CHAPTER XV.

MEDICAL AND PUBLIC HEALTH.

General.

The district of Champaran is situated between 26°-16′ and 27°-31′ north latitude and between 83°-50′ and 85°-18′ east longitude. A considerable area of the district lies near the foot-hills in the north. As a matter of fact Nepal forms the boundary of the district throughout its span in the north and north-east. This bordering area is interspersed with ditches, rivulets, rivers, swamps, ravines, hills and forests. Out of the total area of 3,525 square miles of the district, forest occupies an area of 359 square miles. The forest belt lies between 27°-10′ to 27°-31′ north latitude and 83°-50′ to 84°-41′ east longitude. A considerable area of the district was comparatively inaccessible till late. The dampness of climate, the swamps and the extensive forest areas have their effect on health. Comparative inaccessibility in the past stood in the way of quick and cheap medical aid in the remote rural areas.

Although not much is known regarding the medicines and hospitals in the ancient days it may, however, be quite possible that during Asoka's rule Champaran had received close attention. Asoka is supposed to have travelled to Kusinara through Champaran and the Asoka's pillars in North Bihar suggest that the district had received close attention of the Buddhist king. Asoka's inscription on Rock Edict II refers to such an institution known as *Chikitsa*. Vaisali Bhikkhus of North Bihar had three *Glanshalas* where they received free treatment. A recent excavation at Kumrahar (old Patna City) has brought out a seal of *Vihar Arogyashala*. Fa-hien had mentioned Pataliputra having hospitals within the city where gratuitous medical help was given. This tradition had continued as also found by Hiuen-Tsiang. The Universities of Nalanda and Vikramsila in Bihar had *Chikitsa Vidya* or medical science as one of the subjects taught. From all this it may be guessed that this district along with other parts of Bihar had some provisions for medical aid.

During Muslim rule also provisions for medical aid appear to have continued. Champaran had a sizeable Muslim population and it is only expected that *Unani* system of medicine had its hold on Champaran during Muslim rule. Indian medicinal plants had attracted the attention of the early pharmacologists as mentioned by Alberuni (973—1048). Prof. A. H. Askari in a recent article in the Bihar Research Society Journal has referred to the progress of *Unani* system of medicine in India during the Muslim rule. Since the Muslim court patronised *Unani* system of medicine the Hindus also largely became adherent to this system of medicine. Various

branches of medical lore such as pharmacy, surgery, physiology, etc., were practised. Unfortunately at a later stage a crude form of surgery (*Zarahi*) passed on to the barbers, quacks and bleeders (*Ragzans*). John Marshall in his journal edited by Sir Safaat Ahmad Khan had referred to a number of Hindu doctors at Patna. He has also mentioned the remedies of many ailments, such as dropsy, gout, stone, etc., prescribed by Hindu doctors of Patna in November, 1671. There could be no doubt that the influence of Patna had spread to Champaran as well.

There was another source for patronisation of hospitals and dispensaries. Indian administrators had always encouraged public institutions, such as, canals, wells, caravan *sarais,* mosques, schools, etc., and it could well be imagined that hospitals had also received their attention. Villages used to be endowed for the maintenance of such charitable hospitals and other institutions and people irrespective of caste or creed received attention in these institutions. The influence of Jains also encouraged the establishment of hospitals and dispensaries. In the early years of British administration in the different parts of Bihar rich people made endowments for such hospitals and dispensaries. In Champaran district the Raja of Bettiah had made provisions for medical aid since a long time past. The tradition was continued in the endowment of liberal trusts for the maintenance of some very fine hospitals at Bettiah and elsewhere.

In the past the district had a very high incidence of diseases like malaria, kala-azar, cholera, small-pox and plague. Goitre was also once quite common. We do not have any record of pre-British or of early British days which could throw light on the health condition of the people. But a study of the old English correspondence volumes (preserved in the Record Room of Motihari) pertaining to the second and third quarters of the nineteenth century gives the data that the district had frequent outbreaks of cholera, plague, small-pox, fever, etc. Medical institutions and professionals were few and far between. Local *Vaidyas* and *Hakims* with their indigenous medicines and surgery gave the only possible medical aid.

The present hygienic habits of the common man could not be said to be satisfactory. This is considerably controlled by his economic condition. Even their food habits lack considerably from the medical view point. Probably, the poverty of the common man stands in the way of balanced diet of the required calorific value. Their knowlcdge of the balanced diet and its beneficial effects is also very poor.

The daily menu of the common man seldom contain food substance of adequate protein value. The common man's principal items of food consist of rice or bread and some vegetables and occasionally a little pulse. Fish, meat, milk, *ghee,* butter and curd are not available to them regularly. They consume very little

of fruits and that also what is very cheaply available during the season. Protein foods are mainly confined to the persons of upper income groups.

There has not been any proper nutritional survey in the district so that the actual adverse effect of ill-balanced and deficient food upon the health of common man could be indicated with some exactitude.

ORGANISATION.

The entire organization of Medical and Public Health at the district level may be divided into two parts, namely, medical organisation and public health organisation. The former is headed by the Civil Surgeon and the latter by the District Medical Officer of Health. The functions of both the officers are different, although in certain matters the District Medical Officer of Health is to act in consultation with the Civil Surgeon. A brief note on the duties and functions of these two officers is given below separately.

The Civil Surgeon, who is a member of the State Medical Service, is the Superintendent of all the hospitals and dispensaries in the district maintained by the District Board or the Government. He exercises complete professional control over the Medical Officers in the immediate charge of hospitals and dispensaries. The Civil Surgeon 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 the District Board's epidemic doctors, dispensary Medical Officers and the Medical Officers sent by the Health Department, specially to control epidemics. He inspects the work of the dispensary doctors maintained by District Board and advises the Board in all technical and other matters. He reports the cases of latches or mismanagement to the Government. The Civil Surgeon is expected to render every assistance to the District Board and the Board is expected to profit by his expert advice. He is also the clearing house for all information on medical and public health regarding the district. Apart from these, he is also the *ex-officio* President of the district branches of the Indian Medical Association. There are three branches of the Indian Medical Association in the district, first at Motihari (established in 1940), second at Bettiah (established in 1943), and the third at Raxaul. Bettiah commands a membership of 42 doctors, Motihari of 26 doctors and Raxaul of 17 doctors only. There are also other registered medical practitioners who are not members of the branches of the Medical Association.

The Civil Surgeon is also responsible for the enforcement of drug control measures and as such he can inspect any medical shop

within the district and take steps for the prosecution defaulters. He is the authority to issue licenses for medical shops and also to cancel the same in case of non-observance of prescribed rules.

The Civil Surgeon exercises no administrative control over the Mission hospitals, but he could inspect them and these institutions welcome his expert advice.

Prior to 1930 the public health of the district was also the responsibility of the Civil Surgeon and it was only in 1930 that the Government deputed a Health Officer to work under the Champaran District Board. The Health Officer was also given some subordinate staff. The Health Officer is now called the District Medical Officer of Health and is a member of the State Medical Service. 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 is also to supervise the work of the subordinate public health staff, viz., vaccinators, disinfectors, who are the employees of the District Board. His salary is paid by the Government, but travelling and other allowances are met by the District Board. His earned leave is granted by the Medical Directorate, but his casual leave by the Chairman of the District Board. In short he is under the dual control of the District Board as well as the Government.

As has already been stated above, the District Medical Officer of Health is to seek advice of the Civil Surgeon in every matter relating to public health and the latter is to report any case of default and mismanagement to the Government.

There has been a slight change in the organisational side of the medical and public health units. This change aimed at the amalgamation of medical and public health functions at the district level. A Government Circular no. IIA3-1-43 of 1958—139, dated the 3rd January 1959, mentioned that the posts of Civil Surgeons in the districts were converted into posts of Senior Executive Medical Officers and Civil Surgeons with the result that in these districts the Senior Executive Medical Officer and Civil Surgeon is responsible for the efficient implementation, supervision and control of all public health measures, preventive as well as curative. It is again mentioned that "With this circular in all the districts the Civil Surgeon assumed the new executive responsibility and has been given the designation of Senior Executive Medical Officer and Civil Surgeon. Higher above the district level there has been another change. According to the circular quoted above there would be four Divisional Headquarters of the State. These Regional Deputy Directors will now hold charge of the existing offices of the Assistant Directors of Public Health of the four Divisions and would be responsible for all functions of the Health Department, preventive as well as curative and would be delegated powers for arriving at quick decisions and

exercising effective control over the large number of schemes which are being implemented under the Five-Year Plan....." The change has been introduced with a view to accelerating the improvement schemes undertaken by the State in the field of medical and public health of the mass, and thus ensure a healthier and happier society in future.

Hospitals and Rural Dispensaries.

Hospitals and dispensaries in this district, according to the line of treatment followed, may be said to be mainly three, viz., Allopathic, Homeopathic and *Ayurvedic*. The number of allopathic dispensaries is by far the largest, then comes *Ayurvedic* and homeopathic occupies only the last position. There does not appear to be functioning any organized *Unani* dispensary in the district, excepting one in Bettiah, although this line of treatment is also pursued by a number of private practitioners. Apart from these, an absolutely local method of treatment is also followed by the people, which is probably the most degenerated form of *Ayurved*. This system is more or less in the hands of the quack and consists of antidotes and indigenous medicines not within the scope of pharmacopoeia. Then there are some individual practitioners who follow *Ayurvedic-cum*-allopathic line of treatment. Such practitioners are the outcome of effects to modernise *Ayurved*. There is also one naturopathic dispensary in the district at Brindaban, which is subsidised by the District Board.

There is a mention of a dispensary at Motihari in the old letter no. 1, dated the 2nd January 1864, Camp Kessaria, from F. M. Halliday, Esq., Officiating Magistrate, to the Commissioner of Circuit, Patna Division. In the same letter it is also noted that there was an effort being made to set up another dispensary at Bettiah as that was surrounded by an unhealthy climate.

There are altogether 50 Allopathic hospitals and dispensaries functioning in the district, out of which 19 are run by the Government, 27 by the District Board and 3 by the Christian Missionaries. The total number of hospitals with indoor arrangements maintained by all the abovementioned three agencies is 14. A list of hospitals, dispensaries and other medical institutions is given below as on 1st May, 1957 :—

Hospitals.

(A) Names of hospitals maintained by the Government—

Name.	Number of beds.	
(1) Sadar Hospital, Motihari ..	87	(64 for males and 23 for females).
(2) K. E. M. Hospital, Bettiah ..	120	(114 for males and 6 for females).

Name.	Number of beds.	
(3) M. J. K. Hospital, Bettiah ..	267	(all for females).
(4) Ramnagar State Hospital ..	6	(4 for males and 2 for females).
(5) Bagaha State Hospital ..	6	(4 for males and 2 for females).
(6) Narkatiaganj Hospital ..	6	(4 for males and 2 for females).
(7) Police Hospital, Motihari ..	10	(all for males).
(8) Gaunaha Static Hospital ..	6	(4 for males and 2 for females).
(9) Bettiah Refugee Camp Hospital.	20	(no bifurcation made so far).

(B) Names of hospitals maintained by the District Board—

Name.	Number of beds.	
(1) Dhanha Hospital ..	6	(4 for males and 2 for females).
(2) Mehsi Hospital ..	6	(4 for males and 2 for females).
(3) Barachakia Hospital ..	4	(3 for males and 1 for females).
(4) Barharwa Hospital ..	6	(4 for males and 2 for females).

(C) Name of hospital maintained by the Mission—

Name.	Number of beds.	
The Duncan Hospital, Raxaul ..	60	(50 general and 10 midwifery).

As a rule it may be said that all these hospitals actually keep patients much beyond the strength of actual beds. It is difficult to turn out patients and some make-shift arrangement has got to be made to keep them.

Dispensaries.

(A) Names of dispensaries maintained by the Government—

(1) Maniari State Dispensary.
(2) Nautan State Dispensary.
(3) Bhaisalotan P. W. D. Dispensary (run by the Irrigation Department).
(4) Narkatiaganj Railway Dispensary (run by the Railway Department, Central Government).
(5) Dhanha State Dispensary.
(6) Mainatand State Dispensary.

(7) Chauradano State Dispensary.
(8) Raxaul State Dispensary.
(9) Naukahatta Dispensary (meant for refugees in Bettiah).
(10) Kumarbagh Dispensary (meant for refugees in Bettiah).

(B) Names of dispensaries maintained by the District Board—

(1) Sugauli Dispensary.
(2) Adapur Dispensary.
(3) Madhuban Dispensary.
(4) Kessariya Dispensary.
(5) Sangrampur Dispensary.
(6) Pakarideyal Dispensary.
(7) Ghorasahan Dispensary.
(8) Sheikhpurwa Dispensary.
(9) Arreraj Dispensary.
(10) Ramgarhwa Dispensary.
(11) Jihuli Dispensary.
(12) Paharpur Dispensary.
(13) Deokulia Dispensary.
(14) Sariswa Dispensary.
(15) Jogapatty Dispensary.
(16) Chainpatia Dispensary.
(17) Lauria Dispensary.
(18) Amolwa Dispensary.
(19) Sikta Dispensary.
(20) Patilarh Dispensary.
(21) Bakhari Bazar Dispensary.
(22) Semra Bazar Dispensary.
(23) Thakarha Dispensary.

(C) Names of dispensaries maintained by the Christian Mission—

(1) Motihari Dispensary.
(2) Ghorasahan Dispensary.

Leper Clinics.

The district of Champaran was fortunate to have a small incidence of leprosy in the last century. Hunter in his *Statistical Account of Champaran* published in 1877 has quoted the census figures from 1872 census wherein it was shown that 275 males and 30 females, totalling 305, or .0212 of the total population were classified as before in the district. Mr. O'Malley in his *District Gazetteer of Champaran* published in 1907 mentioned about the incidence of leprosy in the district "Leprosy is less common than in any other district in Bihar, the proportion of lepers being only 33 males and 4 females per 1,00,000 of either sex". But Mr. Swanzy in his revised edition of the *District Gazetteer of Champaran* published in 1938 has observed that the incidence of leprosy in the district was "fairly common". In order to combat this fell disease there have been opened up a number of leper clinics by Government

initiative, the District Board and Missionary parties. The Government maintain four leper clinics in the district, viz., (1) Bakhri Leper Clinic, (2) Dhaka Leper Clinic, (3) Bettiah Leper Clinic and (4) Motihari Leper Clinic. The District Board maintains one leper clinic at Ramgarhwa. The Christian Missions maintain (1) the Anti-Leprosy Clinic, Motihari, (2) Ghorasahan Anti-Leprosy Clinic and (3) Belwa Anti-Leprosy Clinic and (4) the Anti-Leprosy Clinic attached to the Duncan Hospital, Raxaul. With the very location of these clinics scattered over different places in the district it is indicated that the incidence of leprosy is widely spread in the district. The most unfortunate fact is that the incidence of leprosy is on increase in certain areas, and scattered cases of leprosy occur in Motihari Mufasil, Hansidhi and Madhuban P.-S. They are mostly concentrated towards the north in the area of Ramgarhwa, Dhaka and Patahi. Attention of the State Government has been drawn in this connection and the Anti-Leprosy Scheme launched in the State works also in this district. Something more is needed to be done since the present measures for control of the incidence of leprosy is not sufficient.

Chest Clinic.

(1) Motihari Chest Clinic (run by a local Association).
(2) Bettiah Chest Clinic (run by the Government).

MOBILE HEALTH CENTRES AND SUB-CENTRES.

After the advent of independence in the country, the planners of a healthy and prosperous India put much emphasis on the intensification of public health measures. It was noted by them that there was an unhappy trend among the young medical graduates, i.e., an allergy to settle down in the rural areas. Their preference for urban areas therefore left a wide gulf between the rural and urban health condition. Moreover, due to ignorance occurrence of epidemics and a large number of death was a regular feature. To protect the rural people in particular and the entire population in general provisions were made for opening up new mobile health centres and sub-centres in the various Community Development Blocks in the country.

Champaran district, since the start of the above scheme has been fortunate to have mobile health centres and sub-centres at Tinpheria, Gonouli and Machargawa in Bagaha Community Development Block. Monin, Jurapakari and Sherwa in Ramnagar Community Development Block; Balbal, Sherwa, Majedua and Jamunia in (Shikarpur) Gaunaha Post Intensive Block, Madhubani, Laukhaura and Lachmipur in Motihari (I) National Extension Service Block and Mathurapur, Semra and Gokhula in Motihari (II) National Extension Service Block. Each sub-centres of National Extension Service Block and Community Development Blocks is run by 1 Health Worker, 1 trained *dai* and 1 servant.

As preventive measures, these centres and sub-centres disinfect wells and houses, give cholera inoculations, vaccination against small-pox, distribute freely skimmed milk powder to the needy and poor public in the area covered by each Health centre and distribute Multivitamin tablets free of cost to the needy population. For curative purposes such measures are taken as patients who attend the health centres are treated as outdoor patients free of cost. The Medical Officer-incharge of the centre attends each sub-centre twice a week and examines the patients and distributes medicines to them.

More of health centres will be opened. It cannot be said that everything has been done according to the demand of the situation but surely the ice has been broken. For people are increasingly becoming more and more health conscious and that more and more people especially the poorest section are getting better medical attention than a decade before.

Maternity and Child Welfare Centres.

Towards providing 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 four maternity and child welfare centres have been opened in the district. Out of these four welfare centres the Motihari Maternity and Child Welfare Centre is run by a local association and subsidised by the Government, the Bettiah Maternity and Child Welfare Centre is run by the State Government, the Gaunaha Maternity and Child Welfare Centre is run by the Government of India and the Ramnagar Maternity Centre is run by the United Nations Invalid and Child Emergency Fund.

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 mothers, baths given to the children and mother and organising Baby shows from time to time and distribution of prizes to the babies at different places during the year. Home visits are also made by the medical staff to look after children, anti-natal cases, post-natal cases, conducting of delivery cases and visiting and re-visiting of toddlers and infants. These centres are increasingly becoming popular and very helpful to mothers and children both.

Family Planning Centres.

There are three family planning centres in Champaran, one attached to the Motihari Sadar Hospital, another attached to M. J. K. Hospital, Bettiah and still another attached to Motihari N. E. S. Block no. I. The last mentioned consists of two sub-centres. The centre at Motihari Hospital is run by a Lady Health Visitor, who advises the desirous public on the utility of family planning. At Bettiah there is one part-time lady doctor and one part-time male doctor, besides one Lady Health Visitor. Each sub-centre at Motihari

Block is run by a trained *dai* and their work is supervised by a Lady Health Visitor.

Nurses Training Centre.

There is one school for auxiliary nurses training at Bettiah, which is run by the State Government and has seats for 30 trainees.

Anti-Malaria Centres.

(1) Anti-Malaria Control Unit, Bettiah, maintained by the State Government.

(2) Anti-Malaria Centre, Laukaria, maintained by the District Board.

Medicine Distributing Centres.

(1) Adhakaparia Medicine Distributing Centre, Raxaul police-station.

(2) Piprasi Bazar Medicine Distributing Centre, Dhanaha police-station.

The staff in each centre consists of one Medical Officer, one Supervisor and one medicine carrier. There are two sub-centres attended to each centre at a distance of three miles which are attended by the Medical Officer and other staff twice a week. They also tour within the radius of five miles from the main centre in villages and distribute medicine to patients.

Public Health Centres.

There are 25 Public Health Centres in the district located in each police-station to look after public health work.

Other Medical Institutions.

Among the other medical institutions mention may be made of 24 *Ayurvedic* dispensaries run by the District Board, three similar dispensaries subsidised by the Government and four homeopathic dispensaries run by the District Board in the district. Besides, there are one *Unani* and one *Kaviraji* institutions at Bettiah which are aided by the Government. They earlier used to be run by the ex-Bettiah Estate, but since the estate has been taken over by the Government, the institutions are run by the Government.

A brief account of the more important medical institutions in the district is given below.

Sadar Hospital, Motihari.

The exact date of establishment of the Sadar Hospital is not available, but from the Inspection Book of the Hospital it appears that it was inspected by the Inspector-General of Civil Hospitals, Bihar

and Bengal as far back as in 1896. The present hospital was then a small dispensary. The daily average attendance of out-patients was 124.7. It was being run by three medical staff, i.e., one Medical Officer, one Compounder and one Dresser.

It is also not available as to when the said dispensary was converted into a hospital. However, from the inspection note of the Inspector-General of Civil Hospitals, Bihar and Orissa, who inspected the hospital in 1912, it appears that it was then running as a hospital, although in the note itself it has been mentioned as a charitable dispensary. In 1912 there was a provision for 50 beds (33 males and 17 females). Since then the hospital has been expanding rapidly. In the earthquake of 1934 the old buildings of the hospital were badly damaged and till 1939 the hospital was run in a thatched hutment and semi-*pucca* building. In 1939 the hospital was shifted to newly built *pucca* buildings at Gopalpur, in which it is functioning still.

The hospital was provincialised with effect from the 1st April, 1945 and since then it is entirely under the management and control of the State Government. Prior to 1945 it was being managed by a joint committee and was being mainly financed by the Champaran District Board and Motihari Municipality. Since provincialisation the entire cost of running the hospital, which comes to about 6 lakhs annually, is borne by the State Government.

The present sanctioned bed strength of the hospital is 87, including 10 seats for tuberculosis patients who are housed in a separate T. B. Ward. The daily average number of indoor and outdoor patients from 1946 to 1956 is as follows :—

Years.	1946.	1947.	1948.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.
1	2	3	4	5	6	7	8	9	10	11	12
Indoor	75.0	88.0	60.8	68.0	78.0	76.0	76.0	88.0	86.0	100.5	107.8
Outdoor	110.0	86.0	93.0	109.0	98.0	110.0	119.0	126.0	133.0	143.0	163.7

An X-ray machine has been installed in this hospital, which is functioning since the 15th January, 1957. A Family Planning Centre in the out-patient department of female section has been started in this hospital since the 1st September, 1955. A Leprosy Clinic functions in the hospital for two days in a week. An Anti-Rabic Centre is also functioning in the hospital. There is a Maternity and Child Welfare Centre attached to this hospital, which is maintained by the Champaran District Board and Motiharj Municipality.

King Edward Memorial Hospital, Bettiah.

In 1911 Mr. J. R. Lewis, Manager, ex-Bettiah Estate, suggested to construct an up-to-date hospital in place of a dilapidated municipal hospital in the memory of late King Edward VII. The foundation of the hospital building was laid on the 31st August, 1912 and the hospital was formerly opened on the 16th March, 1916 by Sir Charles Stuart Bailey, the then Governor of Bihar and Orissa. The hospital then consisted of 58 seats for indoor patients, an outdoor dispensary and staff quarters.

In the earthquake of 1934, the buildings of the hospital were badly damaged and the hospital was run in temporarily built buildings till the 25th February, 1937, when it was shifted to its present buildings, which were constructed at a cost of about Rs. 5.5 lakhs.

So far the financial aspect of the hospital is concerned, the Bettiah King Edward Memorial Hospital Trust Fund was created on the 1st August, 1916 and a sum of Rs. 6,49,000 was invested in Government promissory notes. From time to time the Manager of ex-Bettiah Raj made further investments and now in 1957 the total sum invested comes to Rs. 11,11,700 giving an annual interest of Rs. 32,707.

At present the hospital consists of medical wards, surgical wards, septic ward, isolation and infection ward, tuberculosis ward, paying ward and has 120 beds, 114 for males and 6 for females.

The hospital has been provincialised since the 2nd February, 1951 and since then the Government have the responsibility of its management and finance.

In the year 1958 the daily average number of indoor and out-door patients was 132.3 and 173.3, respectively.

Maharani Janki Kuer Hospital, Bettiah.

The present Maharani Janki Kuer Hospital was originally named as "Bettiah Raj Lady Dufferin Hospital" and was established by the Maharaja of ex-Bettiah Estate during the reign of Maharani Victoria. It used to be managed and maintained at the cost of ex-Bettiah Raj. The hospital was rechristened as "Maharani Janki Kuer Hospital" in 1949.

In 1935 the ex-Bettiah Raj authorities, under a deed of trust, invested a sum of Rs. 9,50,000 and formed a Committee of Management consisting of the District Magistrate, the Manager, ex-Bettiah Raj, the Civil Surgeon, Champaran, the Lady Medical Superintendent of the hospital and a lady member nominated by the Government. Thence forward the hospital used to be financed by the interest accrued on the investments, contributions from the

ex-Bettiah Raj and the Government. From the 1st January, 1949 the hospital has been provincialised and is now under the control and management of the Government.

Up to the 31st March, 1956 the sanctioned bed strength of the hospital was 120, although the daily average attendance of in-patients was always more than 160 and the daily average attendance of out-patients was also about the same. Naturally, the Government raised the bed of the hospital to 167 with effect from the 1st April, 1956 and the necessary staff for the increased bed strength was also sanctioned. At present the hospital consists of medical ward, surgical ward, maternity ward, isolation ward, paying ward and children ward.

A large number of gynæcological and obstetrical cases come for treatment in this hospital. Even cases from the territory of Nepal, Uttar Pradesh, Darbhanga and Muzaffarpur come for treatment in this hospital. A few cases from Gaya, it is reported, have also been received recently. The number of labour cases treated in 1950 was 919 which went up to 2,069 in 1956. The number of labour cases is increasing every year, as the people are becoming more and more medical minded gradually. Similarly the number of operations performed has also considerably increased in recent years.

The Main Hospital Block, including the out-patient department and isolation ward, was erected in 1892 and has now been declared unsafe for habitation. Thus the necessity for the construction of a new building has become somewhat unavoidable. In 1958 the daily average number of indoor and outdoor patients was 243.99 and 128.62, respectively.

The Duncan Hospital, Raxaul.

The Duncan Hospital, Raxaul was founded as a 30-bedded hospital in 1931 by Dr. H. C. Duncan and functioned under his superintendentship until 1941, when he proceeded on army medical service. In his absence it was run under the superintendentship of a temporary doctor till 1942 and was closed in that year. The hospital was re-opened in October, 1948, when Mr. and Mrs. Strong, both doctors, were appointed by the Mission. This hospital is functioning under the auspices of the Regions Beyond Missionary Union.

Since 1948 the hospital has gradually been developing. A septic tank system has been installed throughout the compound of the hospital and the lighting and water systems have been improved and extended. There have also been extension of old buildings and construction of new ones. Extensions have been made in the office block and various staff quarters. A Nurses Home with lecture room, demonstration room and staff kitchen, dining rooms and godowns, memorial block of six small private rooms for women patients,

dispensary block, men's out-patient department, leprosy clinic and an X-ray block have been constructed. A pathological laboratory was established in the hospital in 1952 and the X-ray unit was installed in 1956. The present number of general beds is 50 and that of midwifery is 20 in 1959.

This hospital also imparts training to nurses and dressers. In 1950 the hospital was approved by the Bihar Nursing Council for affiliation with the Duchess of Teck Hospital, Patna (Women's Hospital) for the purpose of providing training for their trainees in male nursing. In 1953, it was recognised as training centre for dressers' course and in 1956 it was approved by the Bihar Nursing Council for auxiliary nurses' training in conjunction with the Duchess of Teck Hospital, Patna.

There has been considerable increase in the number of patients in this hospital in recent years. The average daily attendance of out-patients has increased from 43 in 1953 to 72 in 1958. Similarly the number of in-patients during the period has increased from 2.8 to 4.4 in 1958. The number of new patients and those who repeated their visits in the Leper Clinic of the hospital was 122 and 2,637, respectively in 1958.

Diseases, Deaths and causes of Deaths.

The common diseases in this district are malaria, kala-azar, filariaisis, tuberculosis, leprosy, venereal diseases, virus diseases, i.e., erruptive fever (small-pox), dengue, enteric fevers (typhoid, para-typhoid A and B), skin diseases, diarrhoea, dysentery (baccillary and amœbic), hookworm infection, and goitre.* Earlier the district was also a victim of cholera and plague, but now the incidence of the former has fallen down to the negligible extent and the latter has not occurred since 1948.

Separate statistics showing the incidence for the principal diseases are not available, excepting for fever, cholera, small-pox and plague. The statistics of fever are reported to include almost all types of fever, excepting small-pox. The statistics of fever are given below and that of small-pox, plague and cholera will be given under the sub-head " Epidemics " :—

Year.	Fever cases treated.	Deaths from fever.
1930	Not available	..
1931	Ditto	..
1932	Ditto	..
1933	Ditto	..

* A team of doctors at the instance of the Indian Council of Medical Research, New Delhi had visited different places in Bettiah subdivision and collected materials for investigation into the possible causes of Goitre (P. C. R. C.)

Year.	Fever cases treated.	Deaths from fever.
1934	Not available	35,101
1935	Ditto	34,865
1936	Ditto	36,322
1937	Ditto	32,745
1938	Ditto	40,792
1939	Ditto	38,555
1940	Ditto	37,704
1941	Ditto	35,520
1942	Ditto	33,551
1943	Ditto	31,884
1944	Ditto	45,619
1945	Ditto	52,272
1946	Ditto	43,735
1947	Ditto	34,869
1948	72,679	26,307
1949	73,899	23,823
1950	71,958	27,850
1951	73,075	27,216
1952	90,728	23,317
1953	60,809	22,361
1954	72,098	21,231
1955	51,331	17,214
1956	86,844	17,646

There is no co-relation between the number of fever cases treated and the number of reported deaths from fever. The cases of fever treated only include such figures as reported in the annual return of different hospitals and dispensaries, whereas the number of deaths from fever includes the figures reported by the village *chaukidar* as well as the figures given in the annual return of the different hospitals and dispensaries.

Of all kinds of fever malaria and kala-azar have been more common in the district. Malaria will be dealt with later. So far kala-azar is concerned, it is reported that the incidence has been very high in this district. By the vigorous public health measures and treatment of cases the disease has been somewhat controlled. Spraying of D. D. T. in the district to control malaria has also a side effect on sand fly and has naturally aided in controlling the epidemic of kala-azar.

It is reported that the incidence of diarrhoea and dysentery was considerably high in the past. The incidence has been brought down by the regular disinfection of wells by the public health staff, supply of better drinking water and sinking of tube-wells in the

rural area. Free distribution of drugs by the public health staff, Medical Officers of the District Board and Gram Panchayats has also helped improve the situation.

The incidence of leprosy is reported to be on the increase in certain rural areas of the district. No leprosy survey has yet taken place in the district. Attention of the State Government has been drawn towards this disease and recently an anti-leprosy scheme has been launched in the State. The existing measures for the control of the incidence of leprosy are not sufficient. The names of anti-leprosy clinics have already been mentioned above.

The tuberculosis of the lungs is one of the most common diseases of the district. There are only two chest clinics functioning in the district, one attached to the Sadar Hospital, Motihari and another at Bettiah. B. C. G. vaccination to school children was given in 1952-53, but this measure was not sufficient. The attention of the State Government has been drawn to the fact and B. C. G. vaccination on a mass scale is to be started in this district.

The venereal disease cases are treated in almost all the hospitals and dispensaries of the district. There is no special arrangement for the treatment of this disease in any of the medical institutions in the district. The present arrangement is not considered to be satisfactory. It is reported that no particular increase is visible in the incidence of venereal diseases.

Goitre is a common disease of the district, chiefly in the foot-hill area of Tarai. The belt by the side of river Sikrahana was particularly affected by Goitre before. Mineral deficiencies in the drinking water of the area is responsible for the spread of this disease. Better water-supply will control this disease.

The figures of total death for the district as a whole for the year 1941 to 1956 are given below :—

Year.	Deaths (registered).
1941	44,394
1942	41,241
1943	42,718
1944	83,062
1945	63,330
1946	55,861
1947	40,195
1948	33,173

Year.	Deaths (registered).
1949	27,974
1950	36,618
1951	35,849
1952	28,681
1953	26,456
1954	23,264
1955	21,455
1956	20,817

The abovementioned figures for total deaths in the district, when compared to the figures for fever quoted earlier, clearly show that in the total death the share of fever is the largest. From the study of figures of deaths from cholera, plague, and small-pox, which will be mentioned later, it is found that next to fever cholera used to have next share before 1951. Since then the incidence of death from almost all these diseases has shown a remarkable decline and has become negligible as compared to the earlier incidence. The fever has also shown a downward tendency, still the death from fever is quite considerable.

Epidemics and their Control.

Epidemics were also a worry to the earlier administrative officers particularly because of the inaccessibility of places. From letter no. 210, dated the 24th August 1845, from Mr. H. Alexander, Joint Magistrate, Champaran, to Mr. Halliday, Secretary to the Government of Bengal, it would appear that there was a serious outbreak of cholera at Motihari town, Motihari Jail and Sugauli. Strict orders were given from the administrative headquarters to take proper precautions from before. A general order was issued by the Right Honourable the Commander-in-chief, dated the 3rd November, 1858 to this effect. The Sanitary Officers were warned to take measures to have themselves apprised of the earliest appearance in the district of any epidemic specially cholera and communicate with each other regarding the peculiar features and progress of such diseases.

Of the diseases which generally take an epidemic form in this district, mention may be made of cholera, plague, small-pox and malaria.

As mentioned before, next to fever the greatest mortality in this district occurs from cholera. There are references to widespread cholera in different years in the nineteenth century. The worst

epidemic of cholera on record occurred in 1934, 1935, 1944 and 1946. The following statistics may be of interest so far cholera is concerned :—

Year.	Attacks.	Deaths.	Inoculation.	Well disinfection.
1930 to 1933	N.A.	N.A.	N.A.	N.A.
1934 ..	7,520	6,156	3,63,541	28,376
1935 ..	7,855	3,638	2,60,538	26,358
1936 ..	N.A.	N.A.	22,078	N.A.
1937 ..	N.A.	N.A.	23,249	N.A.
1938 ..	3,945	2,698	2,35,732	26,542
1939 ..	347	288	1,20,114	N.A.
1940 ..	4,223	3,258	1,79,131	29,699
1941 ..	2,665	2,426	2,50,807	N.A.
1942 ..	2,208	1,775	2,46,326	24,899
1943 ..	2,199	1,695	2,17,893	N.A.
1944 ..	30,286	22,338	7,592	29,387
1945 ..	4,405	4,214	6,32,156	20,758
1946 ..	8,993	7,390	6,69,125	2,596
1947 ..	2,029	1,279	6,03,520	N.A.
1948 ..	2,643	2,209	4,61,940	N.A.
1949 ..	1,337	305	2,09,486	N.A.
1950 ..	7,959	3,907	6,48,635	9,795
1951 ..	107	54	3,56,835	8,862
1952 ..	304	194	3,06,725	1,75,079
1953 ..	714	352	5,26,940	1,84,345
1954 ..	6	1	3,78,189	1,58,727
1955 ..	..	..	3,84,455	1,58,727
1956 ..	82	41	3,64,066	2,34,208

The localities which chiefly used to be affected by cholera were the flood-affected pockets of Madhuban, Patahi, Dhaka, Kessariya, Gobindganj, Nautan, Jigopatti, Bagaha, Motihari Moffasil, Dhanaha, Majhaulia, Adapur and Lauriya thanas. May, June and July are the months when cholera epidemics generally occur.

Prior to 1951 the incidence of cholera attacks and deaths was very high, the year 1944 being the peak year. Since the year 1951-52 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. During the First Five-Year Plan period a scheme of National Water-Supply was started and the rural areas were provided with plenty of tube-wells which provided portable drinking water in the flood-affected area of this district. At the time of epidemics of cholera vigorous action is taken for mass inoculation and disinfection of wells. There is also a provision for opening emergency cholera hospitals in the affected rural areas to treat the cases locally on a short notice, when and where the emergency arises. Public health staff and Medical Officers of the District Board and Government dispensaries treat the cases free of cost. Doctors on emergency duties are also deputed by the Health Department. Drugs are distributed free of cost by these staff. The incidence has now been brought down to somewhat negligible point as compared to previous incidence.

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. The following statistics are important to indicate the incidence of small-pox and its control :—

Year.	Attacks.	Deaths.	Vaccination.	
			Primary.	Re-vaccination.
1930 ..	N.A.	115	37,738	2,767
1931 ..	N.A.	259	38,401	2,153
1932 ..	N.A.	1,069	50,459	31,086
1933 ..	N.A.	2,186	48,238	39,938
1934 ..	945	469	60,191	19,578
1935 ..	1,023	610	69,889	24,525
1936 ..	543	277	66,382	12,999
1937 ..	705	297	68,529	20,034
1938 ..	1,363	618	68,557	32,682
1939 ..	1,626	600	61,845	35,016
1940 ..	704	313	55,038	38,319

Year.	Attacks.	Deaths.	Vaccination.	
			Primary.	Re-vaccination.
1941 ..	780	308	40,201	28,102
1942 ..	845	270	55,833	28,953
1943 ..	702	294	88,616	18,702
1944 ..	1,899	1,239	63,351	36,991
1945 ..	23,920	1,661	46,572	1,35,542
1946 ..	910	265	75,493	20,115
1947 ..	450	69	67,190	18,064
1948 ..	606	345	68,455	62,263
1949 ..	315	333	83,971	66,206
1950 ..	1,452	931	85,407	1,62,461
1951 ..	1,092	200	64,291	7,04,493
1952 ..	433	51	1,19,280	2,81,440
1953 ..	536	65	86,933	25,31,494
1954 ..	35	1	39,017	2,07,202
1955 ..	16	2	66,322	7,33,338
1956 ..	..	..	79,643	10,19,441

The abovementioned figures indicate that there has been considerable decline in the incidence of small-pox. It was brought to nil in 1956. The reason for such a rapid reduction in the incidence is reported to be the implementation of the scheme of mass vaccination. In the year 1952-53 the Government of Bihar 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. Extra Health Assistants were employed and they were deputed districtwise. Vaccine Institute, Namkum, Ranchi has had to increase the production of lymph vaccine and supply thereof to the district staff.

The scheme was also launched in the district of Champaran in 1952 and by the close of the First Five-Year Plan the mass vaccination scheme was completed and it is reported that population to the extent of 70 per cent was vaccinated.

Plague was more or less an annual epidemic in both the subdivisions of the district prior to 1949. The worst affected area was Bettiah subdivision, specially Bettiah, Bagaha and Majhaulia thanas. The following figures in this respect are of interest :—

Year.	Attacks.	Deaths.	Inoculation.	House cynogassed.	Rat-holes cynogassed.	D. D. T. sprayed in houses.
1	2	3	4	5	6	7
1930 ..	..	..	..	..	..	..
1931 ..	..	..	..	..	..	..
1932 ..	..	..	..	..	..	..
1933 ..	..	..	..	..	..	..
1934 ..	45	42	1,345	..	..	60
1935 ..	140	135	3,729	..	..	173
1936 ..	29	27	3,945	..	..	52
1937 ..	8	6	3,260	..	..	16
1938 ..	130	127	4,035	..	..	145
1939 ..	57	44	4,610	..	..	..
1940 ..	83	46	6,701	..	..	74
1941 ..	60	22	5,832	..	..	60
1942 ..	Nil	Nil	3,075	..	..	..
1943 ..	12	6	4,968	..	..	..
1944 ..	190	184	21,745	..	..	196
1945 ..	50	47	2,302	..	..	62
1946 ..	72	65	20,374	559	6,605	345
1947 ..	78	63	23,521	650	8,532	421
1948 ..	32	15	14,559	8,588	70,938	4,597
1949 ..	Nil	Nil	45	10,087	57,738	2,244

The Souvenir no. XVIII published by the Bihar State Branch of the Indian Medical Association published on the eve of Bihar State Medical Conference at Bettiah in 1958 indicates that there were severe epidemics of plague in 1814 and 1916. But figures are not available.

The incidence was fairly high in 1944 and 1947. The proportion of death to attack was exceptionally high in 1944.

By vigorous anti-plague measures the epidemic was controlled and now since the year 1949 the disease is absent in this district. The anti-plague measures consisted of inoculation, cynogassing the houses and rat-holes, spray of D. D. T. and free distribution of sulpha-drugs. The anti-plague measures taken by the public health staff has brought the epidemic completely under control. From time to time special epidemic staff used to be deputed to control the epidemic. Since the year 1953 the scheme has been abolished as the plague as an epidemic could be said to have completely subsided.

Malaria and Anti-Malarial Measures.

Earlier the incidence of malaria was very high in this district. The usually affected pockets were the foot-hill areas of the district. Flood-affected areas were also the victim of this disease. Generally it used to take epidemic form in these areas. The statistics of malarial incidence are not separately available but are included in the figures for fever which have already been quoted above.

The splenic index as per survey done in 1952-53 at Narkatiaganj, Bagaha and Ramnagar and in 1953-54 at Sikta, Mainatand, Raxaul, Ghorasahan and Adapur was 35 to 85 per cent, but in 1956 in the same area it was found to be 10.15 per cent. This decrease was the result of National Malaria Control Programme which was started immediately after the splenic surveys were completed, that is, in 1954. According to this programme, Anti-Malaria Control units and Sub-units were started at different places in the district. 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. In respect of the distribution of medicines, more vigorous action has been taken by establishing Control Units and Sub-units. The Malaria Control Unit is at present functioning in this district with headquarters at Bettiah. Earlier its headquarters was at Motihari till 1st June 1956.

In the areas where Malaria Control Programme has not been launched medicines are distributed through public health staff, Medical Officers of the Government and the District Board dispensaries, emergency Medical Officers posted by the Government from time to time and Gram Panchayats.

Anti-malaria drugs are supplied by the Health Directorate and are also purchased by the District Magistrate for distribution in the rural area.

All the measures taken together have helped reduce the incidence of malaria to a considerable extent and at present in addition to the Malaria Control Unit, one Anti-malaria Centre is

functioning in this district at Laukaria, which is maintained by the local District Board.

Registration of Vital Statistics.

The system for the collection of vital statistics introduced in 1892 is still in vogue. Under this system vital occurrences are reported by the *chaukidars* to the police, and the latter submits monthly returns to the Civil Surgeon, who finally prepares statistics for the whole district. The *chaukidar's* knowledge of the diseases is naturally vague and it cannot be said that he is normally right in most of the cases regarding the diagnosis of the case. It has also to be mentioned that there is no co-relationship between the report of diseases and the report of deaths. A *chaukidar* reporting fifty cases of attacks of fever in one week and five cases of death from fever in that week does not necessarily mean that the five cases of death from fever came from that fifty cases of fever reported.

The vital statistics as recorded at the census of 1951 from 1941 to 1950 and as supplied by the Civil Surgeon for the later period are given below :—

Year.	Births.	Deaths.
1941	74,430	44,394
1942	64,060	41,241
1943	57,807	42,718
1944	52,604	83,062
1945	52,396	63,330
1946	53,718	55,861
1947	45,479	40,195
1948	46,130	33,173
1949	51,074	27,974
1950	52,994	36,618
1951	50,376	35,849
1952	51,884	28,681
1953	54,516	26,456
1954	55,302	23,264
1955	56,045	21,455
1956	58,738	20,817

In the number of births there has been a considerable decline as compared to 1941. The figures show that the decline in the number of births set in since 1942 and continued more or less to be so till the year 1948, from whence it again showed improvement. The reasons for such a mercurial rise and fall, may be said to be many, although nothing definite can be said. It appears that during the war period some dislocation might have occurred in the static life of the male population of the district and this may be said one of

the probable reasons for the decline. Then the same period also appears to be the period of rampant epidemics and other diseases which resulted into considerable deaths. Although the age-groups of the deceased persons are not available, but it may also be one of the reasons of decline in the number of births. The figures for the years immediately succeeding the war provides ground for such reasoning. The figures from 1949 to 1955 probably appear to be related with the huge decline in the incidence of epidemics and other diseases and also with the general prosperity or otherwise of the district in different years. The birth control measures are also being resorted to by the people of the district since last two to three years. They are becoming gradually popular.

There has also been considerable decline in the figures of death. The number is even less than half in 1956. Heavy deaths occurred in 1944, 1945 and 1946. These were the years when different epidemics and fever took the heaviest toll of life. The decline in the recent years has been partly because of the decline in the incidence of epidemics as well as in the infantile mortality.

Health Surveys.

Although the incidence of diseases is quite high in this district and the nutritional value of the diet of the common man is very poor, there has been no proper nutritional survey in the district. There was a nutrition assessment of the children up to 14 years at Bagaha and Narkatiaganj which are small townships in Bettiah subdivision. This assessment in 1953 gives us some idea of the percentage of children manifesting deficiency diseases. At these places the common ailments for which a large number of children were suffering were fluorosis, caries, adipose tissue and diarrhœa. The nutrition assessment schedule sent by the Civil Surgeon lacks in the information as to the number of cases that were actually examined and as such the value of this assessment is only tentative.