CHAPTER XV.

MEDICAL AND PUBLIC HEALTH SERVICES.

EARLY HISTORY.

Like the other parts of the country the system of medicine in the early times was use of locally known medicinal herbs and Ayurvedic system. The Ayurvedic system of medicine had its roots in the culture, the climate and atmosphere of the country. The indigenous herbs and plants contain much medicinal properties capable of effecting relief to the ailing patients at a low cost. They were easily available in the local surroundings. Ayurveda developed the use of minerals which it used as *vas* or *bhasma* prepared according to their own methods which could not but be based on a thorough knowledge of chemistry. Later the Unani system of medicine became popular with the advent of the Muslim rulers. But the *Hakims*, though enjoyed the patronage of the Muslim rulers did not become so popular like the *Vaidyas* in the rural areas and their practice remained confined mostly in the cities.

Buchanan Hamilton in 1810-11 saw the local Sakaldwipi Brahmans and few Maithils practising the Ayurvedic system of treatment. He mentioned: "They in general know more or less of Sangskrita, and have some books treating on diseases and remedies, and written in that language. A great part is committed to memory, and a *Slok* or couplet is on all (occasions) quoted as divine authority to remove all doubts and to astonish the multitude, who do not understand a word of it............. At Bhagalpur, Mungger, Rajmahal and Pratapganj, are men who have regular practice".

Apart from *Vaidyas* and *Hakims* who used to be physicians there were another line of doctors called *jurrahs* who had skill in surgery. They were a class of people mostly Muhammadans who had ointments that were taken to be wonderful specifics for boils, gangrenes and other diseases. Buchanan Hamilton had mentioned that "In the three chief towns (Bhagalpur Division) are about 20 *Jurrahs*, who evacuate the water of hydrocele, treat sores and draw blood both by cutting a vein and by a kind of imperfect cupping. They are by birth barbers". The formula of the specifics they used were guarded secret but they were made of easily available herbs. Some of the village barbers were quite good in the surgical skill, as many people still think. They, however, did not use any antiseptic.

The midwives were the unlettered women of the Chamar caste and merely cut the umbilical cord. The belief in witch-craft and sorcery was rampant everywhere. The sorcery was mainly practised by low people, who cast out devils, cured diseases

and the bites of serpents, and opposed the influence of witch-craft by incantation. Their number during Buchanan Hamilton's time was numerous. Buchanan had mentioned that "A branch of these wiseacres practice inoculation for the small-pox and with the utmost success". The inoculation was chiefly performed by a caste known as Mali or makers of garlands. Buchanan further mentioned that "This success and the general adoption of the practice under the introduction of the vaccine of very little importance, Mr. Hogg at Mungger employed as subordinate vaccinator cannot procure one person to bring a child without a bribe". Witch-craft (*Jadu* or *tona*) was common in the district of Monghyr.

Regarding the indigenous system of medicines W. W. Hunter in the *Statistical Account of Monghyr* published in 1877 mentioned as follows :—

> "The Kabiraji or Hindu physicians of Bihar are possessed of a system of medicine which, in the hands of the more educated members of the profession, is on the whole rational, though founded on a vague and hypothetical knowledge. There are besides a large number of quack doctors in league with the village *ojhas* or spirit charmers and low Brahmans who recommend incantation, charms, and the performance of *puja*".

The Kabirajs or Vaidyas usually had a vast knowledge of herbs and drugs. Hunter had mentioned 116 types of indigenous drugs practised by the Kabirajs.

After the occupation of the district by the Britishers an attempt was made to introduce the allopathic system of treatment. At the beginning there was a lot of antipathy on the part of the people to take to the modern system of allopathic treatment and it was difficult to push an injection or to make an operation. But that phase has now gone. People are definitely hospital-minded in spite of their complaints against the hospitals. The hospitals and dispensaries are usually run by the State or the District Boards. With the abolition of zamindari, that source of charitable endowments for dispensaries, child-welfare and maternity centres has dried up. There are very few private hospitals or dispensaries save a very few run by the Missionaries. Private Nursing Homes as an institution have not yet grown. The private doctors charge quite a lot. The medical practitioners, either Government servants or private practitioners have done no research and they have, as a consequence, no contribution to medical advancement. It has to be mentioned here that it is private charity which founded the Sadar Hospital at Monghyr.

Vital Statistics.

The accuracy of the available vital statistics is open to question. The village *chaukidars* are the source and their intelligence or urge

for investigation is rather low. The diagnosis of the cause of death reported by the village *chaukidars* cannot be relied on; if there is any doubt it is generally attributed to fever. When the *chaukidar* is himself indisposed the reporting agency probably stops altogether for indefinite time. It is expected that with the spread of the *Gram Panchayats* the level of inaccuracy will gradually disappear. A second source of the vital statistics is the census which is taken once in a decade. Occasional health surveys are conducted in a particular area but they are not helpful for generalisations as they are usually confined to the survey of a particular disease in a small area.

The population of district has steadily increased in every census except in the 1921 census which recorded a fall of 1,05,035 which was caused due to the epidemics of cholera, plague and influenza. On the whole birth-rate always exceeded death-rate. The vital statistics as enumerated in the census of 1951 are given below:—

Years.	Birth (registered).			Death (registered).		
	Persons.	Males.	Females.	Persons.	Males.	Females.
1	2	3	4	5	6	7
1941	80,739	41,536	39,203	55,452	29,135	26,317
1942	62,098	34,006	28,092	26,495	15,448	11,047
1943	34,022	18,283	15,739	24,772	13,397	11,375
1944	52,673	27,426	25,247	43,457	22,641	20,816
1945	73,038	38,303	34,735	56,152	29,608	26,544
1946	62,610	32,076	30,534	44,320	23,384	20,936
1947	43,591	23,187	20,404	38,720	20,458	18,262
1948	44,523	23,548	20,975	35,583	19,637	15,946
1949	54,133	27,010	27,123	31,807	15,884	15,923
1950	46,097	23,995	22,102	31,807	17,381	14,426

The figures of vital statistics as recorded in the *Bihar Statistical Handbook* published by the Director, Central Bureau of Economics and Statistics from 1951 to 1955 are put below :—

Year.	Total number of live births registered (male and female).*	Total number of deaths registered (male and female).
1951 ..	50,691	40,149
1952 ..	46,239	24,503
1953 ..	40,558	20,709
1954 ..	38,281	21,151
1955 ..	30,772	16,772

* The vital statistics figures supplied by the Civil Surgeon, Monghyr vary with the census figures mentioned and the figures of the *Bihar Statistical Handbook.* The statistics from the office of the Civil Surgeon appear unacceptable and the figures from the other sources have been accepted.

Thus from the statistics it is apparent that both birth and death-rate had shown downward tendency. The average birth-rate in the quinquennium 1941—1945 was 60,514 or 23.4 per mille of the population whereas in the quinquennium 1946—1950 the average birth-rate fell to 50,151 or 19.9 per mille of the total population. In the last quinquennium the average birth-rate came down to 4,138 or 14.4 per mille of the population. The highest birth-rate was in 1941 while the lowest birth-rate was in 1955. The average death-rate during the quinquennium 1941—1945 was 41,266 or about 16 per mille of the population whereas in the quinquennium 1946—1950 it fell to 36,545 or 12.6 per mille of the population. In the last quinquennium the average death-rate came down to 24,655 or 8.4 per mille of the total population.

The mortality caused by fever exceeds always that of other diseases. But fever covers a number of ailments which the reporters are unable to identify. Deaths from cholera, plague, small-pox and the respiratory diseases had been very few. The incidence of plague which caused havoc during the decade 1911—1921 had been very much reduced.

Diseases.

The principal diseases which are common in the district are malarial fever, *kala-azar,* dysentery, diarrhœa and other forms of bowel diseases, ophthalmia, otorrhea, bronchitis, pneumonia, asthma, leprosy, goitre, small-pox, cholera, plague and tuberculosis.

Malaria is common all over the district. It is a disease transmitted through mosquitoes (*anophiline*) which breed in stagnant water and hence is found mostly in places where mosquitoes can easily breed in abundance. Due to spread of dispensaries in the interior and easy method of treatment by quinine and other synthetic drugs like Mepacrine and Paludrine the evil effects of this disease so common before are not so much to be seen now and death-rate from malaria has much decreased. There has not been any systematic malaria survey in the district. *Kala-azar* is common in North Monghyr. Formerly this disease was a terror in the society and good many cases ended fatally. But now with the invention of ureastibamine and other antimony preparations this disease is quite amenable to treatment and death-rate amongst treated cases is negligible now. The average number of patients treated annually for malaria and *kala-azar* in the different hospitals and dispensaries comes to about 16,000 and 2,000 respectively.*

The Khagaria Subdivisional Hospital, Simri Bakhtiarpur Primary Centre, Manjhaul, Kharagpur, Parsando and Mansichak dispensaries used to treat the large number of malarial patients.

* The figures are based on the number of patients treated in the different hospitals and dispensaries supplied by the Civil Surgeon of Monghyr.

Anti-malaria centres have been recently started at Monghyr, Jamui, Khagaria and Begusarai.

Plague.

Plague first broke out in the district in January, 1900, but subsided in May, only to re-appear with renewed virulence in the ensuing cold weather. The total number of deaths reported in 1900 was 2,052, but as in other districts and as usual during the first seasons of the epidemic the disease was far more prevalent than the reports would indicate, and much of the mortality was concealed. The parts of the district which suffered most were Monghyr town and Sheikhpura *thana*. Next year the epidemic was more widespread, and 4,742 deaths were returned. In 1905 plague caused 11,080 deaths. Since then plague had been an annual visitation for some years. Death-rate due to plague remained high till 1917. After that it gradually decreased and almost disappeared from the district. It re-appeared in the northern part in 1945 and with greater virulence. Due to advanced Public Health measures, e.g., D. D. T. spray, cyanogasing and mass inoculation, the disease could be controlled easily and due to recent advances in curative drugs the death-rate also decreased to a greater extent. The following are the figures of number of attacks and deaths due to plague for the period 1944 to 1952 :—

Year	Number of—		D. D. T. Spray.	Cyanogasing.	Inoculation.
	Attacks.	Deaths.	Number of rooms.		
1	2	3	4	5	6
1944	Nil	Nil	Nil	Nil	44,192
1945	N.A.	253	..	..	3,27,962
1946	1,511	1,043	..	..	2,94,696
1947	106	50	57,103	8,76,537	2,00,739
1948	423	338	1,89,010	8,60,050	3,31,799
1949	592	480	1,43,771	12,84,460	1,67,704
1950	238	124	1,25,748	10,18,007	31,200
1951	Nil	Nil	75,060	4,82,441	21,456
1952	..	..	..	..	..

Cholera.

Cholera is endemic in the district and often breaks out in epidemic form. In the epidemic of 1918 the mortality due to cholera was as high as 7.7 per mille, in 1917 it was 3.1, in 1921 2.4, and in 1919 1.8 per mille. In 1920, 1922 and 1923 the death-rate from this disease was less than one-half per mille, and it has been rare in Monghyr town since the filtered water-supply was installed. The

figures for the last ten years regarding the number of deaths and number of curative cholera measures taken are as follows:—

Year.	Number of deaths.	Inoculation. performed.	Disinfection of wells.
1	2	3	4
1942	3,007	..	..
1943	1,074	..	..
1944	3,513	..	..
1945	6,352	..	..
1946	1,628	..	..
1947	..	4,67,847	19,104
1948	..	4,39,525	41,340
1949	..	1,34,088	30,122
1950	..	5,42,096	94,912
1951	..	5,53,853	1,31,335

Small-pox.

Eighty years ago it was mentioned in the *Statistical Account of Bengal* that "small-pox, though it is ordinarily regarded as an epidemic, is in this district, as in every other where inoculation largely prevails, in reality an endemic from which the people are never free". These remarks no longer hold good for inoculation has ceased, vaccination has made great progress, and since the present system of maintenance of vital statistics was introduced the annual death-rate has never been even 1 per mille.

Figures for the last ten years are as follows :—

Year.	Number of deaths.	Vaccinations performed.	Re-vaccination.	Total.
1	2	3	4	5
1942	430	..	..	..
1943	69	..	..	..
1944	448	67,276	64,006	1,31,282
1945	3,255	67,013	1,77,853	2,44,866
1946	800	66,225	1,39,512	2,05,737
1947	433	59,225	1,23,744	1,82,969
1948	1,159	69,751	69,750	1,39,501
1949	179	69,966	86,728	1,56,694
1950	795	58,161	1,35,370	1,93,921
1951	4,456	84,391	4,01,493	4,85,884

Diarrhœa and Dysentery.

Dysentery is found in all seasons of the year but is met with most frequently during the rains. The poorer classes suffer most from it, a fact which may be attributed to their greater exposure to the vicissitudes of temperature, and also no doubt to bad food, scanty clothing and other privations. Diarrhœa is prevalent in all seasons, but is most common at the beginning and end of the rains.

Intestinal Parasites.

The diseases due to intestinal parasites are very common. The chief varieties to be met with are entamœba hystolitica and giardia among the protozoal infections and hookworm, round-worm and thread-worm amongst the helmenthic infections. Tape worm is rare and is found mostly amongst Mohammadans who take beef.

Amœbiasis has become very common in this district as elsewhere. In about 40 per cent of the stools examined at the hospital during 1952, cysts of entamœba hystolitica were found. This disease besides weakening the digestion and causing vague pain in the abdomen causes various troubles mostly arising out of intestinal toxæmia, e.g., giddiness, reeling of head, fainting fit, palpitation, etc. In spite of various recent drugs this disease is not easily amenable to treatment. It is prevalent amongst all classes of people.

Hookworm is very common in North Monghyr. Round-worm is common in children. Cases have been seen where bunches of round-worms consisting of 100 or more, come out at a time after medicines. One thousand two hundred stools examined during three years at Monghyr hospital indicate the following result :—

	Per cent.
Ent. Hyst. cysts	23
Giardia cysts	21
Hookworm	15
Round-worm	15

There is no well established laboratory in North Monghyr where the figures must be much higher especially for hookworm. About 60—80 per cent of people in North Monghyr suffer from hookworm. This worm punctures the mucus membrane of the intestine, sucks blood and liberates toxin into the blood. Thus in the beginning, this disease causes lethargy, weakness, impaired digestion and other bowel disorders. Gradually these symptoms increase and the patients become highly anæmic and pale. The body gets swollen up due to oedema. The tongue becomes white due to anæmia and the margins get pigmented-blotting paper tongue—a characteristic sign of this disease. This disease is a great scourge on society and causes great loss of man power, the labouring classes mainly being affected. This disease, and as a matter of fact all

diseases due to intestinal parasites are caused by promiscuous defecation and walking bare-footed.

Eye Disease.

Conjunctivitis is common during the months of April and May when the hot west winds are loaded with dust. It often occurs only in a mild form; but among the poor it is apt to take the form of purulent ophthalmia, resulting in total destruction of the eye or in the formation of permanent opacities of the cornea. Most of the poor show signs of eye complications due to avitaminosis. Cataract is very common in the district. Large number of patients are operated upon at the Sadar Hospital, Monghyr and at the Mission Hospital at Bamda. Goitre is confined in a very curious manner to the villages on the bank of the Burhi Gandak in the north-west of the district. Even animals are said to be affected by the disease in some villages. Bamda Mission hospital attracts patients from beyond the district.

Tuberculosis.

This great scourge of society is gradually increasing every day. The hospital figures are not correct indication of the incidence of this disease as lots of cases do not go to the hospital and a good many of them who go to the hospital are not properly diagnosed and are classed as bronchitis or other respiratory diseases. Unhygienic mode of living and lack of care of sputum are the main causes of spreading the infection. Poor housing and poor economic condition of the people help to accelerate the incidence of the disease.

To check the spread of the disease it is essential to educate the masses in the cause and mode of prevention of the disease. The B. C. G. vaccination helps as a prophylactic measure. Isolation and care of sputum are the main steps to be taken to check the disease. Hospitalisation of all patients is not possible for want of beds. The only alternative is isolation in home. A tuberculosis clinic is working at Monghyr from 23 July, 1938 where 324 patients on the average per year are treated. They are given injections twice in a week and are given A. P. free of any charges. They get ordinary medicines from hospital and have to purchase costly drugs. The health visitor of the clinic visits all the affected persons and advises them about their mode of living. There could be much more of domiciliary treatment.

A ten-bedded tuberculosis ward has just been started at the Sadar Hospital. This will give some relief to the patients of the district but this help is like a drop in the ocean. Bronchitis is common in the cold weather, being chiefly met with in the old and poor. Pneumonia is fairly common. Asthma is prevalent chiefly among the old, but it is by no means limited to them. Calculus or stone in the bladder occurs in all parts of the district and is often

found in children. Lathyriasis is fairly common in North Monghyr. Hydrocele is a very common cause of partial disability. Hernia is also getting fairly common in the district.

It is also to be noted that there is a high incidence of hyper-tension particularly among the brain workers with static habits. Coronary Thrombosis is taking a heavy toll among such people. Strain on nerves that the modern trend of life imposes is commonly ascribed to be one of the causes of hyper-tension.

Infirmities.

The most prevalent infirmity is blindness, 55 per 1,00,000 males and 59 per 1,00,000 females having been returned as blind at the census of 1921. It appears to be most common among castes engaged in agricultural pursuits, probably owing to the glare and dust from the sandy soil. Of deaf-mutes there are 36 per 1,00,000 males and 24 per 1,00,000 females, more commonly found along the course of the Burhee Gandak than in other parts of the district and particularly in the Teghra and Begusarai thanas. Insanity is rare, only 8.4 males and 3 females per 1,00,000 returned insane in the census of 1921.

Leper Clinics—Leprosy.

Leprosy is not uncommon, 23 per 1,00,000 males and 36 per 1,00,000 females having been returned as lepers at the census of 1921. Popular belief connects the disease with general uncleanliness of living and unwholesome diet and the lowest castes most frequently suffer from it. But leprosy is no longer confined only to poor classes. Whatever may be the reason there has been a somewhat unfortunate spread of leprosy in other classes as well. The virulence of the disease also appears to increase with the descent in the social order for the lowest classes are generally attacked with the worst form and the development of the disease is more rapid in their case. The earliest symptoms are anæsthetic patches, thickening of the ulnar nerve, and slight hypertrophy of the integument of the ears and forehead.

There are three leper clinics working in the district, viz., at (1) Monghyr, (2) Begusarai and (3) Jamui. There is a Leper Asylum at Monghyr (Purb-Sarai).

With recent advances in the treatment of leprosy it is expected that the number of persons affected with this disease would decrease.

ORGANISATION.

The Civil Surgeon whose designation is now the Senior Executive Medical Officer is the head of the medical and health activities of the district, and in his work he is assisted by several Assistant Civil Surgeons. He is in over-all charges of the State-managed hospitals and dispensaries. He also supervises the hospitals and dispensaries

maintained by the District Board, Municipalities, Development Blocks, etc. The District Medical Officer of Health and the four Assistant Medical Officers of Health of the district work under him. During the time of epidemics he is responsible for checking the spread of the diseases and to afford medical facilities to sufferers. The Senior Executive Medical Officer is also the chief authority to enforce the provision of the drug control measures. He issues licenses to druggists and chemists and has also power to cancel them if he is not satisfied with their operations. He is expected to be more vigilant regarding the sole distribution of sulpha drugs and anti-biotics.

Hospitals and Dispensaries.

There are now (1959) 43 hospitals and dispensaries in the district. Apart from the State Sadar Hospital at Monghyr and the subdivisional hospitals, the other dispensaries are located at Chakai, Gidhaur, Lakhmipur, Mallehpur, Sikandra, Jhajha and Aliganj in the Jamui subdivision, Lakhanpatti, Dahiya, Mansurchak, Ballia, Teghra, Manjhaul, Parihara in the Begusarai subdivision, Gogri, Simri Bakhtiarpur, Chautham, Alouli, Parbatta, Bahadurpur, Bhatkhand, Chapraon, Beldour, in the Khagaria subdivision, Surajgarha, Barbigha, Sheikhpura, Kharagpur, Police Hospital at Monghyr, Gangatta, Ramchandrapur, Jamalpur, Bariarpur, Jalalabad, Sangrampur, Lakhisarai, Barhiya, Parsando, Tetiabamber and Chewra in the Sadar subdivision. Besides them the Eastern Railway maintains hospital at Jamalpur and Jhajha and a dispensary at Kiul for the railway staff. The details of some of the important hospitals and dispensaries are given below :—

Sadar Hospital at Monghyr.

The Sadar Hospital is the oldest medical institution in the district. This was provided by the late Mr. H. Dean in 1883, when the old building was found inadequate for local needs. There were two rooms on the upper storey which got damaged in the last earthquake. Raja Kamleshwari Prasad Sinha made a gift of Rs. 10,000 for the construction of a ward for two paying *parda-nashin* patients; and Raja Deokinandan Prasad Sinha has given Rs. 10,000 for an Infectious Diseases Ward (The Wheeler Ward). The most important addition has been the Female Hospital constructed by late Dalip Narain Singh in 1932 and a double storeyed paying ward consisting of eight rooms by Raja Raghunandan Singh in 1932. A ten-bedded tuberculosis ward was constructed by the Government.

The hospital was formerly managed by the Monghyr Municipality with a substantial aid from the District Board and the Government, but from December, 1944 the hospital has been provincialised and taken over by the Government under the scheme of Provincialization of Sadar and Subdivisional Hospitals.

The Senior Executive Medical Officer, Monghyr is the Superintendent of the hospital. In his work he is assisted by the Deputy Superintendent and the Second, Third and the Fourth Medical Officers. There is a separate building for women-patients. There is a qualified Lady Doctor for them under the Senior Executive Medical Officer. A Dental Surgeon has been recently appointed in charge of the Dental Ward. It has a well equipped X'Ray plant, The hospital has gained popularity and remains over-crowded throughout the year. The total strength of beds of the hospital is 130 (86 for males and 44 for females). The average daily attendance of the outdoor patients in 1958 was 305.11 and indoor patients 129.23. In 1958 the average daily attendance of the outdoor tuberculosis patients was 6.27 for males and 7.66 for females.

Subdivisional Hospitals.

The Jamui Subdivisional Hospital was established in 1917 and was provincialised in 1955. It has 42 beds, 36 for males and six for females. The Begusarai Subdivisional Hospital was opened in 1914 and was provincialised in 1955. The bed strength of the hospital is 42, 34 for males and 8 for females. The Khagaria Subdivisional Hospital has been provincialised under the Kosi and Kamla Relief Scheme in 1949. It has 30 beds for males and 12 beds for females. The hospital work of the subdivisional hospitals is discharged by an Assistant Surgeon and a Second Medical Officer and a Lady Doctor.

The Police Hospital is exclusively for the police staff and it has 16 beds. There are four Missionary dispensaries in the district. They are at Jamalpur (Notre Dame Academy Dispensary), Barbigha, Chakai and at Bamda. The Bamda Dispensary is managed by the Scottish Mission. This is a famous centre for cataract operations. Under Dr. MacPhail and his son the hospital drew patients beyond the district limits in very large number. Only outdoor patients are treated in the remaining State and the District Board-managed dispensaries except Sikandra which has five beds, Simri Bakhtiarpur six and the Gangta Dispensary which has 16 beds. Twenty medical institutions are managed by the State Government, 22 by the District Board and one by the Jamalpur Municipality.

The total strength of the beds in the district including the railway and missionary-managed hospitals and dispensaries is 509. Considering the population the number of beds appears to be far too inadequate and the ratio of beds is one to about 5,500 population.

Other Medical Institutions.

Every block is to be provided with one Medical Officer, one Sanitary Inspector, three Health Workers and three trained *dais* or midwives for medical assistance in the Block area. But out of

39 existing Blocks in the district only 10 have been provided with Medical Officer and other staff. They are at Chakai, Kharagpur, Sheikhpura, Barbigha, Gogri, Parbatta, Khodawandpur, Cheria, Bariarpur and Lakshmipur.

The Tibbi and Ayurvedic Systems.

The two systems of treatment are losing popularity in this district as also elsewhere among all classes of people, the rich, the middle and the poor for certain important reasons,—(1) the lack of modern methods of diagnosis, (2) less of certainty of the action of drugs as compared to the allopathic medicines due to lack in proper recognition of the herbs and minerals that provide the basic materials for the medicines of the two systems, and of the lack of standardisation of the active principles in the medicines in the two systems, (3) lack of charitable institutions serving medicines to the poor, etc.

The easy availability of the sulpha-drugs (e.g., M. B. 760, sulphadiazine, sulphaguanidine), synthetic drugs (e.g., aspirin, enterovioform, saridon) and the recently invented anti-biotics (e.g., penicillin, chloromycetin, streptomycine) have become almost commonly known and have been very valuable additions to the allopathic system of medicines and are capable of treating a very wide range of common diseases from itches and headache to tuberculosis and leprosy with considerable success and with almost at a cheap cost. The advancement in the knowledge of treating successfully a very wide range of deficiency diseases have further narrowed the avenues of medication in the Tibbi and Ayurvedic systems. The above groups of medicines and recognition of vitamins in the allopathic system have given very severe blows to the two indigenous systems of treatment.

The two indigenous systems of treatment are likely to vanish rapidly from the field in the near future in view of growing popularity of the western system of medication and the setting up of the sulpha-drugs, anti-biotics (penicillin, etc.) and basic drugs industries in the country that will reduce the cost of treatment very considerably.

The rich and the middle classes who can afford paid medical aid in the district mostly avail of the allopathic system of medicine. The poor seek the help of the charitable institutions, either the indigenous or the allopathic, that may be easily available to them. The choice of the poor falls generally on a homeopath if he decides upon paid medical help for the obvious cheapness of the medicines in this system.

The Tibbi and Ayurvedic practitioners appear to be in demand under certain conditions as below :—

(1) Very difficult availability of allopathic aid.

(2) Very easy availability of the *Vaidyas* and *Hakims*.

(3) If there be a *Vaidya* or *Hakim* of extraordinary repute within easy reach.

(4) The *Vaidyas* and *Hakims* continue to be popular with some Hindus and Muslims who almost hate the allopathic system of medication for its being a foreign system.

(5) The *Vaidyas* and *Hakims* yet appear to attract considerable female patients for treatment of diseases confined to their sex but probably are not able to give greater relief than that by the female diseases experts in the western system of treatment.

There is only one institution in the whole district that teaches the Ayurvedic system of treatment, and also has an attached hospital and an outdoor dispensary that treat with Ayurvedic medicines. The institution is known as "Shree Ayodhya Shiva Kumari Ayurved Mahavidyalaya" and is situated in the town of Begusarai in North Monghyr. The institution has been started and is being run out of a donation made by a local zamindar, the late Babu Ayodhya Pd. Singh.

The above institution was founded in the year 1946. The teaching section has small up-to-date laboratories and a well maintained botanical garden for Ayurvedic herbs and trees. There are allopathic medical graduates also among the teachers who teach anatomy, physiology, midwifery, etc. The students have to study for four years to obtain a diploma.

The *Vaidyas* in the district have formed a "District Vaidya Sammelan" for gaining and safeguarding their rights and privileges. The total number of qualified *Vaidyas* in the district was 303 in the year 1948 as recorded with the Secretary of the above organisation. The up-to-date strength of qualified *Vaidyas* in the district is not known. Most of the qualified *Vaidyas* are engaged in private practice and only a very few are in service.

There is no Tibbi institution for training *Hakims* and treating cases under the Tibbi system of treatment. There is no organisation of the *Hakims* like the *Vaidya Sammelan.* The number of qualified *Hakims* in the district is not known. Apparently the number of *Hakims* is smaller than that of the *Vaidyas* in the district. Of the two indigenous systems of treatment, the Tibbi system appears to be less popular.

There are no *Vaidyas* or *Hakims* of extraordinary repute at present in the district.

Charitable Ayurvedic and Unani Dispensaries in the District.

(*a*) *Ayurvedic.*—There are five Ayurvedic dispensaries run by the Monghyr District Board. Each dispensary is in charge of a

qualified *Vaidya.* The District Board-managed dispensaries are located at (1) Mananpur (Lakhisarai P.-S.), (2) Nayagaon (Gogri P.-S.), (3) Meghaul (Cheria Bariarpur P.-S.), (4) Sihma (Begusarai P.-S.) and (5) Yogbasni Dighi (Jamui P.-S.).

Besides the above five District Board-managed Ayurvedic dispensaries, there are three more charitable Ayurvedic dispensaries managed jointly by the District Board and the State Government and they are located at (1) Lachhuar (Sikandra P.-S.), (2) Bandehara (Parbatta P.-S.) and (3) Teus (Barbigha P.-S). The above three are known as Government aided Ayurvedic dispensaries.

(*b*) *Tibbi.*—There is only one charitable Unani dispensary in the district at Manjhway (Lakhisarai P.-S.) managed by the District Board.

There are nine qualified Ayurvedic practitioners in the district who get subsidies both from the District Board and the State Government through the District Board for free consultation by the public and free distribution of medicines and they are at Mahadeo-simaria (Sikandra P.-S.), Sohdi (Sheikhpura P.-S.), Abhaipur (Surajgarha P.-S.), Mednichowki (Surajgarha P.-S.), Mangobander (Jamui P.-S.), Garhpura (Bakhri P.-S.), Sonbarsa (Chautham P.-S.), Kamruddinpur (Begusarai P.-S.) and Bindadiara (Monghyr Mufassil P.-S).

There is a proposal to start three more Ayuarvedic dispensaries with equal contributions from the District Board and the State Government.

THE HOMEOPATHIC SYSTEM OF TREATMENT.

The whole of this district is flooded with Homeopathic practitioners. The northern part of the district appears to be richer in the numerical strength of these practitioners. Even a small village in North Monghyr appears to have a Homeopath of its own. The low economic status appears to be an important cause of the popularity of this system of treatment. The fee charged by the experienced ones is from Re. 1 to Rs. 2 inclusive of the cost of medicine for distances up to four or five miles. They cross streams and rivers to reach their patients with only small extra fees. The cost of treatment inclusive of the charge of attendance of the Homeopath for common maladies is generally Re. 1 if the practitioner belongs to the same village and the patient is frequently saved from high costs of attendance and medicinal charges by allopaths.

In quite a number of common maladies where only careful dieting and nursing is needed, the Homeopaths appear to be scoring over their fellow practitioners of the allopathic and indigenous systems with regard to cost of treatment.

A poor villager generally gets the aid of a Homeopath for his near and dear one readily for a cost of one to two rupees and feels

consoled that medical aid was provided irrespective of the result. It is impossible for the same poor villager to requisition an allopath's or a *Vaid's* aid in emergency for the amount needed on Homeopathic aid. This has led to the Homeopaths becoming very important members of the rural society and are always looked to in cases of physical distress.

The village Homeopaths have further added to the armaments of their medicines by freely using some of the reputed allopathic medicines, such as, sulpha drugs, penicillin, calcium, quinine and glucose injections, and a number of reputed patent medicines.

It is difficult to say, in the present state of rural economy, difficult availability of qualified medical aid and their costs of attendance and mixtures, as to how far the village Homeopaths are helpful or harmful to the society in using the above allopathic drugs. They are, however, frequently seen treating cases of malaria, cholera, dysenteries, pneumonia, gonorrhœa, syphilis, carbuncles, etc., with apparent relief to the patients for which qualified medical aid would cost nothing less than ten times the amount given to the village Homeopaths. Most of the village Homeopaths are seen practising the art of injections.

With the rise in the standard of rural living, however, it is expected that Homeopaths will gradually lose ground but that will take a long time.

There is no important Homeopathic institution in the district for teaching and treatment. There is one small Homeopathic school at Kajra that teaches Homeopathy and is locally popular.

The Homeopaths in this district have a District Homeopathic Association for gaining and safeguarding their rights and privileges. Total number of qualified Homeopaths in the district is about 300 according to the up-to-date information available.

There is only one Homeopathic charitable dispensary in this district at Kaindi (P.-S. Sikandra) that receives District Board aid.

Nine Homeopathic practitioners in this district are being subsidised by the District Board and the State Government for free consultation by the public and distribution of free medicines. They are at Birupur (P.-S. Burhee), Piparpanti (P.-S. Gogri), Samho (P.-S. Begusarai), Chak-khand (P.-S. Tarapur), Shekhopur Sarai (P.-S. Barbigha), Chakba (P.-S. Cheria Bariarpur), Telia Bazar (P.-S. Semri Bakhtiarpur), Mahendrapur (P.-S. Begusarai) and Ramnagar (P.-S. Khagaria).

THE CHANDSI SYSTEM OF TREATMENT.

In almost every urban area of the district one finds a practitioner known as a "Chandsi Doctor". They principally treat cases of

acute and chronic ulcers, piles and skin diseases. Their medicinal applications are said to be useful in early cases of piles. The bases of their medicines are a secret.

THE VILLAGE SURGEONS.

The *Hajams* and *Jurrahs* who frequently operated and extracted teeth have lost their hold and the practice of minor surgery appears to have passed on to the qualified dressers and compounders who do not always take septic precautions in treatment.

MATERNITY AND CHILD WELFARE.

There are six Maternity and Child Welfare Centres in the district, viz., Monghyr, Mallehpur, Jamui, Khagaria, Chautham and Begusarai. The Monghyr centre is financed by the Bihar Maternity and Child Welfare Bureau and the rest five by the State Government. The Monghyr centre has its own building and is equipped with modern appliances. It is a well-run and popular institution. Every centre has Health Visitor and trained *dais* to conduct labour cases. Mrs. Devar, a European resident of Monghyr has kept alive the movement in Monghyr.

FAMILY PLANNING.

With a view to protect the health of the mothers and to check the growing alarming rate of growth of population the family planning scheme has been launched. There is a family planning centre attached with the Sadar Hospital, Monghyr under a 'B' grade nurse from 1958. The other centres are at Gogri, Khodawandpur and Cheria Bariarpur. These centres are under the charge of the Lady Health Visitors. The scheme is in its initial stage and not much work has been done yet.

PUBLIC HEALTH.

The District Board, Monghyr is responsible for sanitation and public health services in the rural areas while the Municipality and the Notified Area Committee are in charge of the urban sanitation and health services. The State Government created the post of the Health Officer in 1943 to work under the District Board. The District Health Officer is responsible for the rural sanitation and the prevention of epidemics in the rural areas. The District Health Officer is now under the control of the Senior Executive Medical Officer. There are four Assistant Health Officers, eight Sanitary Inspectors and 27 Health Inspectors in the district. Apart from them there are several vaccinators and disinfectors.

The Public Health activities have been in existence under the District Board since its very inception in 1885. Previously the public health activities were not of continuous nature, but were restricted to the actual period of the epidemics. The activities used

to be almost nil during the pre- and post-epidemic periods. The public health activities have since been of continuous nature and as such requires whole time personnels. The activities compromise of—

(*a*) control of epidemic, mainly cholera, small-pox and plague;

(*b*) improvement of environmental sanitation.

The District Board has provided each *thana* Health Unit with bore-hole machine. The Health Inspectors of the Public Health staff have been advised to maintain records of such latrines constructed to assess the benefit of such latrines from epidemiological point of view. Moreover, they have also been instructed to maintain a Well register to assess the number of wells for their proper and regular disinfection.

CONTROL OF SALE OF FOOD.

This is being done under the provision of the Central Prevention of Food Adulteration Act, 1954. The Assistant Health Officer and the Sanitary Inspectors have been designated as Food Inspectors and have been empowered to take samples as prescribed in the Rules.

Examination of school children has also been attempted but not on a regular basis due to paucity of staff.

MELA SANITATION.

An important *mela* is held at Semariaghat where people congregate with the advent of winter and remain on the banks of the Ganga for a month for religious festivities. Throughout their stay, special arrangements are made by the Public Health Department for medical and public health relief. Besides the arrangement of light sinking of the wells are also made in the *mela* for the convenience of the pilgrims.

MASS VACCINATION.

In order to avoid the epidemic of small-pox, mass vaccination campaign was started in 1951, which is being continued up till now. Under this scheme 30 Government vaccinators and three Government Health Assistants have been specially deputed by the Government, so that the team might function properly.

In addition to this, 100 vaccinators under the Public Health Re-organisation Scheme have been appointed to carry on primary and re-vaccination in the areas allotted to them.

The budgetary minimum provision to finance the Public Health Re-organisation Scheme payable by the Board is Rs. 60,000. Besides this the sources of the Boards are augmented by the Government grant sanctioned year by year for the purpose.

The following table will show the incidence of the epidemic in respect of the cholera, small-pox and plague and the anti-epidemic measures taken thereon :—

Cholera.

Year.	Attack.	Death.	Inoculation.	Disinfection.
1	2	3	4	5
1952-53	65	15	7,74,952	2,40,794
1953-54	909	411	11,17,308	2,93,855
1954-55	66	21	4,69,019	2,61,292
1955-56	286	97	6,42,003	4,02,469
1956-57	108	41	5,96,466	4,05,896

Small-pox.

Year.	Attack.	Death.	Primary vaccination.	Re-vaccination.
1	2	3	4	5
1952-53	124	6	56,753	2,49,123
1953-54	76	..	66,690	1,89,747
1954-55	70	4	56,210	2,71,923
1955-56	19	..	62,227	2,73,281
1956-57	121	23	67,394	3,20,905

Plague.

Year.	Attack.	Death.	Inoculation.	Houses treated with D. D. T.	Rat-holes cyano-gassed.
1	2	3	4	5	6
1952-53 ..	..	..	29,495	23,914	1,92,370
1953-54 ..	..	..	7,996	7,698	48,749
1954-55 ..	..	..	7,300	3,515	57,013
1955-56 ..	..	..	2,529	1,537	25,537
1956-57 ..	..	..	4,670	7,006	19,493

Flood.

The Begusarai and Khagaria subdivisions and some parts of the Sadar subdivision have been generally affected by flood since 1954. A number of flood relief centres is opened where medicines of first aid and treatment of common ailments remain available with the Relief Doctors and other Public Health staff deputed by Government.

Other Public Health Measures.

To minimise the sufferings due to cholera, dysentery and other common ailments, step was taken by the Government for providing medicines boxes and equipments for prompt relief against these diseases as various parts of the district are subjected to drought and flood. The distribution of village type boxes of medicines which commenced in 1951 was very popular. Village type boxes were also purchased out of the District Epidemic Relief Fund placed at the disposal of the District Magistrate and supplied to the villages to supply the medical needs. These boxes are refilled with medicines every year out of the same fund.

Skimmed Milk.

To save people against epidemic diseases, liberal supplies of milk powder and multi-vitamin tablets are made for infants, children and nursing expectant mothers. The result achieved on this account was strikingly good.

Training of Gram Sevaks.

To augment public health work in the rural areas of the district, *Gram Sevaks* were trained in public health. Most of them were supplied with syringes and rotary lancets to perform inoculation and disinfection of wells in their jurisdiction.

Training of Gurus.

A good number of *Gurus* were trained in inoculation and vaccination in 1948 and 1949 to help the public health activities.

Plague.

The sudden outbreak of plague in North Monghyr in 1945 is an important public health event of the last decade. The disease suddenly flared up throughout North Monghyr and formed a rigid belt of infection which was confronted with considerable cost and labour. The infection may be said to have subsided since 1951. Cyanogassing as a precautionary measure against future outbreak is absolutely necessary in the interest of public health measures and for this purpose the cyanogass scheme is still in operation.

Role of N. E. S. and Community Development Projects in control of epidemics and improvement of environmental sanitation.

The Village Level Workers of the N. E. S. and C. D. Projects have also proved to be of some help in the prevention of epidemics and in

the improvement of environmental sanitation. Now more Public Health staff are being posted in the N. E. S. areas for the purpose. The Community Development projects try to keep the villages clean.

WATER-SUPPLY AND DRAINAGE.

Urban Water-supply.—The town of Monghyr and the railway colony at Jamalpur have piped water-supply; the former is owned by the Municipality and the latter by the Eastern Railway Authority. Both draw their supply from the river Ganga at Monghyr. The Monghyr Water Works was opened in 1913 and used to get its raw water from the railway authorities up to early in 1937 when a floating intake with a rising main was provided for it at Kastaharni Ghat. Certain other improvements were also carried out in 1937. Recently in 1952, the capacity of the settling tank has been improved and 50 per cent additional filtration (slow sand) has been provided. Also one of the D. C. Pumping sets on the floating intake has been replaced with a bigger capacity A. C. Pumping Set. The present supply is 9 lac gallons per day, which is proving very inadequate for the large population. Many streets are without water mains, and the pressure is generally low. Comprehensive re-organisation of the water-supply is necessary.

The problem of water-supply in the towns of Begusarai and Khagaria, north of the river Ganga, is becoming acute as the towns are getting congested day by day. Moreover, the water of the surface wells is generally brackish.

Rural Water-supply.—People in the villages draw their supply of water mostly from surface wells but in North Monghyr tanks are also used for the purpose. One and a half inches shallow tube-wells are also becoming popular in the villages in North Monghyr. The Public Health Engineering Department have recently sunk one and a half inches tube-wells in 164 villages, and Government have further sanctioned 100 tube-wells for the flood-affected villages of North Monghyr.

DRAINAGE.

Monghyr and Jamalpur have got a network of *pucca* surface drains. Other towns have also got some *pucca* surface drains; but on the whole the drainage of the towns and the villages in North Monghyr is very unsatisfactory. There are no sewers anywhere in the district.