

CHAPTER XIII

MEDICAL AND PUBLIC HEALTH SERVICES

SURVEY OF PUBLIC HEALTH AND MEDICAL FACILITIES IN EARLY TIMES

A proper survey of Medical and Public Health Services before the beginning of the 19th century is not possible because we have no reliable data to build up an account. The earliest document where we find references to the incidence of diseases and the current systems of medicines is in an account of Francis Buchanan who had travelled in the district of Bhagalpur in 1810-11. Francis Buchanan was a doctor and was deputed by the East India Company to travel through various districts which had already come in the British possession and to give a geographical account of such provinces. Francis Buchanan was a remarkable man and in spite of the difficulties of communications, conveyances, scarcity of food and drink and various other hazards he has left us a good account from which we can build up the background of Bhagalpur district for various matters. His manuscript was in the India Office Library and was printed with the permission of the Secretary of State for India in Council and was published in 1939 by the "Bihar and Orissa Research Society", Patna. Buchanan's account of Purnea is embodied in his account of the district of Bhagalpur in 1810-11 (at that time Purnea was a part of Bhagalpur district).

When Francis Buchanan toured through Bhagalpur district there was no Civil Surgeon's Office with data on vital statistics, no municipalities with birth and death register nor regular Police Thanas with records. That is why even if Francis Buchanan has based many of his conclusions on what he had heard has to be partially depended on.

From his account it appears that both Ayurvedic and Unani systems were followed. A large number of indigenous herbs and plants were in common use. There was also a belief that some men of the nomadic tribes, priests and *Ojhas* had knowledge of secret medicines and possessed supernatural powers to exercise evil spirits that caused illness.

Francis Buchanan refers to 8 wise men in Rajmahal (now in Santhal Parganas district) who had some sort of scientific knowledge of medicines. Some of these wise men were Brahmins while others were Kayasthas or Mohammadans. He had no misgivings that many of the deaths were due to wrong diagnosis and want of good medicines.

Surgery was practised in a crude form by the barbers and *Jurrahs*. The *Jurrahs* used a sort of imperfect cuppings for drawing blood and also used to cut a vein. They knew certain herbal ointments by which they treated sores. The *Jurrahs* were mostly Mohammadans. Midwifery was practised by the unlettered women of the *Chamar* caste who would cut the umbilical cord. Witchcraft and sorcery were rampant. Inoculation was chiefly performed by a caste known as *Mali*.

This summary of the trends of public health and medical facilities from Francis Buchanan account 1810-11 will indicate that the allopathic system had not yet been fully introduced. It is only with the consolidation of the district administration and the infiltration of the Europeans and Anglo-Indians as Indigo planters and merchants that the allopathic system could make a headway. The Military Cantonment of the district was also helpful in making allopathic system known to the public. The early Christian Missionaries had also started their small dispensaries from where they would dispense medicines. The planters as elsewhere took a lot of interest in the raiyats, if not for any other end but to see that they lived a healthy life and helped them in making money.

The consolidation of the British administration at the headquarters was followed by a system of police *thanas* and the government employees had to be kept in good health in the midst of the very unfamiliar climate of Bhagalpur district which was full of jungles and swamps. The spread of education was also helpful in propagating approved systems of treatment.

The earlier British administrators had to see that the revenue was properly realised and if there were epidemics or wide scale deaths due to floods or famines they knew that the revenue would suffer. Even if not bent with altruism they had to think of the general incidence of health and medical facilities for the people. The chain of early British administrators in the district had to tour extensively in spite of bad communications and want of conveyances and they had to take proper care of themselves and always carried with them known specifics for cholera, dysentery, etc. Naturally their entourages depended on the officer for the medicines if they needed them. These were some of the reasons that paved the way of the introduction of the allopathic system of medicine.

One can imagine the difficulties of the pioneers of this system of treatment and medicines. They had to fight against the deep seated superstitions of the illiterate mass and to introduce mass scale inoculations and vaccinations to prevent cholera, plague, small-pox, etc. Arrival by plague would devastate the villages by knocking down hundreds of people dead within a week. Similar were the devastations covered by cholera and small-pox. Even villages, used to be burnt down to stop the spreading of the

infections. Hospitals and dispensaries were slowly organised and it took decades to make the people hospital minded which they are today.

ORGANISATION

There are now two distinct sections so far as the administration of the Health Department is concerned. Broadly speaking one section is the preventive side which is known as the Public Health Department and the other section is the curative side known as the Medical Department. Previously there were two Directorates, one was known as the Directorate of Public Health under the Director of Public Health who had several Deputy Directors and Assistant Directors and there used to be one District Health Officer at the district headquarters. The other Directorate was under the Inspector-General of Civil Hospitals and under him there were Civil Surgeons, the highest medical official at the district headquarters. For quite a long time the Inspector-General of Civil Hospitals usually the senior most Indian Medical Service Officer available in the province was also the Secretary of the Health Department who controlled both the sections as indicated. With the change of policy of the Government the Secretaryship was taken away from the Inspector General of Civil Hospitals which had caused quite a stir at one time. The post of the Secretary went to a senior I.C.S. man but there was not much interference between the day-to-day administration of the Inspector-General of Civil Hospitals.

With the expansion of both the departments the number of gazetted doctors had enormously increased and it was increasingly felt that there was overlapping and avoidable duplication of work. It was also felt that both the departments would work better if the over-all responsibility and supervision was vested in one officer at Governmental level, and at district level also there should be one senior doctor who could be entrusted with both the preventive and curative sides. It is with this object that the Public Health and the Medical Departments have been recently amalgamated abolishing the post of the Inspector-General of Civil Hospitals and creating a common post of the Director of Health Services for Bihar. The post of Assistant Director of Public Health, Bhagalpur was abolished and a post of the Regional Deputy Director of Health Services was created for the entire Bhagalpur Division.

A Government Circular no. 11-A3-43 of 1958-59, dated the 3rd January, 1959, mentioned that the posts of Civil Surgeons in the districts were converted into posts of Senior Executive Medical Officers-cum-Civil Surgeons. Henceforth the Senior Executive Medical Officers-cum-Civil Surgeons were to be responsible for the efficient implementation, supervision and control of all public health measures, preventive as well as curative.

Duties of Senior Executive Medical Officer.—As mentioned the Senior Executive Medical Officer is responsible for all medical work in the district both preventive and curative. He is assisted by the District Medical Officer of Health in respect of Public Health work.

He is the Superintendent of all Government hospitals and dispensaries within his district except that which is under direct control of the Directorate.

He is responsible for the supervision and inspection of all schemes of the Medical and Public Health section in his district. He is the appointing authority for the different categories of personnel already delegated to him. He initiates the annual confidential report of all Medical Officers employed in his district under all schemes of the Health Department except the District Medical Officer of Health in respect of whom the existing instructions regarding the initiation of annual confidential report continues in operation.

He has the power of transfer of the different categories of Government staff other than the Medical Officer within his district but for transfer outside the district the approval of Regional Deputy Director instead of the Directorate is necessary.

He is an *ex-officio* member of the District Board Sanitation Committee and is appointed as Chairman of that Committee to have sufficient power to co-operate with the District Medical Officer of Health. He devises measures in consultation with the District Medical Officer of Health and the Chairman, District Board for the effective control of epidemics and also to co-ordinate the relief measures to be taken by District Board's epidemic doctors, dispensaries, Medical Officers and the Medical Officers sent by the Health Department specially to control epidemics. He is expected to render every assistance to the District Board and the Board is expected to profit by his expert advice.

The Senior Executive Medical Officer is also responsible for the enforcement of drug control measures and as such he can inspect any druggist's shop within the district and take steps for the prosecution of the defaulters. He is the authority to issue license for medical shops and also to cancel the same in case of non-observance of prescribed rules.

He exercises no administrative control over the Mission Dispensaries, Central Jail Hospital, but he could inspect them and these institutions should be expected to welcome his expert advice. The Central Jail Hospital is managed by the Inspector-General of Prisons, Bihar. There is one separate Medical Officer in the Central Jail Hospital.

The Senior Executive Medical Officer-*cum*-Civil Surgeon visit the Sadar and Police Hospitals at Headquarters daily when he is not out of station on duty.

He is expected to inspect all hospitals and dispensaries incharge of Medical Officers of the status of Assistant Surgeon in the district and all hospitals at subdivisional headquarters at least twice a year.

He is expected to scrutinize the expenditure and accounts of every hospital and dispensary in his district and guide the managing body in any irregularity or other circumstances which in his opinion deserves notice. In all professional matters his decision will be final, but if any difference of opinion arises between him and the managing body regarding any non-professional matters affecting the management of the institution, a reference is made to the Inspector-General of Civil Hospitals or to the Government for a decision.

Duties of District Medical Officer.—His services have been placed under the District Board and he is to give advice on technical matters concerning Public Health, such as control of epidemics, vaccination, sanitation, etc. He supervises the work of the subordinate public health staff, *viz.*, Assistant Health Officers, Vaccinators, Disinfectors, who are the employees of the District Board. He seeks advice of the Senior Executive Medical Officer in every matter relating to Public Health and the latter is to report any case of default and mismanagement to the Government.

The Community Development blocks have a static and mobile dispensary with three health sub-centres. The Block Medical Officers are responsible for both the preventive and curative medicines.

There is a Divisional Anti-Malaria Officer in over-all charge of the Division. There is a District Malaria Officer with five Anti-Malaria Officers for implementing eradication of malaria programme.

In this district Filaria Control Programme has been launched with a District Filaria Officer. All these schemes and doctors are under the supervision of the Senior Executive Medical Officer, who works under the Regional Deputy Director at Bhagalpur and the Director of Health Services at Patna. The Directorate of Health is under a Secretary to the Government.

With the expansion of the Health Department activities, the duty and the responsibility of the Senior Executive Medical Officer has also multiplied. Some schemes sponsored by the Centre for the control of small-pox or family planning, schemes sponsored by World Health Organisation, or B.C.G. Scheme for Tuberculosis or State sponsored schemes for family planning, child welfare, maternity,

etc., are all the ultimate responsibility of the Senior Executive Medical Officer. As a matter of fact the Senior Executive Medical Officer is expected to attend so many meetings at the headquarters as well as in the rural areas (Block Development Headquarters and other places), inspect so many hospitals, dispensaries and medical centres that he has hardly any time to do surgical and medical cases even at the Sadar Hospital.

People have become more hospital-minded and all hospitals and medical centres are over congested and poorly manned. There is a great dearth of lady doctors and nurses throughout the country and Bhagalpur is not an exception. The doctor in Government employment has what is called a chair practice, a remunerative private practice which comes to him almost automatically whether he is a good doctor or not. It is for this reason that slowly the doctors in Government Service build up a private practice quickly and it is complained that they devote themselves more to the private practice at a certain cost to their hospital duties. There is a growing complaint that the hospitals which are over congested and on the average cater to more than 50 per cent patients above what they are expected to serve are neglected by the doctors. Without going deep into the question it may be said that the complaint is not without some basis and the sooner private practice is abolished and the doctors are given a higher scale of pay, it would be better for the hospital organisation. Another bad effect of this private practice is seen in the fact that there has been practically no research by any of the doctors in this district in the course of the last four or five decades. In keenness for private practice the Government doctors often breach medical ethics—this is the general impression.

REGISTRATION OF VITAL STATISTICS

The system of registration of vital statistics in this State is regulated by the Bengal Birth and Death Registration Act of 1873. Under this Act registration of vital statistics data is compulsory both in urban and rural areas of this State. There is also a provision for penalty in this Act which may extend to five rupees for neglecting in giving the information to the collecting agents of registration of statistics. But as yet, no offenders have been penalised either for not giving the information or for giving wrong information, although the offenders in case of the former are quite common. The law has, thus, not been adequately enforced. The result is that the extent of under-reporting is very high. Moreover, it varies from area to area and district to district. It is also possible that mistakes are committed at the compilation stage both at the thana level and at the district level. The present system of collection of vital statistics data is as follows:—

In the rural areas, as well as in some of the urban areas, the village chaukidars collect the data of vital occurrences of their

areas in *Hath-Chittas* of Birth and Death and submit them to the Thana Officers of the thana concerned on their respective parade day. These Thana Officers are the Registrars of Birth and Death for areas under them according to the Bengal Birth and Death Registration Act of 1873. The parade day in a thana is so arranged that each and every chaukidar has to pay a visit to the thana at least twice a week. The Thana Officers maintain the registers of Births and Deaths. These registers are called "Daily Register of Birth and the Daily Register of Death". The Thana Officers compile the data obtained from the chaukidars and after the completion of a month submit the report to the Civil Surgeon of the district concerned.

In the remaining urban areas the beat jamadars of the municipalities collect the information from their respective wards and submit them to the Health Officer or to the Sanitary Inspector of the municipalities. These Health Officers are the Registrars of Births and Deaths of the municipalities concerned. For the municipalities where there are no Health Officers, the Sanitary Inspectors or the Health Inspectors are the Registrars of Births and Deaths. These Health Officers or the Sanitary Inspectors like Thana Officers maintain the registers of births and deaths and submit the monthly consolidated report to the Civil Surgeon. The Civil Surgeon compiles the vital statistics both for rural and urban areas of the district concerned and sends consolidated monthly vital statistics returns to the Director of Central Bureau of Economics and Statistics. Since 1st January, 1954 the Directorate of Economics and Statistics maintain the statistics of vital occurrences for the State as a whole and submit the information to the Director-General of Health Services, Government of India, New Delhi.

Regarding Vital Statistics in the last District Gazetteer for Bhagalpur (1911) Byrne mentions—"In April, May, June, August and September the average death rate is about 2.25 per mille. In October, December and January it is about 2.5 and in November the least healthy month—it is as high as 3.23 per mille. The highest death rate recorded is 41.3 per mille in 1894. That for 1908 was only 33.22 per mille." In 1890 and 1891 the death rate was identical. The highest birth rate occurs in 1897 a famine year which followed on a very unhealthy year. The highest mortality recorded was in 1894, when the number of death was 41.3 per mille and the lowest was in the year 1890.

The statistics of births and deaths from 1941 to 1958 are given below. Though data regarding births and deaths are not very reliable, they give some idea of the variation of population from year to year.

TABLE 1.

Years.	Births.			Deaths.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
1	2	3	4	5	6	7
1941 ..	71,982	37,929	34,653	49,833	26,201	23,626
1942 ..	47,870	24,758	22,912	30,496	16,649	13,847
1943 ..	41,221	21,423	19,798	29,391	15,754	13,637
1944 ..	35,575	18,638	16,934	28,312	15,420	12,892
1945 ..	52,394	27,214	25,180	41,156	22,105	19,051
1946 ..	50,837	26,401	24,436	32,097	17,359	14,678
✓ 1947 ..	31,749	16,330	15,419	24,503	13,116	11,389
1948 ..	28,264	14,154	13,310	21,033	11,293	9,740
1949 ..	19,015	9,533	9,482	10,012	5,569	4,443
1950 ..	19,551	10,135	9,416	13,241	7,287	5,954
1951 ..	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1952 ..	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1953 ..	19,815	10,359	9,557	9,797	5,404	4,393
1954 ..	21,106	10,664	10,442	10,436	5,618	4,818
1955 ..	18,464	9,420	8,964	9,179	4,856	4,323
1956 ..	16,770	8,842	7,925	8,337	4,415	3,912
1957 ..	11,346	5,818	5,528	8,164	4,265	3,899
1958 ..	11,729	6,301	5,428	7,969	4,481	3,488

Thus from the statistics it is apparent that both birth and death rate have shown downward tendency. The average birth rate in the year 1941 to 1945 was 37 per mille of the total population whereas in the quinquennium 1946—50 the average birth rate fell to 20 per mille of the total population. In the last two years i.e., 1957 and 1958 the average birth rate came down to 8.5 per mille of the total population. The highest birth rate was in 1941 while the lowest birth rate was in 1957. The average death rate during the year 1941 to 1945 was 25.2 per mille of the total population whereas in the quinquennium 1946—50 it fell to 14.2 per mille of the population. In the last two years the average death rate came down to 7.3 per mille of the total population. The highest death rate was in 1941 while the lowest death rate was in 1958.

FOOD

A comprehensive account of the different types of food taken by the people of this district occurs in the "People" chapter of this Gazetteer. Briefly it may be said that the common diet consists of—

- (1) Cereals—Rice, Maize, Wheat, Barley or Jai, *Khesari*, *Kurthi*, *Arhar*, Gram, *Masur*, *Kali Pea* and *Mung*. Of these cereals, commonly taken are rice, maize, wheat, jai, *khesari* and a little quantity of *arhar*, gram and *masur-dals*.
- (2) Fruits—Banana and several fruits like Mango, Guava, *Leechi*, *Bair*, *Jamun* and *Singharah*. Fruits do not form a part of daily food.
- (3) Fats—Very little quantity is taken in the shape of mustard oil, ghee, small quantity of milk and curd are taken by people who can afford it.
- (4) Fish and meat are seldom taken.

The average intake of an adult male is about 20 oz. of rice, or 20 oz. of *Sattu*, i.e., powdered maize, gram, *khesari* or jai, pulse 10 oz. vegetable 1 oz., leafy vegetables 2 oz., a little of mustard oil and rarely milk or curd, and sometimes fish and meat.

The average caloric value supplied by the daily intake of food is about 2,200 units whereas the daily requirements for an average adult men is about 3,000 units.

The fate of the average growing child is rather bad. The principal food which is very much needed by a child is sufficient quantity of milk and a quantity of fruit juice. As regards milk they get an amount of milk though very much less than what is required, but as regards fruit juice it is seldom given.

This simple analysis shows that the average people of this district have unbalanced food, which is poor in protein, fats and other vitamin contents.

COMMON DISEASES

The common diseases of the district are the same as one finds in the other parts of the State, i. e., fevers due to common cold, influenza and other respiratory diseases such as Bronchitis, Pneumonia, Dysentery, Hookworm, Typhoid, Tuberculosis, Leprosy and Venereal diseases. Any attempt to get accurate figures of attacks and deaths would be futile as it is well known that a very large percentage of cases go undiagnosed and not brought to the hospitals. The number of the cases at Bhagalpur hospital will give some idea but it is also not known how many cases are from the urban area and how many from the rural area. From a discussion with the leading doctors in Bhagalpur city and outside it is understood

that the incidence of fever and dysentery is extremely high. Dysentery cases are very common particularly in hot weather and also when the paddy seedlings are planted. Malnutrition and Ankylostoma infections are responsible for the high incidence of dysentery.

INCIDENCE OF OTHER PRINCIPAL DISEASES

Tuberculosis

The following statistics from Bhagalpur Sadar Hospital are suggestive:—

Year.	Outdoor T.B. Patients.	Indoor T.B. Patients.	Death (Indoor patients).
1951	2,558	No patient	..
1952	2,189	Ditto	..
1953	3,463	Ditto	..
1954	2,623	Ditto	..
1955	3,193	N. A.	..
1956	2,117	„	..
1957	4,487	„	..
1958	7,880	23	..
1959	13,516	30	..
1960	13,809	16	1

This statistics would show that the incidence of T. B. is quite high but there is an apathy to come to the hospital. Since the outdoor section of the hospital does not keep any account of mortality figure and there is allergy for being an indoor patient, the incidence of mortality cannot be properly calculated. We have now better diagnostic facilities and the apathy to come to the hospital has to be met. Bhagalpur has a sizeable industrial population and it is understood that T. B. is quite common among them.

A Chest Clinic has been started in the Sadar Hospital at Bhagalpur. This is the only clinic of this type in the district. For indoor patients a separate ward of 10 beds (6 for males and 4 for females) has been constructed.

LEPROSY

Leprosy is common in the southern part of the district specially in Sonhaula Thana area.

There are three institutions for treatment of lepers, one maintained at Banka by the State Government known as Banka

Leprosy Subsidiary Centre, and two maintained by private bodies one at Dattbat known as New Leper Asylum and the other at Nathnagar maintained by Christian Mission Society. The institutions receive grant from the Government and the local bodies. There is accommodation for 60 patients but more could not be accommodated for want of funds. The Leper Asylum at Bhagalpur provides for clothing, bedding, medicine, food, etc. to indoor patients and medicines only to outdoor patients.

The following statistics of New Leper Asylum at Bhagalpur will give a fair idea about the incidence of leprosy in this district:—

Years.					Outdoor patients.	Indoor patients.
1947					1,029	242
1948					1,060	249
1949					1,163	175
1950					1,344	172
1951					1,796	177
1952					Not available	Not available.
1953					Ditto	Ditto.
1954					Ditto	Ditto.
1955					280	Ditto.
1956					186	Ditto.
1957					143	Ditto.
1958					..	..
1959					..	..
1960					..	..

VENEREAL DISEASES

It is understood that an investigation shows that the number of venereal cases had been on the increase till recently. It is not possible to get an approximate correct figure as venereal patients would rather go to a private doctor than to a Government hospital or a State dispensary.

An attempt was made to get the figures from the Civil Surgeon's office from 1955 to 1960 but figures from 1955 to 1957 only were available. They were 519 for 1955, 1,498 for 1956 and 1,429 for 1957. It has, however, been gathered that since use of contraceptives and the efficacy of penicillin injection has been proved the incidence has gone down. It is, however, a notorious fact that the *melas* and fairs spread such diseases owing to the pressure of brothels in such *melas*.

As regards Influenza it may be mentioned that in 1919-20 and 1920-21 it broke out throughout the Bhagalpur district.

HOSPITALS AND DISPENSARIES

Hospitals and dispensaries in this district, according to the line of treatment followed, may be said to be mainly of four types, viz., Allopathic, Homoeopathic, Ayurvedic and Naturopathic. The number of Allopathic dispensaries is by far the largest. There is no organised Unani dispensary and Unani medicines are given by the Hakims practising Unani methods.

There are altogether 50 Allopathic hospitals and dispensaries functioning in the district, out of which 24 are run by Government 24 by the District Board, one is run by the Central Jail and one by the Christian Missionaries. The total number of hospitals with indoor arrangement is 7. A list of hospitals, dispensaries and other medical institutions is given below:—

(a) Names of Hospitals maintained by the Government.

Nome of Hospital.	Total no. of beds.	Males.	Females.
1. Sadar Hospital, Bhagalpur ..	180	108	72
2. Subdivisional Hospital, Banka ..	24	12	12
3. Female Hospital, Bhagalpur ..	10	Nil	10
4. Sabour Hospital, Sabour ..	6	4	2
5. Police Hospital, Bhagalpur ..	27	27	Nil.
6. Constable Training Hospital, Bhagalpur ..	27	27	Nil.
7. Central Jail Hospital, Bhagalpur ..	152	148	4

(b) Names of Dispensaries maintained by the Government.

1. State Dispensary, Katoria.
2. State Dispensary, Baunsi.
3. State Dispensary, Sultanganj.
4. State Dispensary, Sabalpur.
5. State Dispensary, Pirpainty.
6. State Dispensary, Colgong.
7. State Dispensary, Mohadinagar.
8. State Dispensary, Naugachhia.
9. State Dispensary, Gopalpur.
10. State Dispensary, Bihpur.
11. State Dispensary, Dholbajja.
12. State Dispensary, Shakkund.
13. State Dispensary, Rajaun.
14. State Dispensary, Kurmadih.
15. State Dispensary, Jagdishpur.
16. State Dispensary, Chanan.
17. State Dispensary, Dhuraiya.
18. State Dispensary, Sonhaua.

Practically all these hospitals actually keep patients much beyond the strength of actual beds. Sanction has been given to attach 6 beds to each of the State dispensaries but the scheme has not yet been implemented. In the Third Five Year Plan it is expected that this will be implemented.

(c) Names of Dispensaries maintained by the District Board.

- | | |
|---------------------------|-------------------------------|
| 1. Kajraili Dispensary. | 13. Kharandha Dispensary. |
| 2. Sajaun Dispensary. | 14. Bela Bijhoura Dispensary. |
| 3. Nandlalpur Dispensary. | 15. Jamdaha Dispensary. |
| 4. Karharia Dispensary. | 16. Sultanganj Dispensary. |
| 5. Tarar Dispensary. | 17. Sonhaura Dispensary. |
| 6. Ishipur Dispensary. | 18. Shakhund Dispensary. |
| 7. Khagra Dispensary. | 19. Gopalpur Dispensary. |
| 8. Narayanpur Dispensary. | 20. Dhuraiya Dispensary. |
| 9. Gausipur Dispensary. | 21. Rajaun Dispensary. |
| 10. Dumrama Dispensary. | 22. Kurmadih Dispensary. |
| 11. Telia Dispensary. | 23. Katoria Dispensary. |
| 12. Bishunpur Dispensary. | 24. Chanan Dispensary. |

The above dispensaries are maintained by the District Board. These dispensaries receive subsidiary grants from District Board. They do not maintain indoor beds to treat the indoor patients. Only outdoor patients are treated. These dispensaries are under the administrative charge of District Medical Officer, Bhagalpur.

The Christian Missionaries have started only a charitable dispensary namely "Catholic Mission Dispensary" at Hari Mohara where only outdoor patients are treated.

A centre for naturopathy has been recently opened in Bhagalpur.

MEDICAL PRACTITIONERS

It is not possible to give any thing like a correct number of the medical practitioners. There is no system of qualified doctors registering themselves with the district authorities. There is no statutory bar for changing the plan of practice. There is no obligation for even a qualified doctor to be registered as a member of the Branch of Indian Medical Association. Unfortunately again there is no statutory restriction preventing an unqualified allopathic doctor practising both medicine and surgery. Regarding the Homoeopaths the system of registration of qualified Homoeopaths is not obligatory. There are also very good Homoeopaths who have become so by experience and private study and may not have any Homoeopathic qualifications. There are also absolutely

unqualified quack Homoeopaths who deal in giving Homoeopathic medicines without any experience or proper diagnosis. The same remarks could be made regarding the Unani Doctors or the Ayurvedic Physicians.

MOBILE HEALTH CENTRES

Mobile Health Centres have been opened in the various Community Development Blocks to serve the rural areas.

There are three Mobile Health Centres in each Community Development Block. Bhagalpur district has Mobile Health Centres at Mamalkhi, Parsastdi and Tarechha in Sabour Community Development Block; Dudhari, Kakwara and Bindh in Banka Community Development Block; Sahu Parbatta, Kaluchak and Kharik in Naugachia Development Block; Bhawanipur, Amarpur and Baikapur in Bihpur Development Block; Dharhara, Saidpur and Dumariya in Gopalpur Development Block; Makdumma, Bharko and Chirrya in Amarpur Development Block; Moehanama, Inarbanan and Baghmari in Katoria Development Block; Shahjadpur, Donradih and Ratanganj in Shahkunda Development Block; Ekchhari, Sobnathpur and Mathurapur in Colgong Development Block; and lastly Nawada, Maharva and Maghaumi in Rajaun Development Block.

Each Mobile Health Centre of Community Development Block is run by one health worker, one trained *dai* and one servant. As a preventive measure these centres disinfect wells and houses, give cholera inoculations, vaccinations against small-pox, distribute freely skimmed milk powder to the needy and poor public in the area covered by each Health Centre and distribute multi-vitamin tablets free of cost to the needy population. In each mobile centre outdoor patients are treated free of cost. The Medical Officer incharge of the Block attends the mobile centre twice a week and examines the patients and distributes medicines to them.

ACTIVITIES OF THE DISPENSARIES OF THE COMMUNITY DEVELOPMENT BLOCKS OF BHAGALPUR.

Each Community Development Block Dispensary consists of the following staff:—

- (1) One Medical Officer, (2) one Sanitary Inspector, (3) one Lady Health Visitor, (4) three Auxiliary Nurses or trained *Dais*. (5) one Auxiliary Health Worker.

The function of these dispensaries is to maintain a satisfactory incidence of health in the rural areas. Disinfection of wells, inoculation and vaccination are some of the preventive measures while the Block Doctor treats the patients at the Block dispensaries.

Figures of eight Block dispensaries given below will give an idea of their working:—

1959-60.

Name of Block.		Total population.	Disinfection of wells.	Inocula- tion.	Vaccina- tion.
1		2	3	4	5
1. Shahkund		68,364	19,371	43,675	49,251
2. Sabour		70,897	11,196	53,905	2,401
3. Bihpur		92,783	1,042	48,611	3,865
4. Banka		68,578	8,806	51,351	10,892
5. Dumaria		86,787	5,841	48,140	78,839
6. Bounsi		Not available	28,458	22,123	2,079
7. Katoria		56,000	Not available	19,000	2,195
8. Naugachhia		78,617	7,331	Nil	8,112

The Block Medical Officers are incharge of their dispensaries and are held responsible for both the preventive and curative aspects. Besides looking after the health and sanitation work of the area the doctors of the respective block dispensaries treat the patients but at present there is no arrangement for treating indoor patients.

EPIDEMICS AND THEIR CONTROL

Epidemics were a worry to the earlier administrative officers particularly because of the inaccessibility of places of the diseases which generally take an epidemic form in this district. Particular mention has to be made of cholera, small-pox and plague.

The old documents indicate that these diseases have broken out in epidemic form very early in the district. The appearance of cholera in a virulent and epidemic form is recorded in the official reports made on April, 10, 1818. Opium was practically the only remedy of the disease in these days. Government supplied opium to the headman of each village, for distribution in the affected areas.

Regarding small-pox, a letter dated September 6, 1822 of Shri W.A. Chalmers, Magistrate of Bhagalpur, mentions that for several years past, small-pox visited the hilly tracts of the district and

occasioned a great mortality among the inhabitants. Dr. Glass maintained a small vaccine establishment at his own expense, and performed without salary all the duties of a Superintendent of an institution. The benevolent efforts of Dr. Glass to introduce vaccination in the hills were in a great measure frustrated by the difficulty he experienced in procuring persons to go there as native doctors, and the unwillingness of the hill people to submit their children to the operation.

As for Plague, Bubonic Plague made its first appearance in the district in 1901 and took a toll of 8 deaths. During the next nine years there had been annual recurrence and the mortality was 1,518 in 1904 and 2,369 in the next year. Plague appeared in its severest form in 1912 and 1914.

1. *Cholera*.—Cholera broke out in Bhagalpur town in the years 1919-20, 1925-26 and 1926-27. It is seen more or less every year throughout the district, but the incidence of this disease was very high in 1947 and was least in 1949.

The attacks and deaths from cholera in Bhagalpur district from 1947 to 1960 are noted below :—

Years.				Attacks.	Deaths.
1947	..	..	..	3,928	1,743
1948	..	..	..	2,815	1,147
1949	..	..	..	227	84
1950	..	..	..	2,446	963
1951	..	..	..	1,070	329
1952	..	..	..	Not available.	Not available.
1953	..	..	..	Ditto	Ditto.
1954	..	..	..	Ditto	Ditto.
1955	..	..	..	1,086	96
1956-57	..	..	..	1,761	613
1958-59	..	..	..	766	238
1960	..	..	..	527	152

It is apparent from the above figures that prior to 1951 the incidence of cholera attacks and deaths was very high especially in Banka Subdivision. Since the years 1958-59 and 1960 an interim urban and rural public health organisation programme has been launched and there has also been an increase in the public health staff. Mass inoculation and disinfection of wells in greater number have brought down the incidence. At the time of epidemics of cholera vigorous action is taken for mass inoculation and

disinfection of wells. Public health staff and Medical Officers of District Board, Municipality and also Government Dispensaries and Hospitals treat the patients free of cost. Doctors on emergency duties are also deputed by the Health Department. Drugs are distributed free of cost by them. The incidence has now been brought down.

2. *Plague*.—Plague is not now prevalent in this district. It has almost vanished. The district suffered from plague infection from 1900 to 1909. In the year 1909, the mortality was four only. Then infection disappeared and a revival occurred in Bihpur thana area in 1938 and 1939. But the infection was soon controlled. The infection died out and has not appeared in any part of this district since then.

3. *Small-pox*.—Next to cholera the visitation of small-pox to this district a few years back used to be very common and was almost an annual feature. It broke out in 1919-20, 1920-21, 1923-24 and 1927-28 in Bhagalpur. The following statistics from 1947 to 1960 are suggestive :—

Years				Attacks	Deaths
1947	..	..	..	643	53
1948	..	..	..	812	86
1949	..	..	..	906	13
1950	..	..	..	2,324	466
1951	..	..	..	4,231	953
1952	..	..	..	Not available	Not available.
1953	..	..	..	Ditto	Ditto.
1954	..	..	..	Ditto	Ditto.
1955	..	..	..	40	11
1956	..	..	..	167	67
1957	..	..	..	66	27
1958	..	..	..	246	67
1960	..	..	..	68	30

The abovementioned figures indicate that there has been a very considerable decline in the incidence of small-pox. It appears from the above statistics that the incidence of small-pox was very high in 1950 and 1951 and was low in 1957 and 1960. According to medical science small-pox can be completely controlled by vaccination and re-vaccination. But the figure of vaccination and re-vaccination cannot be considered to be the criteria to control this epidemic because the statistics of vaccination are not connected with the cases of attacks. The reason behind it is that one who

has been vaccinated either primary or re-vaccination may have been attacked or even may have died. The separate statistics of primary vaccination and re-vaccination should be co-related to the cases of attack and one should know how many of the vaccinated cases had the attack and how many of such cases ended in fatality. The statistics of mass vaccination and re-vaccination are given below :—

Vaccination

Years			Primary vaccination	Re-vaccination
1947	..	..	44,396	2,87,038
1948	..	..	29,604	24,339
1949	..	..	29,717	26,370
1950	..	..	32,720	84,282
1951	..	..	27,742	2,09,340
1952	..	..	Not available	Not available.
1953	..	..	Ditto	Ditto.
1954	..	..	Ditto	Ditto.
1955	..	..	49,307	2,67,275
1956-57	..	..	41,569	2,32,042
1957-58	..	..	3,82,255	3,66,270
1958-59	..	..	1,46,434	6,20,628
1960	..	..	32,333	2,70,001

The only known preventive measure against small-pox, is vaccination. Small-pox was responsible for the bulk of infant mortality. The responsibility for compulsory vaccination of every child born in a city or in a village has been placed on the local bodies concerned, the Municipal Board of Bhagalpur or the District Board as the case may be. The local bodies maintain a staff of trained vaccinators who visit the houses where children are born, and vaccinate them within six months of their birth. All infants are expected to be re-vaccinated after 5 years from the first or primary vaccination. In the year 1957-58 and 1958-59 the percentage of vaccinated people seems to be high. The percentage of cases affected by small-pox was much lower in the years 1957 and 1960. It is only by the implementation of the scheme of mass vaccination that the incidence of small-pox may be brought down. That is the reason why in the year 1952-53 the State Government started a mass vaccination scheme in all the districts of the State to give protection against small-pox to the extent of 80 per cent of the population. The penal provision of the Vaccination Act is, however, not enforced.

GENERAL STANDARD OF HEALTH AS REFLECTED BY STATISTICS

From the perusal of the vital statistics given in the District Census Handbook, Bhagalpur, page 117 it appears that the general health of the people of the district is fairly satisfactory. Its mean annual death-rate was 7.3 per mille, that for the whole State being 25.2 per mille for the quinquennial period ending with 1945.

Byrne in the last District Gazetteer of Bhagalpur published in 1910 has mentioned that "the healthiest months are February, March and July. In April, May, June, August and September the average death-rate is about 2.25 per mille. In October, December and January it is about 2.5 per mille". Such monthly figures are neither available in the District Census Handbook, Bhagalpur, published in 1956 nor in the Bihar Statistical Handbook published by the Directorate of Economics and Statistics, Bihar. From the local enquiry and the enquiries made from the eminent doctors of Bhagalpur it has been found that the observation of Mr. Byrne still holds good.

After the great influenza of 1918 the incidence of Public Health was satisfactory through the decade 1921—30. Harvests were satisfactory in all years except in 1921 when the rice crop was below the average. The 1931 Census disclosed 15.2 per cent increase in population of the district. The largest increase was recorded in Banka subdivision.

In 1931—40 decade, Public Health remained satisfactory throughout, though there were mild epidemics in 1931, 1934 and 1935. The 1931 Census recorded an increase of 14.3 per cent in population. Public health continued to be satisfactory during the last decade (1951). The population recorded an increase of 12.3 per cent from the preceding decade.*

In Sadar subdivision the flood-affected areas are unhealthy. They fall under Bihpur Police Station, Gopalpur Police Station. In Banka subdivision, some areas like Chanan and Katoria which are full of forests, may be said as unhealthy areas of this district.

The recurrence of flood makes the flood-affected areas unhealthy for the fact that flood brings poverty to the masses which leads to malnutrition and may be considered as one of the best fields for the growth of any kind of disease. Secondly, the stagnation of flood water in ditches, etc., even after the flood gives a breeding ground for the mosquitoes causing malarial fever in the masses. Secondly the general health condition of the area north of the Ganga, is not so good because of the unfavourable meteorological condition.

*Census of India—1951—Vol. V—Bihar—Part I Report (pages 38-39).

Besides a salubrious climate the people are also trying to live a healthy life irrespective of their social status and vocations. Men have started thinking both individually and conjointly that healthy surroundings make people healthy, and that proper nutrition for body and soul is the principal factor for a healthy life. But they always cannot do so because of poverty.

These ideas culminated in the inception in the district of organisations like Gram Panchayats, Co-operative Societies, Gramudyogs, Sarvodaya Schemes, Children's Physical Culture Clubs, and arrangements to afford necessary medical and hygienic protections and other amenities to the industrial workers.

The Gram Panchayats are provided with Gram Sewaks who are specially trained in the elementary knowledge of health-hygiene and physical culture, which they inculcate amongst the villagers.

The Co-operative Societies particularly look after and extend necessary help in the improvement of agriculture and livestock of the village which are so closely related with the raising of the nutritional standard of the food intake of a locality.

The Gramudyog amongst other activities also deal in production of pure and wholesome food articles like whole rice, *chakki* made flour, *Ghani* made mustard oil, etc., which go a great way in the improvement of people's health.

To protect the industrial workers Government have enforced regulations for the proper safety of these workers and for their health. Government have also insisted for making provisions for them in respective areas for adequate accommodation, recreation, limitation of working hours, labour welfare centres, etc. Beyond these the social medicine is yet unknown in this district.

IMPORTANT CAUSES OF MORTALITY

The Bhagalpur District Gazetteer of 1911 written by Mr. Byrne, I.C.S., mentions "The greatest mortality in every year occurs in children under one year, next in children from 1 to 5 years. In children from 5 to 10 years and youths from 10 to 20 years the mortality is about the same. The mortality from 20 to 30 years increases; it falls slightly from 30 to 40 years and still more from 40 to 50 and 50 to 60 years, after which it increases a little. Briefly the first year of life is the most dangerous and this danger continues, though it gradually lessens, up to the age of ten years. The next decade is the least dangerous. Then there is an increase in danger up to the age of forty years after which there is a progressive fall, decade by decade. At every age, more males die than females, the present annual means being 39.41 males and 32.61 females per mille".

Mr. Byrne's observations substantially still apply. The higher incidence of mortality is confined to the earlier age-group from 1 to 5 years. This is partially due to the malignity of the parents and particularly the bad health of the mother. Fruit is almost scarce in the rural areas and if available at all the price is prohibitive and far out of the reach of the common man. The efforts of the Child Welfare and Maternity Centre are almost like a drop in the ocean and such centres are so far confined to a few urban areas. Primary vaccination has still to become universal and as mentioned before the penal section of the Vaccination Act for refusing or not getting primary vaccination done is not being imposed. Fevers, digestive troubles, rickets, bad liver are some of the very common ailments from which children suffer and ultimately die. Unless the living conditions improve and they can only improve if the common man has a better income, and more ideas of public health and sanitation, there is not much help for a decline of the rate of mortality in children. It is true that in the recent years through the efforts of W.H.O. and other bodies, the State Government and the Centre, there has been some improvement in child mortality but even now the rate is apparently high.

Mr. Byrne's observation regarding the incidence of mortality at the adult age and beyond has, however, slightly changed. On the average the expectation of life has gone up. Use of antibiotics and various other injectules and vitamin pills has partially helped this. Coming to the important causes of mortality fever accounts for about 60 per cent of the reported deaths. Cholera and small-pox occur in the form of localised epidemics, the virulence of which varies greatly, almost every year from April to June and from August to October. The mortality from cholera was very high prior to 1951. Cholera in Bhagalpur district is prevalent from April to June, when the water supply never very satisfactory, begins to fail. Not only this but the wells of the mahallas in occupation of the poorer people are in an unsatisfactory condition. Again cholera may break out from July to the end of the year chiefly commencing with the consumption of the products of the *Mukai* crop, indifferently cooked.

The incidence of mortality from small-pox has, however, declined. The incidence of small-pox was every high in 1950 and 1951 and was low in 1957 and 1960. The mortality from small-pox was very high prior to 1950 but now it is on the wane.

Other bowel complaints such as dysentery and diarrhoea are still very common and severe. The mortality figures for epidemics of cholera are enormously increased by the inclusion of many cases of Dysentery and Diarrhoea.

MALARIA AND ANTI-MALARIA MEASURES

Earlier the incidence of Malaria was very high in this district. The western end of the town is rather low-lying, and during the

rains large areas are flooded. When the river begins to fall, these localities are malarious. Secondly we can say that this was the common disease more frequent at flood-affected areas and forest areas. About 70 per cent of the total deaths was reported under fevers, and of those 40 per cent occurred from malaria. On an investigation it appears that on the average about 10,000 cases of Malaria are treated every year in the hospitals and dispensaries. It is said that malaria is more endemic in North Bhagalpur.

The following statistics collected from Anti-Malaria Control Office at Bhagalpur are of interest so far malarial fever is concerned :—

Years.		Number of patients treated.	Number of patients died.
1952	..	..	4,880
1953	..	..	2,443
1954	..	..	1,525
1955	..	16,515	5,163
1956	..	13,831	4,512
1957	..	6,959	4,863
1958	..	..	..
1959-60 ..	..	2,654	..

When we go through the above statistics, i.e., number of patients treated, number of patients dead, spraying data, number of child examined for spleen, number of child examined for parasite, number of infants examined for parasite, it is clear that there has been a considerable decline as compared to 1955. This decrease was the result of National Malaria Control Programme which was started in the Bhagalpur district. According to this programme, Anti-Malaria Control units and sub-units were started at different places in this district. There are two units, one in Bhagalpur town and other at Banka and 11 sub-units in Block Development area. Prior to the launching of this programme the usual anti-malaria drugs through public health staff posted at various police stations and also through the Medical Officers of the Government and the District Board Dispensaries used to be distributed. With the launching of Malaria Control Programme, spraying of D. D. T. in houses and cattle sheds was also taken up. The figures of 1959-60 indicate that about 2,62,336 houses and cattle sheds were sprayed. It means that the working of Malaria Department is quite satisfactory and that is the reason why this disease is almost controlled.

All the measures taken together have helped to reduce the incidence of malaria to a considerable extent and at present in

addition to the Malaria Control unit, 4 sub-units are functioning in Banka, Rajaun, Colgong and Amarpur. Each sub-unit is under the charge of Anti-Malaria Officer. Hence in the Bhagalpur district one Divisional Malaria Officer, one District Malaria Officer and nine Assistant Malaria Officers have been posted to check this disease.

SANITARY MEASURES TAKEN DURING BAUNSI FAIR

Baunsi, 26 miles from Bhagalpur town is in Banka subdivision. A fair is held there on the occasion of *Paus Sankranti*, i.e., in the month of January of every year. Baunsi fair is one of the most important fairs in Bihar. It lasts for about a week and nearly one lac of people from the district and outside visit the fair. The *mela* area is usually divided into several sections.

The District Medical Officer of Public Health, Bhagalpur and his staff have the responsibility of looking after the sanitation of the area. The large influx of people naturally exposes the area to cholera and other epidemics.

The Medical Officer, Community Project, Baunsi, and the Assistant Health Officer, Banka, have to keep vigilant eyes under the guidance of the District Medical Officer of Health, Bhagalpur.

As there is a permanent dispensary at Baunsi, close to the *mela* area there is no need to establish a temporary dispensary. However, a first aid camp is run by a Medical Officer with a small staff. Inoculations and vaccinations to prevent cholera and pox respectively are given. Sweepers are engaged to put the *mela* area clean. Two Sanitary Inspectors deputed are held responsible for the sanitation, viz., scavenging and sweeping roads, lanes, burning the refuse, attending to lavatories and urinals etc. Adequate number of lavatories and urinals are set up.

Each Sanitary Inspector is provided with one Health Inspector, one Health Assistant, two disinfectors and sweepers according to requirement.

All the streams, tanks, ponds, wells in and around the *mela* are disinfected. Care is taken to control the shops and the food sold. They are required to take a license and their shops are frequently inspected.

HOMOEOPATHIC SYSTEM

It appears that near about 1892 this system of medical treatment was introduced in the district first at Sultangunj. The system slowly spread both in the urban and rural areas. It is roughly

estimated that there are about 150 qualified Homoeopath doctors throughout the district. The number of unqualified men practising Homoeopathy is quite large and some of them have the reputation of being good doctors. Homeo medicines being much cheaper than the medicines of other systems, this system has become quite popular.

A fee charged by experienced Homoeopath doctors varies from rupee one to rupees two or slightly more including the cost of medicines. The first Homoeopathy teaching institution was started in 1919 in Bhagalpur. This institution was, however, closed near about 1935. Another institution known as D. N. Homoeopathy Medical College was started in 1925 but was closed down within two years. At present there is one K. N. H. Medical College which teaches Homoeopathy to students. It is located at Bhikhanpur. There is a charitable dispensary attached to this Medical College. This is subsidised by the L. S.-G. Department. Practising Homoeopath doctors in the rural areas are subsidised by the L. S.-G. Department and the District Board for distribution of free medicines to the poor. There are such doctors in 1960 scattered all over the district. There is a Homoeopathy Medical Association in the district. The President of this Association had mentioned that the practice of Homoeopathy by quacks who do not hesitate to combine injections etc. under Allopathy System has led to the deterioration of the cause of Homoeopathy. The District Association has a working committee with a President, Vice-President, Secretary, Treasurer and 12 members.

AYURVEDIC SYSTEM

The Bhagalpur District Gazetteer of 1911 written by Mr. Byrne, I.C.S., mentions "The Ayurvedic system of medicine is held in the greater esteem, not so much from religious principles as from the idea that the more drastic operation of European medicines is not so suited to the more delicate Indian constitution". This system of treatment is very much prevalent in this district.

By the untiring endeavour of the Vaidya Sammelan, "Shree Jatindra Narain Astanga Ayurveda College" was opened by Dr. Rajendra Prasad, the first President of Indian Union, on the 20th May, 1956, where all the seven departments of Ayurveda, viz. (1) Surgery, (2) Diseases of eye-ear-nose-throat, (3) Medicine, (4) Midwifery and Gynaecology, (5) Diseases of the children, (6) Toxicology and Medical Jurisprudence, and (7) Science of rejuvenation are being taught thoroughly. It is guided by the Ayurvedic Board of the State Government of Bihar. Since 1948 the College is receiving the Government aid annually. In the year 1959-60 the Municipality of Bhagalpur contributed Rs. 1,200 to college and Rs. 2,000 to the Hospital. The District Board of Bhagalpur contributed Rs. 500 annually to the Hospital. The State Government

also through their L. S.-G. and Health Departments have given Rs. 15,000 to college and Rs. 15,000 to hospital per annum. Besides the college gets grants from the public of Bhagalpur by means of subscription and donation. The college has seats for 54 students including one female. The prescribed least qualification for admission is Matriculation and the students have to pay Rs. 3 in 1st year, Rs. 4 in 2nd and 3rd year and Rs. 5 in 4th and final year for tuition fee per mensem.

Through aid of the State Government a building has been constructed. There is also one hostel to accommodate the students. There is a library.

It is roughly estimated that there are about 600 qualified Ayurvedic doctors throughout the district. The number of unqualified men practising Ayurvedic is, unfortunately, quite large and some of them have been successful physicians. There is a District Vaidya Association in the district. The District Association has a working committee with a President, Vice-President, Secretary, Treasurer and 14 members.

AYURVEDIC HOSPITAL

The Ayurvedic Hospital of Bhagalpur is attached to the Ayurvedic College at Nathnagar. The following statistics are important to indicate the number of treated outdoor and indoor patients. The hospital has provided 35 indoor beds for patients out of which 24 for males and 11 for females and the patients are given meal which cost the authorities Re. 0-14-0 each patient per day. The following statistics are of interest :—

Years.		Outdoor patients treated.	Indoor patients treated.	Patients dead.
1952-53	..	59,285	97	Nil.
1953-54	..	63,212	145	Nil.
1954-55	..	76,114	121	Nil.
1955-56	..	78,291	162	Nil.
1956-57	..	73,552	121	Nil.
1957-58	..	80,015	111	Nil.
1958-59	..	57,353	193	Nil.
1959-60	..	65,003	234	4

COMMON INDIGENOUS HERBS

It is understood that a large number of herbs used for *kabiraji* system of medicine are found in this district. Hence with these medical organisations and their different methods of treatment, the common

herbs used by the common people to heal some types of diseases also require special mention.

(a) *Chiraita*.—Commonly used in the form of decoction for the treatment of fever, as an appetiser, liver stimulant and a blood purifier.

(b) *Neem*.—The decoction of *neem* leaves is used for washing wounds and ulcer. Fresh leaves are taken by mouth for purification of blood. *Neem* oil is used as an antiseptic oil and in treatment of scabies. The *neem* oil is also rubbed in hair.

(c) *Trifala*.—Consists of powders derived from the fruits of *Harrey*, *Bahera* and *Amla* in equal quantities. It is used as laxative and as a general tonic. The cold extract of *Trifala* is used for washing eyes as a general tonic to eye.

(d) *Jayfal*.—This is triturated into paste and usually given to infants in cold coryza, cough and slight fever.

(e) *Anantmul*.—The decoction of this is used as a blood purifier in skin diseases.

(f) *Root of Kanail flower*.—The flower grows in jungles and by the side of railway lines. It is red in colour. The root is triturated into paste and is applied over in hypogastrium in case of retention of urine.

(g) *Ghee-Kumar*.—It is also used for the purpose for which root of *Kanail* flower is used.

(h) *Tusli leaves*.—Its decoction is used for the treatment of common cold and coryza.

(i) *Gurich*.—It used for the treatment of dysentery.

(j) *Sanna leaf*.—It is used as a purgative.

(k) *Banslochan*.—It is used as a general tonic.

(l) *Akwan and pila Kanail*.—This is used in the preparation of Abortion sticks and its paste in combination with *Dhatūra* and *opium* is used as counter-irritant.

(m) *Safgol*.—This is used as general tonic and for the treatment of dysentery.

(n) *Opium*.—This is used in small quantity orally to produce sleep and is used in the form of paste as counter-irritant.

It is a fact that in spite of so many Allopathic hospitals and dispensaries in the district, the people have good faith in

Ayurvedic system of medicine. It was observed that the outdoor section of hospital has a daily attendance of about 150 persons. The number of patients treated and patients' death in indoor beds indicates that generally almost all the patients are being cured because the figure of death rate prior to 1959-60 was almost nil. The Ayurvedic hospital and the system of treatment are popular.

MATERNITY AND CHILD WELFARE CENTRES

To provide better care and medical attention to mothers in both pre-natal and post-natal stages and also to children from their birth up to certain age, so far 4 maternity and child welfare centres have been started in this district. Out of these four welfare centres, two, namely "Manmohini Nareshnandini Maternity and Child Welfare Centre" and "Shri Naraini Moti Matri Seva Sadan" are run by local association. The former is given some lumpsum grant from the State Government but the latter is run by the Marwaris. The name of the founder of the latter centre was the late Rai Bahadur Motilal Dhandhanian. The former centre is subsidised by Bihar Maternity and Child Welfare Society. It has six indoor beds. Besides, two centres are run by State Government, one is at Sabour and the other is at Banka. In addition to these centres, the State Government has sanctioned one more centre at Naugachhia but it is not functioning. At present all these centres are under the supervision of the Senior Executive Medical Officer who is also known as the Civil Surgeon.

These centres are concerned with the attendance of children, attendance of expecting and nursing mothers, distribution of milk powder free of cost to the children and baths given to the children and their mothers. They also organise baby shows at intervals and distribution of prizes to the babies at different places during the year. These centres are increasingly becoming popular and very helpful to mothers and children both.

FAMILY PLANNING CENTRES

Family planning is one of the well established health programmes in many other countries and has been adopted in India to bring down the ever-growing population. The problem has been accentuated by scarcity of food, unemployment and other kindred problems. It has been computed that in India there is an annual increase of five millions in the population without a proportionate increase in any of the essential articles of food. The country is not producing enough food for its existing population. Birth control is one of the first conditions of their own and the country's welfare. Physiological, chemical and mechanical methods of contraception have to be accepted as part of the means, however, imperfect and unpleasant for family planning. The Government both at the Centre and the State level have realised their duty in this matter and the policy has been clearly adopted and is being propagated by all possible means.

There are two family planning centres in Bhagalpur, one attached to Sadar hospital, Bhagalpur, another attached to sub-divisional hospital, Banka. The Banka family planning centre has three sub-centres in rural areas.

The centre at Sadar Hospital, Bhagalpur is run by two part-time Medical Officers who advise the public on the utility of family planning. At Banka there is one lady health visitor and the rural centres are run by three trained *dais*.

FAMILY PLANNING WORK DONE AT BHAGALPUR.

Year.	(Female) Tub- ligation.	(Male) Vasec- tomy.	No. of cases attending (Male and Female).	No. of per- sons visited at home.	Con- traceptive supplied by the clinic.	
1	2	3	4	5	6	
1958	..	43	3	219	196	Nil
1959	..	54	6	563	935	566
1960	..	52	4	1,066	2,388	1,066

The above figure indicates that the work of family planning is satisfactory. Prior to 1958 there was no record to show the activity of family planning but the figure of 1960 clearly shows that the people have good faith in the operation of family planning. The number of cases attending the clinic is fast increasing by the year 1960.

The figure in column 4 is the number of the patients who attended the clinic for examination and advice.

The figure in column 5 means that the Lady Health Visitor visits the houses of the patients to propagate the necessity of family planning and to give medical instruction if required.

NURSES' TRAINING CENTRE

There is one school for the training of the auxiliary nurses in the premises of Sadar Hospital, Bhagalpur run by the State Government. It has seats for 90 trainees. The trainees are granted a stipend, messing and uniform allowance during the training. The prescribed least qualification is middle pass only. The State Government has constructed one building for them.

There is a great dearth of qualified nurses or Lady Health Visitors and there will be no unemployment for them in the near future. Unfortunately, there is dearth of suitable candidates who stick to the end of the course.

TRAINING OF COMPOUNDERS, DRESSERS AND *Dais*

Prior to 1957 a course of training was imparted to apprentice compounders but now the training to compounders has been closed

and has been shifted to Patna General Hospital. Training in elementary midwifery is given to *Dais* (Midwives) in the Sadar Hospital, Bhagalpur. The *Dais* are granted stipend i.e., the sum of Rs. 30 per mensem by the Government during the apprenticeship. The training is imparted under U.N.I.C.E.F. Scheme for a period of six months. At present the centre has seats for 18 trainees. They are given no facility for lodging, uniform allowance, etc. and they live outside the premises of the hospital. They come from their own residence to take training. The Lady Doctor, Staff Nurse and the Lady Health Visitor have to give them training.

Besides, there is also a training centre for dressers in the premises of Sadar Hospital, Bhagalpur and Banka and has seats for 18 trainees. The training is imparted for a period of six months. They are also not given any sort of stipend. They also live outside and come to take training. The only facility given to them is that they have not to pay any thing for admission. One doctor and 2 senior compounders have been deputed to give them training.

ACTIVITY OF THE INDIAN MEDICAL ASSOCIATION, BHAGALPUR BRANCH.

In the year 1928 a separate unit of the Indian Medical Association was started at Bhagalpur named as the Bhagalpur Branch. Now the strength of the members of the Bhagalpur Branch of the Indian Medical Association has increased to 100 out of which 46 members are from local area, 44 members from rural area and 10 are non-members who only attend the conference. It has its own building on a land granted by Municipality. The building has not yet been fully completed. The members belonging to urban area have to pay Rs. 30 per annum and the rural members have to pay Rs. 12 annually. Besides, the association is given grants from Bihar Health Committee, Bhagalpur Municipality, District Board, Commissioner's discretionary grant, etc.

The members of the Bhagalpur Branch of the Indian Medical Association hold medical conference annually in the month of March. They deliver lectures on medical problems. No research is done.

A health week is also observed usually in the month of March where stress is given for examination of the school boys and girls, mass inoculation, etc. Health exhibitions and baby-shows are held and popular lectures are delivered. Sports and competitions are held.

The members help at times of emergencies like outbreak of cholera, small-pox, etc. It is quite clear from the report on health week that in the year 1960 about 5,000 persons were vaccinated.

URBAN SANITATION

Arrangements for sanitation in the town are in the hands of the municipal bodies or notified area committees. The main town is Bhagalpur while the other townships are Colgong and Banka.

Bhagalpur city has been expanding enormously and the municipal arrangement for sanitation is proving inadequate (1960). The city has been growing in a lopsided manner and even lanes and bye-lanes are now full of *pucca* houses interspersed with slums. Along with some other cities and towns in Bihar, Bhagalpur is also a pathological case where there has not been any planned utilization of the available land within the city or in the umland. New areas are being developed even without any attention to communication or drainage facilities. The number of old type latrines from where night-soil has to be cleared by manual process still predominates. Mechanised vehicles, a few of which the municipality has got can not cope with the problem of the removal of refuse or garbage from the street sides or corners and unseemly sights of heap of garbage is quite common. The problem of sanitation is accentuated by the fact that there is a sad lack of civic sense. The city has no proper covered sewerage system and *katcha* drains with no proper level form breeding ground of diseases. The municipality and the executive Government do not insist on the implementation of the lanes and bye-lanes and cut fruits often in a rotten condition and eatables are exposed and sold by the side of the drains. Cheap wayside restaurants and hotels selling snacks and other eatables are hardly controlled.

Bhagalpur municipality has an area of 11.09 square miles consisting of 1,35,000 souls (1951) and the municipality has only 279 scavengers which are an extremely inadequate strength. The administrative staff consisting of one Health Officer, 4 Sanitary Inspectors and two Health Disinfectors is also inadequate. A very small percentage of houses has got modern sanitary arrangements.

It has been estimated that an underground sewerage system for Bhagalpur municipality area will cost about Rs. 1 crore. The matter is under investigation but it is not known when the arrangement will be implemented. An Improvement Trust for Bhagalpur is also under contemplation. Without an extremely heavy expenditure and the implementation of a well thoughtout and comprehensive scheme the sanitation of Bhagalpur city is not likely to be improved.

Colgong has got a Municipality while Banka is served by Notified Area Committee. These local bodies look after the local sanitation problems. They are also handicapped for funds and a lack of civic sense in the people. The problems at these places are also of the same pattern as in Bhagalpur city.

WATER SUPPLY

The major part of the town has got pipe water supply. Pipe water supply was first introduced in the city in 1888 mostly out of the funds donated by the gentries of the town. The original source of supply was the river Ganga and pumping used to be done by

means of steam driven pumps. Subsequently the steam driven pumps were replaced by oil driven pumps. In 1929, 400 feet deep tube-wells were sunk in different parts of the town. Due to the exorbitant growth of the population, shifting of the Ganga away from the head works and the dwindling yield from the intake wells and the old tube-wells, a scheme was sanctioned for reorganisation and renovation of the entire town water supply. The scheme was implemented in 1959.

Now-a-days the water supply is distributed to Bhagalpur town by three zones (1) Eastern and Central zone, (2) Southern zone and (3) Western zone. Due to only partial success of the four ordinary tube-wells and two deep tube-wells the water supply could not be improved and balanced as expected, and there is still inadequacy of water supply in some localities particularly in the central zone of Bhagalpur more so due to the undulation of ground level.

Under Bhagalpur Water Supply Reorganisation Scheme two 5" tube-wells and three 8" tube-wells about 600' deep in Nathnagar (Western Zone), and three such 8" tube-wells in Ishakchak and Mirjanhat (Southern zone) area and one 16" deep tube-well about 500' deep in the Lajpat Park (Central zone) have been constructed during 1959-60.

A more detailed coverage on water-supply to Bhagalpur has been given in the text on Local Self-Government.

RURAL SANITATION

The rural areas of the district have luckily got extensive cultivation lands near about the villages. The pattern of the location of the villages is the same here as in the other districts of Bihar. The homestead lands and the houses of the villagers are clustered together while the cultivation lands or the lands for public use belonging to the village are just outside the *dih* or habitable area. This presupposes a rather convenient arrangement for the villagers particularly when each household has not got a proper lavatory. Usually the well-to-do villager's house has got a patch of enclosed land which serves for the conveniences of the women folk. *Katcha* built latrines known *Sandas* are usually built there. Others use the cultivation lands or secluded spots for their conveniences.

The old-type houses in the rural areas have usually very little of ventilation. Cow-dung and other garbage matters are thrown just in front of the village which is one of the important causes of mosquitoes.

An average village in the rural area has not got proper roads or lanes. Usually there are cart tracks up to the houses of the well-to-do persons. Villagers usually keep clean the portion of the

path just in front of the house and often besmear that portion of the path with cow-dung. But unfortunately there are many unsocial people who would throw out refuse of the house-hold at any place or let out the kitchen or bath water on the path-way. Small *pools* of dirty water are often seen and during the rainy season the *pools* serve as a breeding ground for mosquitoes and flies.

Regarding water-supply almost every village has got wells for the supply of drinking and bath water. But the villagers often abuse the water by washing cattle by the side of the well which practice leads to small depressions and water *pools* which are very insanitary and breed mosquitoes and flies. The villagers are now being told to sink manure pits to make their own composts and the propagation of this idea has helped the sanitation problem of the villages to some extent.

The Public Health Engineering Department of Bhagalpur has sunk 850 shallow tube-wells from 1953 to 1959. Shallow tube-wells are also being provided in the *Harijan tolas* of the villages. Some improvements, no doubt, have been made in this direction where Block Development Centres are functioning, but their number is few and far between. The Gram Panchayats in the villages have also to look after the rural sanitation. The wells of the villages and the water-pools are sprayed with D. D. T.

The responsibility of maintaining rural sanitation is technically under the charge of the District Board. The problem is, however, such that the District Board can only take up the bigger problems of water-supply, vaccination, epidemic measures, etc. The village problems of sanitation are essentially the problem of the villagers and the Board can only render some assistance to them by providing wells or by making approach roads, etc. It is unfortunate that every village in the district has not yet got a proper approach road or a connecting link to the nearest main artery. In the chapter under Local Self-Government the functions of the District Board so far as rural sanitation is concerned have been covered.