 6.4

SSHE Goal

- To cover all rural schools by providing water, sanitation and hand washing by along with hygiene education 2005-06
- To cover all Anganwadis with toilet facilities 2005-06
- Separate toilet facilities for girls in co-ed schools

to learn better and face the challenges of future life. This understanding is very much a part of the policy of Government of India (GoI). From policy to programme, ***School Sanitation and Hygiene Education (SSHE)*** has now become a reality of school centric development action being realized by most of the schools. Government is committed to scale up SSHE programme by covering all the government rural schools with drinking water, urinal/toilet facilities and promote health and hygiene activities by the fiscal year 2005-06 with special focus on the girl child. This finds ample prominence in TSC, which encourages construction of school toilets as well as hygiene education in all types of Government schools. The SSHE programme is participatory in nature and an important component of the national reforms programme for rural water and sanitation sector.

Out of 2,468 primary schools in South 24 Parganas where toilets have been constructed so far, 335 schools do not have sanitary latrines, while in 509 there are no latrines for girls. The latter creates problems, particularly for adolescent girls, and may lead to drop-outs.

Table 6.34: Sanitation facilities in Schools in South 24 Parganas

Primary Schools	No. of Schools
Total No.	2468
Where Toilets have been constructed under TSC	1959
Where Toilets have been constructed under Other Sources	184
Without Sanitary Latrines	335
Without Girls Latrines	509

Source: Zilla Parishad, South 24 Parganas

The fund allotment for sanitization of schools has been summarized in the following Table. It shows that 79% of the work is yet to be completed.

Table 6.35: Fund Status in School Sanitation: South 24 Parganas

School	Target (Units)	Completed (Units)	Pending (Units)	Fund Required (in Rs.)	Fund available out of TSC @ Rs. 2	Fund required out of BRGF @ Rs. 0.039
Primary	4936	1937	2999	716.761	599.80	116.961
High / H.S. / Junior High	448	140	308	73.612	61.60	12.012
Sishu Siksha Kendra	1250	350	900	215.10	180	35.10
Madhyamik Siksha Kendra	138	48	90	21.51	18	3.51
Madrasah	86	32	54	12.906	10.80	2.106
I.C.D.S.	5448	79	5369	536.90	268.45	268.45
TOTAL :	**12306**	**2586**	**9720**	**1576.789**	**1138.65**	**438.139**

Source: Zilla Parishad, South 24 Parganas.

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6.7.3 Some Remarks on Sanitation

The District officials have taken steps in improving the situation with respect to sanitation, but there are many unfinished tasks. For instance, the focus of Government programmes is on BPL families. While this was justified given the low coverage of BPL families (only 3% of BPL households had latrines, compared to 36% of APL families), after the inception of TSC programme, a large proportion of BPL families constructed sanitation facilities as they considered it to be an issue related to their social prestige. However the APL families – who are presumed to be more educated and aware – have continued with traditional sanitation practices. Changing behavioural pattern and demand for hygienic sanitation among such families is a high priority area.

6.8 Conclusion

The analysis of the health situation in South 24 Parganas shows that there is scope for considerable improvement in almost all areas. Particular areas of concern are identified as follows:

1. The existing health infrastructure in most blocks does not satisfy existing national norms. This creates a tremendous pressure on blocks where the local population relies on public health facilities. However, such pockets are limited to Sundarbans. In most areas the reliance on public health facilities is much less.
2. The existing three tier referral system does not seem to be functioning effectively in all three regions.
3. The lack of adequate data, particularly on maternal and child related programmes, prevents proper evaluation of such schemes.
4. The proportion of safe deliveries is about 57%. This is quite low; further it hides the fact that institutional deliveries constitute less than a third of *recorded* deliveries.
5. Only one out of every five registered women completes the three mandatory ANC check-ups.
6. The incidence of anemia among pregnant women is as about 20%. This affects infant mortality and leads to under-weight babies.
7. There is sufficient scope for improvement in performance in respect of immunization.
8. The fact that ICDS is making headway in the district is a welcome sign and can be hoped to reduce the severity of child and maternal malnutrition.

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9. There has been rapid progress in the provisioning of safe drinking water. The problem of arsenic contamination has been tackled successfully.
10. The extension of sanitation facilities has been uneven. The record is particularly poor in schools.

Given the inadequate and poorly utilized health infrastructure a significant increase in the expenditure is necessary to meet institutional deficits. The referral system must be made effective through appointment of medical personnel. The reluctance of qualified medical personnel to accept public sector appointments and posting in rural areas is a matter of concern. This is leading to a large vacancy in such staff. Incentives must be offered to attract medical staff. Regular and periodic transfers, residential facilities and greater social status and prestige may be important. The regular availability of staff close to their residence, along with the availability of medicine, is an important pre-requisite in re-vitalizing the referral system, particularly at the Sub-centre level. It may also be necessary to explore how Private-Public Partnerships can be effectively utilized.

Discussions with officials in CMOH indicated that in many areas accessibility to health facilities is a real problem. The introduction of ***Mobile Health Care Facilities*** is a welcome step in this regard. Composed of a social worker, paramedical workers and doctor the Mobile Health Team (MHT) visits the project villages periodically to provide support and facilitate development activities. The MHT serves as the liaison between village and health centre. New project villages are visited regularly while growing self-sufficiency, capacity and leadership within the older villages eliminate the need for frequent follow-ups and consultation. The health staff provides primary care for patients who require treatment for minor illnesses and injuries. Patients who have more serious disorders and need testing or more intensive treatment are referred to other hospital-based services, through the Mobile Ambulance facility which is readily available at the time of the clinic.

Mobile Boat Dispensaries aim to provide comprehensive health care services (preventive, promotive and curative) to remote villages, particularly in the inaccessible areas of the Sundarbans. The services provided are OPD, minor surgery, BP examination, X-ray, pathology, ECG, First Aid, Vitamin-A Prophylaxis, treatment of mal-nourished cases and linking up with RCH programme to provide ante-natal/post-natal services, identification of difficult pregnancies and referral for institutional care, immunization, etc.

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Apart from health care infrastructure and its accessibility, problems relating to maternal and child health also requires serious attention, particularly in view of their implications for subsequent generations. Major constraints in improving the situation are socio-cultural - the low status of women, lack of education and awareness, early marriage, etc. These problems cannot be solved through a 'top-bottom' approach, but requires building community awareness and involvement. NGOs can play an important role in this respect. The ICDS also has a major potential role. Gram panchayats have to be involved more actively.

The scarcity of Female Health Assistants and trained Dais, and their non-availability in the locality on a 24-hour basis are institutional impediments to improving the situation with respect to maternal health. This problem must be addressed by the Health Department. The State Government must also realize the economic importance of health and release financial resources accordingly.

There must also be regular review and evaluation of existing programmes in the area of child and maternal health. Unfortunately, the lack of a Universal Surveillance Data System renders the task of evaluation difficult. This is an institutional reform that should be given high priority by the State. This system should be based on gram panchayats to improve coverage of the data.

We have also constructed a *Health Index* to assess the overall situation in the District. The average value of Index is only 0.52. This is quite disappointing. The block-wise variation is also minimal.

The highest Index value is obtained by Canning-II (0.70), and the lowest by Gosaba (0.39). It is interesting to note that both these blocks are in the Sundarban regions. The situation with respect to Sundarban blocks is quite varied – four out of the top ten blocks are from this Region. On the other hand, seven out of the last nine blocks are also from this region. In contrast, blocks around Kolkata perform well, except for Budge Budge-II and, to some extent Bishnupur II. The blocks in Region-II, mainly fall in the intermediate stage, though three of them (Magrahat-II and Diamond Harbour I and II) find place in the top ten blocks. This index can serve as a useful tool for geographical targeting and allocation of resources in the district.