CHAPTER I

EVOLUTION OF HEALTH SERVICES IN 19TH CENTURY INDIA
The trade and economic interests of East India Company necessitated that some sort of medical facilities were made available for its servants in India. To begin with in the early 17th century, the medical men known as surgeons accompanied the traders and officials on the ship. As the traders became settlers, the health services for the Company's servants also evolved.

The development of health services in India in the 19th century, is the result of the military and economic interests of the British Empire. The mutiny of 1857 led to a shift in the control of power from the East India Company to the Crown. Thus, this period was one of transition that witnessed entry of Indians into those areas that were earlier considered Europeans' preserve. The British rulers also initiated some welfare measures for the Indian people, necessary to attract Indian collaborators and convey their humanitarian image. It also saw the opening of Indian Medical Services to the Indian men through a competitive examination.

This chapter looks at two aspects of health service development. First, we focus on structure and function of health services that includes evolution of structure, its expansion, medical care institutions that came up in the 19th century, public health initiatives and, the role of individual interests of medical men in shaping these services. Second, we look at the disease statistics in the official reports and how these have been interpreted and selectively used for focusing exclusively on the needs of the British Empire. In short the chapter studies the processes by which the medical field became a 'tool of the empire' in India over the 19th century.

STRUCTURE AND FUNCTION OF HEALTH SERVICES

Evolution of Central Structures

A small number of surgeons arrived with the first fleet of East Indian Company in the early 17th century. The number of British surgeons increased steadily as the company extended its trading operations. The medical service was first started in Bengal in 1764 for attending to servants and troops of the East Indian Company. Between 1745 and 1760, the number of medical officers on rolls of the East India Company increased due to wars against the Dutch, the French and the Newab of Bengal. The
expansionist policies of the Company required maintaining a standby army which necessitated the need for a regular medical service.

Before 1800, even though the company had shipboard surgeons and physicians to take care of the health needs of the traders, soldiers and officials, they commonly sought the help of the local physicians. There were two reasons for using the services of the local practitioner. First, the number of British practitioners was small, secondly, the British held the view that the local practitioners were better acquainted with the local diseases. Arguing in favour of using indigenous help, the East India Company encouraged its servants to rely on local rather than expensive imported medicines. The shortage of medical personnel had led to the appointment of large number of locally available men to the Bengal medical service between 1781-84, because of the wars in Maratha and Mysore which had increased the demand for medical men. It took more than one year for English surgeons to come and join the service, so local medical men were recruited.

Some European medical men came and practised in India on their own in the Presidency towns as early as the first half of the 18th century. These medical men were not in the service of the government but were hoping to get appointment in the Company’s service and many of them succeeded in doing so. Some of them were engaged in successful private practice in major cities in the middle of the 19th century also.

The Indian Medical Service gained importance and status by the end of 18th century, when medical officers were granted commission and became commissioned officers. Apart from the political expansion and consolidation of empire during 19th century, there was also an increase in number of trained and qualified medical men from the medical schools in Britain. This increase in the number of medical men and the development of western medicine by the end of the 18th century led to changes in India as well. Steps were taken to move away from medical pluralism and to establish western medicine as a universal and authentic body of knowledge that had the power and know how to master major diseases. The discovery of cowpox vaccination in 1790 provided impetus to this. Universality of western medicine started to take roots, as more trained and qualified doctors from the medical schools were sent to the colonies in significant
numbers. The eminent and senior positions in IMS were held by those who graduated from Edinburgh medical schools during the first half of the 19th century. The London medical schools became popular after 1850s and attendance in these schools offered better prospects for the practitioners. Mark Harrison has prepared the list of IMS officers along with their educational qualification and class composition. He points out that the largest number of recruits were from London medical schools.

By the end of the 18th century, Indian Medical Service (IMS) had three distinct services, namely, covenanted, uncovenanted and subordinated medical service. This was hierarchical, linked and maintained by well formulated rules and regulations regarding pay, status, promotion, working conditions etc. The covenanted service was meant for Europeans, the uncovenanted for Eurasians and Anglo-Indians, the lower subordinated department was meant for Indians. However, IMS men did not enjoy the status of the Indian Civil Service men. As compared to the medical men in Britain, IMS men were ranked lower than the provincial medical professionals in Britain and also much below the fellows of the Royal Colleges of London.

The Court forbade the Indian men to be appointed as the commissioned officers, and it was in 1855 that the appointment became open to Indians after the introduction of competitive examination. The percentage of Indian men in IMS remained very low as the competitive examination took place in England and many Indian could not appear in the examination due to financial constraints. By 1905 only 5 percent of the IMS men were of Indian origin. There were only 28 candidates for 30 posts that were to be filled that year. In the second examination in July 1855, 55 candidates competed for 50 vacancies. The competition was not vigorous between 1855-60, it was only after 1865 that the competition became tough. The admission to services was suspended for nearly five years between 1860-65. During this period the Government was toying with the idea of amalgamation of IMS with the Army Medical Department of the UK.

A Commission was set up to look into the working conditions of IMS. The report of the Commission on IMS in 1866 pointed out that there was great difficulty in filling up vacancies in the medical branches of the public service. The Commission recommended revision of salaries and retention of the privilege of private practice to attract more medical men from Britain. The discontentment coincided with the entry of
Indian men into IMS. Between 1855-60 many Indian men had joined IMS. In 1865 the admission became open to Indians again, after being suspended for five years, but after competitive examination. The report of the Commission also came up in 1866 pointing to the dissatisfaction among European medical men. A deputation of IMS recruits in 1880, pointed out that they felt discriminated against their counterparts in Britain and placed their grievances before secretary of State. What they were demanding was salary at par with their counterparts in Britain as they were working under difficult tropical conditions. The delegation further complained that the attraction of competitive examination held out to young officers belied them when they entered the service. It is possible that, as more and more well trained and competent Indian doctors joined the service, the British Officers felt insecure.

The Indian Medical Service was an extension of the army. A Medical Board had been governing the IMS since 1773. In Nov. 1857, the Medical Board was abolished and each Presidency had Director General and between the Director General (DG) and the senior surgeons were appointed the Inspector Generals (IG) – two in Bengal and one each in Bombay and Madras. In 1859 the DG was redesignated as principal IG and in 1873 this title was changed to that of Surgeon General. The services were originally divided into three branches, corresponding to the armies of Bengal, Madras and Bombay, but in 1896 these divisions were united. From 1st April 1895, after abolishing these separate armies one force was of created – the Indian Army. The Surgeon General with Government of India became the head of the amalgamated Indian Medical Service, and he was designated Director General of the Indian Medical Service.

The duties of the medical officers or the commissioned officers were not confined to the Army only. They were engaged in the performance of civil duties. Their military duties were restricted to the Indian Army, as the needs of the English troops serving in India were looked after by the officers of the Royal Army Medical Corps.

The other class of medical personnel, who were recruited in India, was known as members of civil and military subordinate services. Most often they were trained in medical colleges in the country. They almost had the same qualifications as those in the IMS but were placed below in the ranks of sub-assistant surgeons without much scope of promotion. The apothecaries who had passed only one examination drew more salary.
than the Indian assistant surgeons for the simple reason that the apothecaries came exclusively from the European and Eurasian stock.\textsuperscript{24} New IMS entrants got a salary of Rs. 400 a month, whereas the Indian surgeons began with a salary of Rs. 100 a month. In 1866, the sub-assistant surgeons submitted a memorial to the Government against discrimination in salary and status, but the government rejected it. The sub-assistants again made an appeal to the government on the same issues in 1882 and again in 1896.

In 1896, the government announced two concessions for the sub-assistant surgeons – that a few selected would be considered for the independent charge in selected civil stations and would be provided a salary of Rs. 300 a month and they would be known as senior grade civil assistant surgeons. This opened some avenues for promotion for the class of sub-assistant surgeons. Other wise, their services remained confined to the dispensaries or small hospitals in smaller towns or in the remote areas. By and large, no amount of efficiency or experience raised them to the higher ranks in the service and they remained in the lower ranking and insignificant postings.

Every Officer of the IMS was posted to military duty on entering the service, and it was almost compulsory to work in the service for two years before officers could apply for civil employment. The civil appointments were quite attractive for most of the officers and sooner or later they applied for it. Both services had its advantages. The military service attracted young and the work was usually light, except in the times of war or epidemics; the pay was somewhat higher than the civil employment.\textsuperscript{25}

The civil employment started with a posting at a small remote place and it offered opportunities for experience and earning to the ambitious doctors. The majority of them worked as District Civil Surgeon. Their work was extensive and much heavier than that of a military officer and the pay was less; but the total income was greater and the variety of work lent it an attraction. Henry Edward Sharff, a soldier, scientist, who wrote memoir of his career in India, mentioned that as a civil surgeon he had better opportunities to practise in Banaras. He remarked "... My routine would now take me to my next change, the Cantonment Hospital... Here I could indulge my expertise in surgery to any extent gaining thereby much experience I could not have had in the military hospital".\textsuperscript{26}
Doctors employed under IMS were very possessive about the appointments, especially in reputed hospitals. If lower ranking medical men held some such appointments, the effort was to get such jobs back from them. One such incidence was reported in 1884. An apothecary was in charge of Eden Obstetric hospital as Resident Medical Officer. The Government of Bengal wrote to Government of India that such post should be given to covenanted medical officer. The letter from the Bengal government remarked that, "...it has been found by experience that an officer of the apothecary class, however good he may be in his own line, ...does not possess sufficiently high professional qualifications to meet the varied requirements of the patients, (and) ...also does not carry sufficient moral weight for the purpose of maintaining discipline amongst the establishment or the patients themselves..." 27

Coming back to the expansion of health service structure, we see that it got impetus after the Indian Mutiny in 1857. The number of British troops in India increased after Crown took over the power. One third of the British army was deployed in India after 1857. Along with this, the experience of Crimean war had shown that soldiers suffered and died in greater number because of epidemic and disease rather than wounds of war. It highlighted the need for applying the principles of modern sanitary science as was being done in England. This led to the appointment of Royal Sanitary Commission in 1859 that submitted its report in 1863.

In fact, it was as early as in 1835 that Sir Joseph Martin, an Indian Medical Service officer had recognised that paying attention to sanitary matters was important. He proposed that medical officer be required to send in reports on the medical topography and sanitary statistics of the districts under their charge in order to formulate guidelines for sanitary improvements in the camps, barracks and cantonments. Martin had argued that insanitary conditions could destroy the army and discourage soldiers.28 This sanitary perspective was influenced by the growing recognition in England of the importance of sanitation and clean environment.

In 1863, the Royal Commission in its report pointed out that only six percent of the deaths were due to war in the period (1817-1857) examined by the commission. The four major diseases were responsible for the rest of the deaths amongst British troops.
These four diseases were fevers, dysentery and diarrhoea, liver diseases and cholera. Fevers were responsible for 40 percent of the deaths and ¾ of all hospital admissions.

Modelled on the Public health act in Britain, cantonment acts, regulations were issued. The Military Cantonment Act XXII of 1864 was the first comprehensive legislation. It introduced sanitary policing under the threat of cholera and venereal diseases, and permitted inspection of villages within five kilometres of cantonment areas. Sanitary Police under the charge of medical officer was instituted to superintend conservancy within the cantonment and sanctioned the registration of deaths and the recording of observations in the interest of public health. The Epidemic Disease act of 1897 came in the wake of the plague epidemic, but its implementation caused lot of resentment amongst local people.

In 1864, sanitary commissions were set in the three presidencies. These were consultative bodies, and their function was to advise and assist in all matters relating to health. It was recognised that to reduce mortality in the army, it was necessary to pay attention to the improvement in the general public health, at least in the towns that were in close proximity to the military stations. The basic function of these commissions was to systematically collect facts about the disease, epidemics and sanitation, which would be embodied in the annual reports. After two years sanitary commissions were wound up and in their place three sanitary commissioners were appointed, one for each province. The commissioner of Bengal was appointed the sanitary commissioner to the Government of India and worked in an advisory capacity under the Director General of Indian Medical Service. Since, the sanitary commissioners were drawn from medical and engineering experience, the needs of the army remained their prime concern.

In the presidency towns, the chief administrative officer was known as Surgeon-General, where as in other provinces he was known as the Inspector- General of Civil hospitals. Most of the provinces also had Sanitary Commissioner to look after the sanitary matters. And each district had a medical man known as Civil Surgeon to take care of medical and sanitary matters and also help the local governments to maintain hospitals and dispensaries. The over all responsibility of the medical work rested with the Director-General of Indian Medical Services (DGIMS), who was responsible to the Government of India and it was his duty to supervise the work through out the country.
Apart from him the Sanitary Commissioner advised the Government on sanitary matters. The Sanitary Commissioner was not under the charge of the Director-General, even though the Director-General was vested with the sole responsibility of medical work throughout India and the sanitary commissioner looked after public health and his activities and responsibilities increased during epidemics.

The Home department Notification No. 361 dated 30th July 1886 regarding the administrative staff of the IMS in the provinces in India stated "... The Director General of the Indian Medical Service and Sanitary Commissioner with the Govt. of India will be entitled to receive any information he desires from the Surgeon General, Inspector Generals of the Civil Hospitals, Administrative Medical and Sanitary Commissioners attached to the Local Governments... but he will exercise no direct authority over those officers, who will be solely under the orders of the local Government and Administration to which each belongs...".

Later Expansions of Provincial Infrastructure

As noted above, the central institutions had access to local governments but the later had a degree of autonomy. In the last decade of the 19th century it was felt that each district and municipality is to be provided with its own agents to take care of the needs of the general population. Sanitary commissioner of Bengal in his annual report of 1895 remarked that, "the poor registration of births and deaths are outcome of conditions over which sanitary commissioners have no control. Only a radical change in future could improve things". In the early twentieth century, therefore, while on the one hand there was further strengthening of the provincial services, on the other hand, under the pressure of plague epidemic and Plague Epidemic Report of 1904, the post of sanitary commission was merged with Director General of IMS. This radical change, however, did not produce the expected results.

The British health policy reflected neglect and callousness towards health problems of general population. Despite apathy towards general population and their needs, the trade interest and international demand for safer ports stressed the need to pay attention to the health of the local people. The result was expansion and decentralisation through the Morley Minto Reform in 1909 that came in the wake of
realisation that British can not rule by isolated grandeur alone.\textsuperscript{34} The consolidation of provincial governments was a step in this direction. This also shifted the cost of maintenance to local elite. The creation of additional cadre of health officers at the district level under the district and provincial Boards of Health was the outcome of Morley Minto Reform.

In 1912, the office of the sanitary commission was again made independent and the bacteriological research wing was shifted to the DGIMS with the understanding that separation of research from clinical work deterred men from entering the department and prevented sanitary commissioners from touring.\textsuperscript{35} Such a move created a gulf between policy and research that were centralised and the sanitary activities that were decentralised. The ‘Sanitary Policy’ document of British government in 1914 revealed that remarkable improvement was effected in the health of the army in India and in the case of civil population not much was expected. This was attributed to the better nourishment, sanitary conditions, discipline and age of recruitment of army but never doubted their own role in the provision of food for the general population.\textsuperscript{36} The British led a healthier life even as compared to the European Standards. One of the doctors noted that “the European mostly live a healthier life in India and are free of the most of the common diseases of Europe. Except the nobility and the landed gentry of England, no other class in the world is more ‘well to do’ than European Officers and gentlemen in India and generally lead more temperate, regular and moral lives.... Although occassionally attacked with Malarious Fevers and Dysentery, a large proportion of soldiers live very healthy lives in India...” \textsuperscript{37} This suggests that though the British troops suffered during epidemics and had high mortality but those who lived, led a very healthy life. As regards, general population, no such provision for the supply of food and safe water was ever considered important. The ‘sanitary policy’ document stated that, “in the land of ox cart one must not expect the pace of the motor car”. \textsuperscript{38}

The emphasis for expansion of services remained on clinical care and laboratory research and the sanitary activities remained marginalised. There was a 484 increase in the number of civil hospitals in the first three decades of the 20\textsuperscript{th} century. These civil hospitals came up with the help from the local elite.
Despite expansion and involvement in the civil hospitals, the IMS was under the control of military administration. The expansion of provincial services was in the military interest of the British government. It helped retain large army reserves, trained medical men to deal with large population and with a variety of diseases, attracted European doctors to lucrative private practice, and it offered services to other European civil population in the districts.

Medical Care Institutions

Chronologically, the Portuguese were the first ones to open Royal Hospital in Goa in 1510. This was the first time that the modern medicine was introduced in India. It was the French and the British who established hospitals for the care of sick men and consolidated the hold of western medicine in India.

Though the East Indian Company had its own medical men to treat their officers and men in settlements and factories, the help of the local practitioners was also sought. The regular hospitals for the treatment of the sick came up in last decade of the 17th century and early 18th century. The establishment of first hospital in Bombay is reported to be in 1676. The first hospital in Madras came up in 1664 and in Calcutta in 1707.

More hospitals were established in these cities and in military stations in the wake of political conquest. With the coming of more hospitals the workload on the medical officers increased, and they started looking for local help at low cost. The young Indian youth were employed to help the medical men. And these local youth picked up medical knowledge in the course of their hospital duties. The Indian medical assistants were known as ‘native dressers’ in Madras, ‘country doctors’ or ‘black doctors’ in Bengal, and ‘black assistant’ or ‘apothecaries’ in Bombay. These Indian medical assistants were later on known as ‘native doctors’ and were recognised by the government in 1767. The ‘native doctors’ for their promotion and higher pay had to undergo examination conducted by their medical officers. The ‘native doctors’ had proved their utility during various military operations and “the practice of appointing Indian assistants to accompany the troops in the field started from 1767 and became as established convention by the beginning of the nineteenth century”. This utility of Indian medical assistants led to the establishment of ‘Subordinate Military Medical Department’ in June.
1812. And these ‘native doctors’ were termed as third class servants, after the establishment of Subordinate Military Medical Department.

Till such time, the British had paid no attention to the education of the indigenous helpers. It was only in 1813 that the British started to show concern for the medical education of Indians. The Charter of 1813 set aside a sum of Rs.1,00,000 per annum for the education of the native. The aim of such an effort was to provide uniform and proper medical education to those Indians who were keen to become doctors. 44

The Medical Board placed before the government a proposal in 1822 for establishing a novel medical institution where western as well as indigenous science would be taught side by side. The Medical Board was impressed with the antiquity of Sanskrit language and the availability of excellent treatise of ayurvedic medicine in India, and this had resulted in the move to combine the study of both the systems of medicine in the proposed medical institution. 45 The Native Medical institution was established at Calcutta in June 1822 but became operational only in 1824. It started with 20 students. The students had to follow three-year course in the vernacular languages. The translation of the English Medical work into Hindi and Urdu was undertaken with the help of Indian experts. The students were provided a stipend of Rs.8 per month during their education. They were required to serve the army or civil department for 15 years and were to receive a salary of Rs.20 per month with an extra allowance of Rs.5 when on field duty. 46

This institution did not attract many Indian students. The students for this institution were difficult to procure as Indian elite was against the learning of anatomy. The only attraction for the students was the prospects of permanent government employment. Meanwhile language controversy was raised in the official circles. The special committee appointed by Lord Bentick to enquire and report upon the working of the Native Medical Institution. On the language issue the members did not favour the Native Medical Institution. One of the members of the Committee, Alexander Duff of the Scotland’s Free Church said “a knowledge of the English language we consider as a sine qua non, because that language contains within itself the circles of all the sciences and incalculable wealth of printed work and illustrations, circumstances which give it obvious advantage over oriental language in which are only to be found the crudest
elements of science or the most irrational substitutes for it". 47 This institution had a brief existence from 1824 to 1834. The language controversy was one of the reasons for its closure. The other reason was that it encouraged the leaning of Indian systems of medicine side by side, and it failed to provide to the Indians, through Western medical education, an opportunity to witness the 'superiority of race'. 48

This was the time when English had become the official language and the Calcutta Medical College was established in 1835. The establishment of Calcutta Medical College was in line with the increasing demand for medical personnel in the hospitals. Many hospitals were established in the presidency town in the 19th century and some hospitals had already been in existence from the 17th and 18th century.

In the 19th century, the most important and large hospitals existed in the Presidency towns and were staffed by the officers of the IMS. And these hospitals were connected with the medical colleges and the professors of these colleges attended these hospitals as physicians. The professorship of the Medical colleges was most sought after appointment by the medical men. By no means they were paid more than the others, even then the very best people were attracted to such appointments. The professional reputation associated with these posts usually carried large private practice with it. As compared to the Presidency towns, the condition of hospitals in the provinces was not very good. These hospitals were supported or aided by the provincial, district or municipal funds. There were also independent private institutions, connected with public services such as the Railways and the Police. These hospitals appointed medical men, as sub assistant surgeons, who had received their training in the medical schools.

There were hospitals and dispensaries to take care of the 'native' population. These hospitals and dispensaries were in those areas which were often frequented by the Europeans and the settlers required the services for themselves. Slowly as the area of operation expanded, the medical care for those who came in contact with Company's officials became important.
Hospitals in Bombay

With the establishment of first hospital in Bombay in 1676, their number increased to three by 1784. These hospitals came up for the care of regiments and other workers of the East India Company. Between 1680-90, a ship was used for the hospital. A hospital was built in 1733 in Bombay. In 1745-46, a lunatic asylum was added to the back of the hospital. A hospital for sepoys came up in 1769 but was abolished by a government order in 1784 and on its place a plan for Battalion hospital was adopted.

Apart from these regular hospitals, there is a mention of a Leper Hospital that was founded by the Dutch in 1728 at Cochin on the Malabar Coast. A smallpox hospital, probably the first hospital for infectious disease in India, was sanctioned and established in Tellichari in 1789. Tellichari was not in Bombay but was officered from Bombay, though most of the correspondence was conducted through Madras.

There is mention of a native hospital in 1809, which treated about 20 patients every day. The government supported this hospital. The Bombay native dispensary came up in the year 1834. In the second half of the century many hospitals came up in Bombay Presidency, which were supported by the wealthy native gentry.

The Jamsetji Jijibhai Hospital was founded in 1843. It was a hospital for the 'natives' and had an eye dispensary and obstetric wards. The eye dispensary was transferred to Sir Cowasji Jehangir Ophthalmic Hospital that was opened in 1866 and the Bai Mathbai and Petit Obstetric Hospital replaced the obstetric wards. One more hospital came up in 1874 with the contribution of a local rich man, Gokuldas Tejpal and the hospital carried his name.

A hospital for women and children known as Pestanji Hormusji Cama Hospital was founded in 1883 and opened for public in 1886. The total cost of this hospital was borne by the Indian rich businessman whose name it carried. This was the first hospital that was under the charge of women doctors. Dr. Edith Pechey was the first woman physician from England to head this hospital. A new hospital was opened in the same compound in 1890 and was known as Bomanji Edalji Allbless Obstetric Hospital. The
B.E. Allbless made a contribution of Rs.66,000 for this hospital. The same staff looked after this hospital.

Between 1880 and 1890 many obstetric hospitals had come up or obstetric wards were added to the already existing hospitals. These hospitals frequently carried the name of the person who made the contribution for the construction of the additional building for the hospitals. Bai Matlibai Wadia Obstetric Hospital was founded in March 1889 and the site for the hospital and one and a half lakh rupees was contributed by Bai Matlibai. One more hospital, Sir Dinshaw Manekji Petit Hospital for women and Children, was founded in 1890 with a cost of Rs.1,19,351. Both these hospitals were opened to the public in March 1892, and replaced the female wards of the J.J. Hospital.

An ophthalmic institution had come up in March 1823 and this was absorbed into J.J. Hospital in 1845. Another Leper hospital came up at Parel that was completed in June 1891. The foundation for St. George Hospital was laid in 1889 and it was completed in 1892.

Hospitals in Madras

One of the letters written on 10th Nov. 1664 from St. George Madras to the Agent of East Indian Company, Sir Edward Winter makes a mention of the first hospital that came in 1664 for the sick soldiers who were dying without much medical help.58

The second hospital in Madras was built between 1679 and 1688 by the public subscription. This two-storey, large hospital was the property of the Church and vestry. The building for the third hospital was erected in 1692.59

Many more hospitals came up in the 18th century in Madras to cater to sick soldiers. Some of these hospitals were temporary and some of these were destroyed during the course of Anglo-French conflicts. There is a mention of hospital built for the English inhabitants of Madras during 1711-12.60 Some of the hospitals during the 18th century were run in the houses that were bought for the purpose. The war against France in 1743-44 witnessed the establishment of special hospitals for the Royal Navy
at Madras. The Naval hospital came up in 1745 and was in use till 1790. A new naval hospital building was completed in 1808 and was in use till 1831.

The present Madras General Hospital had its origin in 1760. This hospital in Madras received sick from the near by areas. From 1772 onwards, this hospital has been known as Madras General Hospital. In 1842 the Madras Medical Board described the General Hospital as an institution for the reception of the sick, both European and the native, the civil and the military. The building was renovated in the 1859 and occupied in 1861. In 1881, the women and children from the hospital were transferred to a separate building that was hired for the purpose. In the same hospital a block was built for infectious diseases in 1879. Prior to this the patients with infectious diseases were treated in temporary shed or in tents in the compound of the hospital.

In 1895 the western half was handed over to the civil authorities and became part of the Civil General Hospital. The women patients were also transferred to the General Hospital. In 1899 the remaining part of the western side was also transferred to the civil authorities and became a purely civil institution.

The Royal Victoria Caste and Gosha Hospital for women was founded in 1885, under the Presidency of Lady Grant Duff. The patients were admitted to this hospital on 15th Dec. 1885 for the first time. At that time the hospital was run in a temporary quarters. The building for the hospital came up in 1890 with a major contribution from the Raja of Venkatagiri and the Maharaja of Vizianagram. The idea of having a separate hospital for high-class women was conceived by Mary Scharlieb who believed that such hospital would encourage women from the high class to adopt to institutional care.

The idea for the 'native' hospital first came from the Surgeon William Garden who made a suggestion to the Medical Board and to the Nawab of Karnatik about the establishment of hospital for natives at Madras in 1787. The plan was materialised in 1797, when after a great persuasion, Assistant Surgeon John Underwood could get sanction from the Court for this hospital. There is a mention in the records that the Company agreed to pay the cost and maintenance of the hospital. By 1842 only six civil hospitals were set up in the entire presidency outside Madras. The process of setting up of hospitals might have got a push from the fact that the number of graduates
from the medical colleges was in excess to the civil and military demands of the government.\textsuperscript{67} So, these fresh graduates from the medical schools and colleges gave impetus to the extension of hospital work outside Madras.

There is also a mention of the Leper hospital that was completed in 1816, and was known as Madras Government Leper Hospital, and it received lepers of both sexes and of all races.\textsuperscript{68}

A Lunatic Asylum was sanctioned by the Government of Madras in 1793 on the proposal of Assistant Surgeon V. Conolly. The Lunatic Asylum started functioning in 1794.\textsuperscript{69} It remained his property till it was passed on to Surgeon Dalton in 1807, who bought it from him. It was, for long, known as Dalton's Madhouse. It remained the property of Dalton's heirs, being only rented by government, till the new asylum was occupied in 1871.\textsuperscript{70} In 1867 the government of Madras had sanctioned the construction of a new lunatic asylum. In 1892 the criminal lunatics of the Madras Presidency who were kept in jails were transferred to the asylum. Before 1871, small asylums were also opened in Vizagapatam and Trichinopoly to avoid overcrowding. But later on the inmates were transferred to the Madras Asylum.

Hospitals in Calcutta

The first hospital in Calcutta was founded in 1707 for the benefit of soldiers and sailors of the East India Company.\textsuperscript{71} The Company contributed Rs.2000 and the rest was to be raised from subscriptions. The hospital regulations were framed in 1713 according to which all unmarried soldiers were to go to the hospital when ill. Soldiers were to pay four annas, corporals six and sergeants eight.\textsuperscript{72} This hospital was destroyed during the capture of Calcutta in 1756. A temporary hospital came up in 1757. The third hospital came up in the private house that was purchased for the purpose in 1769 and occupied in 1770 after making some additions to the building.

All the three hospitals that were intended to be for the Company's soldiers and sailors admitted other Europeans as well. The third hospital was in existence for many years and was replaced by the new Presidency European Hospital between 1902 and 1908.
The first hospital for the 'native' came up in 1792-93 in Calcutta. The native hospital was to be run with public subscriptions and a special committee was formed for this purpose. This was the only hospital for the native for quite some time. It was in 1825 that two branch dispensaries were opened in connection with the Native Hospital, which, in the later part of the 19th century, was known as Chandni Hospital.

Mayo Native Hospital came up in 1874 in Calcutta with the grant from the Mayo Memorial Fund. A new block was added to the out-patient department with the grant from the Corporation of Calcutta, Bengal Government and a major portion of money came from a Bengali lady and from public subscription. It is interesting to note that the major share of money for building the native hospital came from the local people and the government made annual grants for upkeep of the hospitals.

The civil surgeons established the mofussil hospitals outside Calcutta. The civil surgeon, Keneeth Mackinnon, set up a hospital at Muzaffarpur and Imambada Hospital at Hugli was set up by the civil surgeon Thomas Wise in 1836. In 1853, the Government of Bengal decided to establish dispensaries at Dacca, Patna, Murshidabad and Chittagong and by 1853 the number of such dispensaries rose to 53. These were entirely supported by the Bengal Government.

Calcutta Medical College was established in 1835 and the Calcutta Medical College Hospital came up in 1838 in connection with the medical college. This was meant for clinical instruction to the medical students, and had thirty beds and an out-patient dispensary. For construction of new building for the hospital, a native called Babu Mutty Lal provided a piece of land in the vicinity of the Medical College. New additions were made to the same building - Eden Hospital was added in 1881-82, and the Ezar Hospital in 1887. Shama Charan Laha Eye Hospital was opened in 1891 and Prince of Wales Surgical Block opened in 1911 in the same hospital.

The first lying-in hospital was opened in 1840, with out-patient dispensary and a training class for dais. This institution was absorbed into the Medical College Hospital. Since 1881, this has been known as Eden Hospital and was run in a separate building.
The Campbell Hospital at Sealda was opened in July 1867. It was transferred to Government as the hospital attached to the Campbell Medical School, and this hospital was rebuilt in 1908-10. There was another hospital, Sambhu Nath Pandit Hospital, which came up in 1897. The Government and the Corporation of Calcutta jointly met the cost of this hospital.

Calcutta also had a Lunatic Asylum that was in existence since 1787, and this was meant for the European insane. There is mention of a lunatic hospital for females in a general letter from Bengal dated 6th Nov. 1788.

The hospitals for the general population were established in the chief mofussil town from the beginning of the 19th century, though the military hospitals for soldiers were in existence in many of these towns. A public letter from Calcutta dated 13th Jan. 1804 reported that the benefits of native hospital have been fully realised and that the Governors of the hospital have been directed to communicate with the Civil servants at Dakka, Patna and Murshidabad, and Banares, with a view to open similar hospitals. The Proceedings of the Calcutta Medical Board, of March 1804, note that the Governor General had approved the action of the British inhabitants of Dakka, in instituting a hospital for native there. The hospital at Dakka was known as Mitford hospital, named after the judge of Dakka. The same proceedings suggest that native hospitals should be established other proposed towns as well.

Some of the best-known mofussil hospitals in Bengal were founded in the thirties of the 19th century.

Public Health in British India

The British medical machinery grew in direct association with military and political necessities. With the assumption of control by the Crown in 1857, the largest concentration i.e. one third of the British army force was in India. Death and invalidation from epidemic diseases caused insecurity and anxiety among the European troops in India as well as the British authorities. Frequent outbreaks of cholera, fever, diarrhoea, etc., endangered the health of European population in India - both official and civilian. The British government had resolved to take care of dangers of disease that were more cruel to the British soldiers than the Indian army.
Before we talk about the response of the British authorities to the epidemics and their handling, we would focus on their response to the venereal diseases amongst soldiers.

Handling Venereal Diseases

Very often the authorities expressed their concern that their soldiers might wander beyond the controlled environment of the cantonment and might be contracted with the infectious diseases—venereal diseases in particular. Dr. W. J. Moore, Surgeon General in 1886 had expressed that physiological instincts of soldiers must be satisfied in some or the other way or they must be repressed by force of will aided by severe physical exertion. 87

The Royal Commission Report of 1859 proposed the way for legislation. Venereal disease was described in their report as the scourge of British troops in India. In 1864, a bill was introduced in the Governor General's legislative council to regularise the administration of civil and criminal justice in military cantonments. One of the rules provided that the local governments could make rules for inspecting and controlling the houses of the ill famed for preventing the spread of venereal disease. The bill was passed and became a law in 1864. In this whole exercise no where the British authorities paid attention to changing the behaviour of their soldiers, they rather made conditions for the women much more stringent. The satisfaction of sexual needs of soldiers was considered necessary by the authorities. The onus of preventing the spread of disease was put on the prostitutes, reflecting stereotype attitudes that women were meant to satisfy men, and for the safety of the men it was necessary for women to have certificates of being healthy or free from infection. Regimental brothels or 'lal bazaars' came up with the purpose of facilitating mercenary sex and protecting the soldiers from the infections of venereal diseases. 88 According to the Act of 1864, it became possible to regulate areas beyond cantonment. These regulations divided prostitutes into two classes: the ones, who were frequented by the Europeans and the others who were not. Only first class prostitutes were subjected to regulation; they were to be examined and registered, and printed tickets were issued to them. Prostitutes were subjected to monthly examination and, if found infected, they were detained in the Lock Hospitals. The establishment of lock hospitals for the detention of the prostitutes was a step to ensure
safety of soldiers in India. In these lock hospitals the women were forcibly given Mercury treatment. 89 The lock hospitals admitted soldiers as well as detained women who were found to be having venereal diseases.

The British authorities were of the view that the soldiers came from lower classes and lacked the intellectual and moral resources required for continence; hence special provisions seemed necessary to ensure their satisfaction. However, nothing was said about the British officials who were equally vulnerable to temptation but who were ‘simply’ expected to stay from any involvement with prostitutes. 90 The British officials were expected to behave in this manner in order to uphold the public image of British army and its officials.

There was clear distinction with which the military authorities provided facilities for sexual relations between the British soldiers and prostitutes and the care with which the British authorities tried to discourage such relationship amongst the official elite. The prestige and public image of the ruling class was a matter of serious concern for the imperial rule. 91

The authorities were of the view that if soldiers stayed away from their families for a long period, they were bound to visit prostitutes; and it was the duty of the government to ensure that the soldiers lived in safe and disease free environment. 92 The proposal to keep the families of the soldiers in India was abandoned on the ground that duty would fall on the administration to take care of the families of the soldiers whenever they were away. And moreover, their women might get into bad company in India. 93 There was no attempt to reform prostitutes on the ground that these were hereditary prostitutes.

We look at the report of Lock Hospitals in Punjab that provides the comparison between the number of admissions in two years, i.e., 1887 and 1889. This report was prepared by the government to show the difference in admission rate in 1887 when the Act was in force and in 1889 when voluntary system of examination of women was in force.
In spite of having lock hospitals the venereal diseases were prevalent among the British soldiers on a wide scale and varied between 29 to 40 percent during the 19th century. Some of the lock hospitals were closed in 1830 as it was thought to be wasteful expenditure, but when the venereal disease continued to rise, the lock hospitals were reopened in almost all the important towns.

Table 1.1

Number of Soldiers and Number of Women in Lock Hospitals in Punjab in 1887 and 1889

<table>
<thead>
<tr>
<th>Hospitals</th>
<th>No. of Soldiers admitted during the year</th>
<th>Ratio of No. of women admissions in the hospitals per mille strength</th>
<th>Average No. of women under treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1887</td>
<td>1889</td>
<td>1887</td>
</tr>
<tr>
<td>Delhi</td>
<td>168</td>
<td>133</td>
<td>351.4</td>
</tr>
<tr>
<td>Umbala</td>
<td>429</td>
<td>783</td>
<td>222.8</td>
</tr>
<tr>
<td>Kausauli</td>
<td>92</td>
<td>131</td>
<td>266.5</td>
</tr>
<tr>
<td>Jallander</td>
<td>175</td>
<td>419</td>
<td>202.0</td>
</tr>
<tr>
<td>Dalhousie</td>
<td>215</td>
<td>363</td>
<td>248.2</td>
</tr>
<tr>
<td>Sialkot</td>
<td>246</td>
<td>596</td>
<td>212.8</td>
</tr>
<tr>
<td>Dagshai</td>
<td>229</td>
<td>125</td>
<td>284.8</td>
</tr>
<tr>
<td>Subathu</td>
<td>219</td>
<td>214</td>
<td>452.4</td>
</tr>
<tr>
<td>Ferozpur</td>
<td>373</td>
<td>341</td>
<td>365.6</td>
</tr>
<tr>
<td>Meean Meer</td>
<td>277</td>
<td>654</td>
<td>317.6</td>
</tr>
<tr>
<td>Rawalpindi</td>
<td>554</td>
<td>1318</td>
<td>212.6</td>
</tr>
<tr>
<td>Attock</td>
<td>37</td>
<td>14</td>
<td>330.3</td>
</tr>
<tr>
<td>Murree</td>
<td>72</td>
<td>48</td>
<td>232.2</td>
</tr>
<tr>
<td>Peshawar</td>
<td>381</td>
<td>263</td>
<td>237.0</td>
</tr>
<tr>
<td>Nawasheere</td>
<td>64</td>
<td>89</td>
<td>91.62</td>
</tr>
<tr>
<td>Mooltan</td>
<td>311</td>
<td>469</td>
<td>339.8</td>
</tr>
<tr>
<td>Total</td>
<td>3842</td>
<td>5960</td>
<td>4368.2</td>
</tr>
</tbody>
</table>

The data from the Table 1.1 indicates that the number of soldiers admitted to these hospitals has increased in two years time, so is their ratio, whereas the number of women had reduced after introduction of voluntary system of examination. This point to forced admission of women to the hospitals in 1887. The government blamed the women for the increased number of soldiers admitted to these hospitals in 1889. “It is possible, that the abolition of these measures (Compulsory examination) has enabled a large class to practise prostitution without fear of detection and examination”. 95

These attitudes are pointers to the discriminatory treatment offered to these women. In fact, it would be wrong to brand these legislative regulations as concern for women, as these were not for taking care of health needs of the women but to make sure that the European troops were kept happy and free from disease as far as possible. In the lock hospitals the women were subjected to crude medical treatment by the military surgeons. The conditions in the lock hospitals were very bad and some of them were worse than the jails of the time. 96 In 1868, when the government of Madras decided to appoint trained female nurses in the hospitals, including the lock hospitals, in order to improve the conditions in the hospital, the government and the sanitary commissioner rejected the proposal. They reacted sharply by saying that the trained head nurse was hardly required for the Lock hospital where all women under treatment were ‘native’. 97

The whole focus on prostitutes was for the safety of soldiers in India from venereal diseases. There was hardly any talk about the safety or health of the ‘native’ women. The authorities did not wish to incur any financial cost for improving the health conditions of prostitutes. The lock hospitals were in filthy and degrading conditions.

Handling of Epidemics

The illness and death among European troops and civilian population due to the epidemics haunted the authorities. This had attracted the attention of physicians much before the government adopted any systematic medical policy, 98 and even before the Crown took over the power in 1857. The British medical men had undertaken research on their personal initiatives and with their own finances. 99 The Government concern became evident only after the Royal Commission was appointed in 1859 to enquire into
the sanitary state of the army in India. The Royal Commission estimated that on an average, between 1817-1857, the annual mortality rate among European troops was 69 per thousand of strength, and estimated 84 soldiers per thousand were reported to be constantly in hospital. Of the total number of deaths in the period examined by the commission, only 6% were due to war, and other diseases caused the rest of the deaths. The four major diseases that caused highest mortality were fevers, dysentery and diarrhoea, liver disease and cholera. Fevers accounted for 40% of all the deaths and three fourths of all hospital admissions.

The Royal Commission recorded a death rate of 69 per thousand among British Troops. European troops experienced a cholera mortality of 14/1000 whereas for Indian troops it was 3/1000. This created lot of anxiety in the mind of colonial government and this anxiety lay at the heart of government's attempts to collect information about sickness and death.

The Royal Commission was appointed to look into the sanitary status of the army. It concluded that the diseases occurred among the population that was exposed to certain unhealthy conditions. The initial sanitary reform in the army was in keeping with the prevalent understanding of diseases in England that supported belief in quarantine and environmental control as the main instrument of combating diseases. Based on the principles of metropolitan sanitary science, the Royal commission laid down the norms for development of residential areas like the ‘cantonment’, ‘civil stations’, ‘civil lines’, etc. that were regulated by the legislation and ensured social and physical segregation. This segregation lessened the mortality rates among the Europeans, but there was not much difference in mortality among the Indian troops who lived with their families and the European civil servants (20 per thousand). Whereas, Indian troops living in the barracks died with the same rapidity and with the same diseases as British soldiers. Obviously then, the tropical climate was not that important a factor as thought to be earlier. The only things that safeguarded the soldiers were the improved sanitary conditions along with improved diet, suitable clothing according to the climate.

At the same time, the surrounding areas remained the reservoir of disease and unsanitary conditions. The Royal sanitary commission mentioned that “apart from the question of humanity, the introduction of an efficient system of hygiene in India is of
essential importance to the interests of the Empire". As a result came the Military Cantonment Act XXII of 1864 that instituted sanitary police under the overall charge of the medical officers, and sanctioned the registration of deaths and recording of observations in the interest of public health.

The segregation was an effective tool but desirable improvement could not be brought about in the health of the European troops. The unsanitary conditions in the adjacent areas remained the source of infection and contact with the 'natives' in these unplanned cities could not be avoided. Despite reluctance to interact with the local people, the economic interests and trading opportunities put pressure on the British rule to ensure safety at the Indian ports. European fear of the miasma emanating from the Indian quarters resulted in the construction of walls between European and Indian locations. As it became evident that the 'native' population could be the secondary source of infection it was felt necessary by the authorities that the sanitary measures have to pay attention to the local conditions as well. The Royal Sanitary Commission stressed that cantonment planning should also be extended to 'native lines' in order to ensure health of the Indian troops.

Sanitary movement in England emphasised on investigation into the sanitary measures and investigations into the factors that caused epidemics. In line with the development in England the Government of India appointed its first systematic inquiry into a major epidemic of cholera in 1861.

Cholera played important role in shaping colonial health policy. It gave rise to the powerful spur to sanitary legislation in England - Sanitary Act of 1866. The epidemic resulted in the International sanitary conferences that were to work out acceptable quarantine measures, to systematise existing knowledge about the disease, and to recommend measures for prevention. The first conference that was held in 1866 focused mainly on India.

In the absence of much knowledge about the disease and mode of transmission, the conference concluded that the spread of cholera epidemic was due to the rapid movement of groups of people, and the movement of ships and railways carrying people with the disease across vast distances. In India the movement of pilgrims, and large
gatherings at the fairs and festivals, were the two most powerful of all causes which led to the development and propagation of epidemics of cholera. 106

While the suggestions of the conference—regarding the desirability of sanitary measures—were given effect immediately in case of troops in order to prevent outbreak of epidemic among them, the question of epidemics at pilgrim centres was subjected to different kind of treatment. The response of the government was to prevent pilgrims from entering military stations or their neighbourhood. 107 The rules pertaining to railway travel for troops included provision of good drinking water, and substantial meals at the halting stations and isolation of the troops from the native towns. For the 'native' population the contagion theories of cholera causation and transmission were not applied. It was concluded that cholera was related to the soil, its moisture content and variation in the levels of subsoil water that in was determined by the climate or seasonal variation. While government was doing everything to ensure safe railway journey for the British troops, the railways started providing half rate return tickets for the pilgrimage sites to maximise their profits. The passengers were stuffed into the compartments without proper facilities for ventilation, lighting, drinking water or sanitary arrangements on board. This also increased the numbers of pilgrims in the holy places. Even when cholera had shown signs of disappearance among troops, it continued to rage among the general public. 108

It is interesting to note that the two sets of theories co-existed regarding the spread of cholera, i.e. the water-borne theory and the aerial miasmatic theory. The water borne theory seemed to be making great demands upon the government. On one hand the contagionism of cholera disrupted the international trade, and on the other it asked for investment for sanitising India. So, shelter under the second theory of "aerial miasma" seemed the most appropriate to the colonial government in India. J.M. Cunningham, the sanitary commissioner of India proclaimed that quarantine and sanitary cordons were unsuitable for India, as his convenient belief in the theory of aerial miasma held that air and soil were responsible for cholera.

With the discovery of cholera bacillus by Robert Koch in 1883, the theory of aerial miasma was challenged and yet Koch's findings did not find much favour in India. The Indian medical establishment remained indifferent to bacteriology. Instead it
contended that the new discovery did not throw any light on the origin and prevention of disease.\textsuperscript{109}

Though Cholera appeared in England also but it was treated as a local problem. They proclaimed that India was the permanent home and its soil and climate provided suitable conditions for it to blossom. During 1817-21, the troops in the Indian camps were blamed for cholera outbreak as they, being poor and filthy, were considered the natural carriers of the 'cholera seed'.\textsuperscript{110} In the later years, the belief in the 'pilgrims theory' made it impossible for the British to control or contain the disease. Again the local people and customs were considered the root cause of the disease. This theory got its strength from the aerial miasmic theory that helped British to prove in the International community that quarantine was futile and pointless in India. The entire sanitary matters were made a local matter to be tackled by the provincial governments. From the provincial it became a municipal matter and than a local matter to be tackled by the elected Indian representatives. So during the course of time, Cholera became a 'local' problem to be handled by the 'local people'.\textsuperscript{111}

The cholera set out in motion the sanitary measures through out England, whereas in India there were attempts to indigenize disease, thereby wash their hands off the financial responsibilities to combat disease. Harrison has commented that "In order to maintain its policy of detachment from public health, the government was prepared to go to extraordinary lengths, manipulating the flow of information and theoretical discussion in the official circles...Medical experts were carefully selected and employed to defend the government's position: they effectively defined the limits of medical intervention under British rule, or... provided a rationale for the government's inactivity".\textsuperscript{112}

Not only Cholera epidemic, the encounters with the other diseases also reveal the same kind of attitude among the British authorities. They were very selective in their interventions and only took up those health issues that had direct bearing on the commercial or political interests. And in some cases it was the British commercial interest that gave rise to many of the health problems in India. Colonial labour recruitment policies also had serious health consequences for the workers as well as for the communities from which they were drawn. The insanitary conditions in the mines and
plantations and overcrowding created an environment conducive to the spread of diseases.\textsuperscript{113}

Malaria is another disease that spread with the construction of irrigation canals and railways. Introduction of new irrigation facilities not only provided environment for the spread of disease but also brought about substantial changes in the rural economy that in turn created problem for poor peasant in these areas. Introduction of cash crops led to reduction of staple food that was otherwise consumed by the poor villagers. Famines and deaths due to starvation became common in the northern part of India especially Punjab.\textsuperscript{114} Malaria became much more lethal for the poorer sections of society due to starvation among the poor masses. Introduction of railways also facilitated outflow of agricultural products for economic reasons, which otherwise were consumed locally. The people were forced to sell their agricultural produces outside, as they had to pay taxes to the government. So it became a vicious circle. In the late 19\textsuperscript{th} century, the recurrent epidemics and famines were threatening people as well as the state revenues. At the same time indigenous labour was of critical importance to the realisation of wealth from the colonies. So, some degree of medical intervention as well as famine control was in the colonial interests.

Smallpox was a part of the religious belief and rituals, with its deity Sitala being worshiped throughout India. Much before the British arrived in India, the inoculation with smallpox matter or variolation was practised by a section of Brahmins. They were known as Tikadors or mark-makers. These Brahmin inoculators were paid by the people for their service, and usually each tikadar had a cluster of villages with which they had long standing relations.\textsuperscript{115}

The British introduced Jennerian vaccination in India in 1802 and they regarded smallpox as a preventable disease.\textsuperscript{116} The practice of vaccination was slow to gain acceptance in India.

British residents in India had feared smallpox and many of them had some recourse to variolation before 1800. They also fled ‘in terror’ from their homes until epidemic had passed.\textsuperscript{117} In 1849-50 smallpox epidemic in Calcutta affected about 76 Europeans and most of the victims were ‘poor Europeans’, especially soldiers and
sailors. The rich Europeans were protected from disease not by the vaccination alone, but also by spaciousness of their houses and by absence of close contact with Indians.

After adoption of vaccination in 1802, Europeans became less vulnerable to smallpox except in the case of severe epidemics as in 1850. In November 1802, Dr. William Russell, Superintendent-General of vaccination was entrusted with the duty of preserving constant supply of vaccine for vaccinating children and for instructing Indian doctors who might wish to practise vaccination. All European children in Calcutta and neighbourhood were vaccinated and operation was extended to other civil and military stations. Dr. Russell was succeeded by Dr. Shoobred in 1803, who tried to convert many tikadars into vaccinators. In 1805, Brahmin inoculators were offered pension for life on the condition of their having relinquished the practice of variolation for that of cowpox vaccination in Calcutta and its vicinity. The Indians were reluctant to submit to vaccination or to adopt the practice for themselves. Some of them, as in Madras suspected government of a 'sinister intentions', gathered in crowd to drive away the vaccinators. Duncan Stewart, Superintendent-General of vaccination in 1840 blamed Hindu ingratitude and ignorance. Such sentiments persisted well into the second half of the 19th century. For example, in 1878, the Sanitary Commissioner of the North-Western Province attributed the limited impact of vaccination to the "natural apathy of the people, their disinclination to accept a new thing, and their unreasonable religious beliefs and caste prejudices".

The British did not give thought to the need for permanent vaccination agency in India. They assumed that once the practice became popular the Indians would take up upon themselves the responsibility at the minimal cost to the state. The Government of India had cautioned over the expenditure on vaccination, and again in 1811, the Government urged reduction as soon as the practice became genial among the Indian population. In 1829 the Government of Bengal had decided to reduce the number of vaccination centres in the wake of the expenses that government had to bear.

The vaccination had encountered opposition in Britain as well. Yet, only Indian religious and social practices were singled out for blame. The cultural resistance was responsible for slow progress of vaccination in India, but this was only one of the
inhibiting factors. There were other technical and financial difficulties that stood in the way of effective implementation of vaccination. For example, Cowpox was not available in India, and until 1890s it was imported from Britain. The vaccine was often 'lost' in the process of carrying it to other places during wet and humid weather. The scale of operation in India remained limited as long as it was relied on imported vaccine. In Bombay, there were only 446,000 vaccinations between 1846-1850, and 849,000 vaccination between 1851-1855. There were also attempts to shift large share of the financial burden on to the newly created municipal and local boards, but Indian councillors were unenthusiastic about diverting fund to the unpopular cause.

Vaccination was disliked for other reasons as well. It was performed on children under the age of one year. The mild reaction produced by the vaccination was taken as a virtue by the British, whereas, Indian people took it for ineffectiveness of vaccination. The tikadars had earned money from the villager, whereas people were reluctant to pay for the services (Vaccination) that they did not want. In fact, a number of ex-tikadars had reverted to their formal calling. 127

The slow progress of vaccination, at high level of smallpox mortality and, the persistence of variolation put pressure for legislative action. A ban was imposed on variolation in 1804, soon it was abounded in wake of its ineffectiveness. Lord Dalhousie had also declared that it was impossible to prohibit variolation. In 1872, a draft vaccination bill prepared by the Bombay Government was opposed by Sir John Strachey of the Viceroy's Council on the grounds that any attempt to impose vaccination by force would provoke resistance and make it more unpopular.

In 1865 variolation was banned in Calcutta and in 1866 prohibition was extended to other areas as well. In 1877, the Government of Bombay also finally passed its own Vaccination Act. This made vaccination compulsory for all infants under six months old. The decline in number of deaths due to smallpox in Bombay and Karachi following the introduction of compulsory vaccination provided argument for further extension of legal measures.

To some extent the problems vaccination encountered in Indian mirrored European experience, but in many respects history of smallpox and vaccination point to
the cultural and political remoteness of the administration to the lives of the people.\textsuperscript{128} There was ambivalence in British attitudes as well. "Vaccination was welcomed as a demonstration of the superiority of the west over east, science over superstition. And yet, from the abiding sense of political insecurity, heightened by the mutiny and Rebellion of 1857-8 ... the State shied away from the vaccination programme that might provoke resistance and revolt".\textsuperscript{129}

The handling of other epidemics by the British also showed that they were very confident of western medicine and believed that it was acting in the best interests of the people. They were very proud of their scientific understanding and mocked at the local practices as fatalism, superstitious and barbarity of indigenous response to disease.\textsuperscript{130}

\textbf{Plague} epidemic in 1896-97 revealed the crisis of confidence of western medicine and primacy of British economic interests. Plague was hardly known in India. It came to Bombay in 1896 via Hong Kong. British commercial interests forced the government to seek the solutions to combat plague epidemic effectively. The government feared the epidemic would wreck its flourishing international and internal trade and commerce. There was also international pressure for closing of ports to passengers and cargo from India. Bombay soon saw an influx of 'foreign' investigative missions, and the European powers, insisted on calling an International Sanitary Conference. \textquoteleft At the conference the French, sometimes adopted a devastatingly 'ironical tone', took every opportunity to belabour the British rulers of the home of cholera, and now rulers of one of the epicentres of plague\textquoteright.\textsuperscript{131} The outbreak of plague had provided other colonial powers with the opportunity for a showdown in the imperial power game, opines Catanach.

In 1896, very little was known about aetiology or treatment of plague. By early 1897 Surgeon General, James Cleghorn, DG of IMS asserted that Plague was only slightly contagious or infectious and that its incidence was greatly due to local conditions,\textsuperscript{132} and a number of Bombay's leading allopathic practitioners were brought to endorse the statement made by DG, IMS. Soon the plague mortality figures began to rise and this was the time when international community talked of closing their ports.
The British wanted to confine plague. An official notification from the Bombay government entrusted the municipal commissioner of Bombay the power to enforce segregation and hospitalisation of suspected plague cases. Fear psychosis about plague crossing the boundaries of Bombay led to the passing of Epidemic Disease Act in February 1897. This act was applicable to all of India and authorised the official to inspect any ship or intended passengers and to detain and segregate plague suspects, to destroy infected property, disinfect, evacuate, or demolish any dwelling suspected of harbouring plague. To make the execution of measure more stringent, Dr. J.A. Lowson, of colonial medical service with experience of plague operation was appointed as plague commissioner of Bombay.

The forced segregation had a lot of opposition from the local people, especially the examination of women and their removal to segregation camps and hospitals was opposed greatly. Chairman of Calcutta Corporation N. Mukerjee, warned that "people would prefer to die of plague rather than consent or submit to the removal of their mothers, wives, daughters or sisters to hospitals". Moreover, the physical examination of railway passengers attracted criticism from the public. The use of troops to look for plague suspects reported ‘manhandling’ by them.

All this proved disastrous as the repressive measure resulted in anti plague riots between 1896-1900. In one such riot the chairman of the Plague Committee of Poona was assassinated. It is significant that on one hand the government was talking about special services for women by the trained women doctors as Indian women did not like to attended by the male doctors, and on the other hand the same government forced physical examination of women suspected of plague especially by the medical men. The army was made use of to carry out operations.

The patients' attendance in the government hospitals also declined. So insecure was the colonial government that it sanctioned the employment of vaid's and hakeems for the supervision of public and private hospital camps. The desperate attempt to conquer Plague resulted in calling in Haffikine inspite of political doubts. The failure of the government to effectively tackle Plague epidemic and subsequent use of Haffkine's vaccine (that failed), and setting of a commission on plague were moves to bail out government from a difficult situation.
Interests of Medical Men in the Health Services

For the British doctors, at the individual practitioners' level, other than serving the empire, the personal motivation also played a key role. Both in Britain and in India, the professional interest, competition and accumulation of wealth were key factors in the working of the male medical professionals. These men often shaped the services and also official attitudes towards the local population.

The status of medical men in Britain depended upon the kind of medical institution they were associated with. Medical men employed under Poor Law had a much inferior status than those of consultants in Voluntary Hospital or those who attended the hospitals attached to the medical colleges. The hierarchy within the medical club was very important and played a crucial role in the development of medical services.

IMS provided better prospects for medical doctors compared to Britain. An IMS doctor wrote in the British Medical Journal about the deteriorating conditions for doctors in Britain and calculated that the average income of the medical practitioner at home was £190 a year, which was quite low as compared to the salary of the officers of IMS.135 The British medical men preferred IMS even though it meant "work (where) man earns his living by the sweat of his brow...(though) it involves a long residence... "exile" in India, but exile tempered by a liberal allowances of fairly paid furlough".136

IMS also provided scope for experimentation. Edward Hare, in 1847-50 introduced the practice of giving quinine in fevers. Henry Vandyke Carter, after joining IMS worked out the origin and development of the disease known as famine fever. He also did quite important work on leprosy. His experience in India, after his retirement in 1888, earned him an appointment as Honorary Surgeon to the Queen in Nov. 1890. Lieut. Colonel Roger of IMS did some work on Cholera, dysentery and Liver abscess. In 1905 he was elected a Fellow of the Royal College of Physician.

It is obvious that opportunities were better in India for the medical men. And they had a comparatively free hand to experiment with new skills and medicines. At individual
level, the medical men improved their knowledge and skills and for the British
government their presence in Indian was absolutely necessary for military reasons.

IMS remained a captive under the army in India, but with the expansion of
services, the professional associations and Indians raised the demand for civil medical
service in the legislative Assembly. The representatives argued that the civil and
independent medical professionals should replace the IMS posted in the civil positions
and their salary should be the same as provided to the IMS men. As high as 62% of the
civil positions were occupied by the IMS officers and the professional associations had
objected to this. In 1936, it was again pointed out at the Council of State that increasing
the number of local doctors was not enough; the prescribed ratio of one Indian to two
British doctors had to change. But the delaying tactics kept it pending till 1938 and the
rights of the IMS officers were protected.

What we see here is that the British health policy was not guided by the
principles of modern science and medicine alone that evolved in Britain. There were
military and political compulsions that guided the development of these services in India.
The expansion and Indianisation was more for retaining political control and reducing the
cost of services rather than for meeting the needs of the general population. The state
encouraged the establishment of voluntary and charitable institutions with the
contribution from the local elite to cut down state costs. For male medical professionals,
the services provided opportunity for self promotion- both professional and economic.

DISEASE STATISTICS IN 19TH CENTURY INDIA

To what extent were the imperial policies and professional initiatives based on
the available data is a question worth asking. In 1869, sanitary commissioners were
appointed in each presidency. They were responsible for collecting data on the disease,
mortality, deaths and births in different section of the society. This data was incorporated
in the annual reports to guide the government on the health-related issues. Major
portions of the sanitary commission reports were devoted to disease statistics on and
about European population in India- both military and civilian. A section talked about the
health statistics in jails and asylums and other institutions. One section in the end talked
about the health of the general population. The coverage of the general population was
not complete due to the vastness of the area, but it did have important information about deaths and their causes in different provinces.

The Sanitary Commission Reports and the memorandum of the Army Sanitary commission on these reports between 1871 and 1905 have been reviewed for the present research. These reports mention about the diseases among the general population, but the importance of this data has been undermined by adding that it was insufficient to draw conclusions. Despite their incomplete coverage, the reports did point to the pattern of disease in the 'native' population. As regards the statistics about general population the Sanitary Commission Report of 1871 stated that, "It is sufficient for the present to place these figures on record. I shall not attempt any further analysis of them... as regards the relative mortality ascribed to the different causes in various parts of India, or enter into any detail with the view to compare the death rate according to age and sex, or to show how it affected the several classes of people. These are matters of much interest, to which attention may soon... be directed with advantage but system of registration is still in its infancy..." (emphasis added). 139 As regards mortality registration, the sanitary commissioner remarked, "There is still much to be done to render the registration accurate, but already, imperfect as it is, it affords very valuable information regarding the comparative prevalence of different epidemics in different parts of the country" (emphasis added). 140

We take data from these reports of the Sanitary Commission and the reports of the Army Sanitary Commission to see:

i. What mortality data from general population has been reported?

ii. Was this data sufficient to draw conclusions about mortality pattern in the general population? Did it indicate some trends?
Table 1.2.
Total Epidemic Mortality for Indian Population between 1879-1888

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Registered Population</th>
<th>Total Registered deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cholera</td>
</tr>
<tr>
<td>1879</td>
<td>187,045,833</td>
<td>270,522 (1.44)</td>
</tr>
<tr>
<td>1882</td>
<td>198,341,860</td>
<td>347,932 (1.75)</td>
</tr>
<tr>
<td>1885</td>
<td>197,585,350</td>
<td>385,928 (1.95)</td>
</tr>
<tr>
<td>1888</td>
<td>163,005,230 (does not include central India)</td>
<td>269,862 (1.65)#</td>
</tr>
</tbody>
</table>


Note: ~ Population calculated from the reports of the different provinces; # percentage calculated from the number of deaths given in the reports; † Percentage given in the report of the Army Sanitary Commission
<table>
<thead>
<tr>
<th>Year</th>
<th>Total Deaths (ratio per 1000)</th>
<th>Cholera (%)</th>
<th>Smallpox (%)</th>
<th>Fevers (%)</th>
<th>Bowel Complaint (%)</th>
<th>Injuries (%)</th>
<th>Other causes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1871</td>
<td>444,371 (18.0)</td>
<td>17.656 (3.97)</td>
<td>20.823 (4.68)</td>
<td>192.469 (43.31)</td>
<td>38.928 (8.76)</td>
<td>15.323 (3.44)</td>
<td>159.172 (35.81)</td>
</tr>
<tr>
<td>1872</td>
<td>501,482 (16.6)</td>
<td>13.247 (2.66)</td>
<td>39.074 (7.74)</td>
<td>214.148 (42.70)</td>
<td>39.337 (7.85)</td>
<td>15.150 (3.02)</td>
<td>180.476 (35.98)</td>
</tr>
<tr>
<td>1873</td>
<td>506,894 (16.4)</td>
<td>840 (0.16)</td>
<td>51.784 (10.21)</td>
<td>222.843 (43.96)</td>
<td>36.392 (7.17)</td>
<td>14.251 (2.81)</td>
<td>180.784 (35.66)</td>
</tr>
<tr>
<td>1874</td>
<td>516,848 (17.6)</td>
<td>313 (0.06)</td>
<td>48.343 (9.35)</td>
<td>226.220 (43.76)</td>
<td>37.993 (7.35)</td>
<td>13.065 (2.52)</td>
<td>190.914 (36.93)</td>
</tr>
<tr>
<td>1875</td>
<td>641,266 (21.1)</td>
<td>94.546 (14.76)</td>
<td>24.775 (3.86)</td>
<td>252.042 (39.30)</td>
<td>37.484 (5.84)</td>
<td>12.421 (1.93)</td>
<td>219.992 (34.30)</td>
</tr>
<tr>
<td>1876</td>
<td>680,384 (23.3)</td>
<td>148.193 (21.78)</td>
<td>23.469 (3.44)</td>
<td>230.092 (33.81)</td>
<td>38.176 (5.61)</td>
<td>11.175 (1.64)</td>
<td>229.279 (34.30)</td>
</tr>
<tr>
<td>1877</td>
<td>1,556,312 (53.2)</td>
<td>357.430 (22.96)</td>
<td>88.321 (5.67)</td>
<td>469.241 (30.15)</td>
<td>133.366 (8.56)</td>
<td>16.460 (1.05)</td>
<td>491.494 (31.77)</td>
</tr>
<tr>
<td>1878</td>
<td>810,921 (27.6)</td>
<td>47.167 (5.81)</td>
<td>56.360 (6.95)</td>
<td>374.443 (46.17)</td>
<td>48.083 (5.92)</td>
<td>15.007 (1.85)</td>
<td>269.861 (33.27)</td>
</tr>
<tr>
<td>1879</td>
<td>549,390 (18.9)</td>
<td>13.296 (2.42)</td>
<td>17.840 (3.24)</td>
<td>285.477 (51.96)</td>
<td>23.218 (4.22)</td>
<td>12.619 (2.99)</td>
<td>196.940 (36.44)</td>
</tr>
<tr>
<td>1880</td>
<td>597,015 (15.7)</td>
<td>613 (0.13)</td>
<td>14.529 (3.19)</td>
<td>209.940 (46.23)</td>
<td>19.622 (4.32)</td>
<td>10.845 (2.38)</td>
<td>198.940 (43.77)</td>
</tr>
<tr>
<td>1881</td>
<td>465,682 (16.2)</td>
<td>9.446 (2.62)</td>
<td>15.776 (3.38)</td>
<td>203.542 (43.70)</td>
<td>18.961 (4.07)</td>
<td>11.527 (2.47)</td>
<td>206.430 (44.32)</td>
</tr>
<tr>
<td>1882</td>
<td>470,700 (16.2)</td>
<td>23.604 (5.01)</td>
<td>20.159 (4.28)</td>
<td>188.561 (40.65)</td>
<td>19.958 (4.24)</td>
<td>11.611 (2.46)</td>
<td>206.807 (43.93)</td>
</tr>
<tr>
<td>1883</td>
<td>541,930 (19.0)</td>
<td>36.284 (6.60)</td>
<td>37.975 (7.00)</td>
<td>203.786 (37.60)</td>
<td>22.098 (4.07)</td>
<td>11.509 (2.12)</td>
<td>230.278 (39.57)</td>
</tr>
<tr>
<td>1884</td>
<td>650,335 (23.1)</td>
<td>75.476 (11.60)</td>
<td>61.247 (9.41)</td>
<td>215.977 (33.21)</td>
<td>28.775 (4.42)</td>
<td>11.502 (1.76)</td>
<td>257.358 (39.57)</td>
</tr>
<tr>
<td>1885</td>
<td>615,449 (21.8)</td>
<td>58.109 (9.44)</td>
<td>34.726 (5.64)</td>
<td>218.786 (35.54)</td>
<td>31.209 (5.07)</td>
<td>11.659 (1.89)</td>
<td>260.960 (42.40)</td>
</tr>
</tbody>
</table>

Table 1.3. Number of Deaths Registered Under the Principal Causes of Mortality in Madras 1871-88.
Table 1.2 shows that over a period of ten years, i.e., between 1879-88, there was not any significant reduction in the death rates. Cholera mortality remained somewhat constant, smallpox registered a very slight decline, fever mortality also remained constant and there was an increase in the total death rate.

Table 1.3 indicates that the death rates do not show any significant decline over 18 years in Madras. In fact mortality due to cholera indicates an increase, overall death rate has also increased and so is the mortality due to other causes. This table also indicates that death rate among the Indian population in Madras had remained around 20 with the exception for the year 1877 when it was 53.2. The fevers, by and large, had been the major cause of mortality; cholera deaths indicate epidemic in the years 1876-77.

The table 1.2 and 1.3 indicate that mortality in general population has not shown any significant decline. The same diseases have registered significant declines in European population in India. The annual reports of the sanitary commission did carry this important information about mortality, but, the importance of this hard data was dismissed by saying that, "a registration ... which embraces 4 ½ % of the population and 2 ½ % of the area of the province, must for practical sanitary purpose be most incomplete...". The registration of deaths was confined to those areas (urban) where a special agency was appointed for the purpose and where medical services existed. We would like to argue that if recorded data coming from 2 ½ % of area —largely urban— shows no change, then the rest of the country (specially villages) could be no better, and this fact in itself is very critical.
Over the years, registration of deaths and births improved, even then mortality data did not show any significant improvement. Table 1.3 shows that between 1871 and 1888 there was not much change in the mortality pattern. In fact, total mortality rate increased.

In fact, the memorandum of the Army Sanitary Commission on the report of Sanitary Commission with Government of India in 1888 had also pointed out that sanitary work in India should not be confined to towns, it should also be carried out in the villages as well. It stated, "...the kind of sanitary work being done to cope up with this epidemic mortality, and we have shown that, such as it is, it is almost entirely confined to municipal towns, including only a mere fraction of the population.... Without real organized or effective sanitary order or administration, it is from these villages that the enormous losses from endemic and epidemic diseases are reported" (emphasis added). This report also pointed out that millions of Indian people are left without benefits of any kind of the government initiatives. It stated, "at all military stations sanitary improvement have been in progress for many years and that their advances has been marked by a continuous reduction in the disease and death rates, including those from cholera and fever, both among European and native troops, and that there has also been large reduction in deaths rates, especially from cholera and fevers has been remarkable...But in giving these satisfactory examples of really effective work done, we must also state that the benefits have been extended to scarcely to a million and a half of the vast population of India" (emphasis added).

Having made such an important observation, the sanitary work remained confined to military areas. Even in the handling of epidemics, such as plague in 1896, the general population remained the target of discriminatory policies of the British rule.

The authorities refused to accept that death rate in general population was very high. Sanitary commissioner, in his report in 1905, remarked "Vital statistics have recently attracted a good deal of public attention on account of the discussion in the press on two topics of general interest. In England the decline of Birth rate has been subject of numerous articles, and in India attention was aroused by statement that progressive increase in registered death rate was a proof of the impoverishment of the mass of the Indian people". He further commented "It has become a proverb that
everything may be proved by statistics, but this is really only other way of saying that they must be used with care. Vital statistics, unfortunately, present peculiar difficulties on account of the large number of special circumstances which must be taken into account before a conclusion can be drawn from them...Indian vital statistics present special difficulties... We have to depend upon the census population, because the registered returns are too inaccurate to allow calculations of intercensal population, with the result that as the decennium advances rates become unduly high...” (emphasis added). 145

British authorities made sympathetic noises about high mortality in general population, and provided mortality figures in the annual reports but hardly did anything to improve their condition. Rather than facing the challenge, they chose to hide behind poor statistics.

For the general population, sex-wise death rates were given in the reports of the provinces but data was not compiled in the annual reports so as to be able to draw conclusions. The annual report of the sanitary commission for the year 1875 said, “In every province the mortality among males exceeded that among females”. 146

<p>| Table 1.4 |
| Deaths Rates in different provinces for the year 1875 |</p>
<table>
<thead>
<tr>
<th>Province</th>
<th>Male</th>
<th>Female</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bengal proper</td>
<td>26.82</td>
<td>22.68</td>
<td>24.80</td>
</tr>
<tr>
<td>Northwest Prov.</td>
<td>22.62</td>
<td>25.46</td>
<td>21.82</td>
</tr>
<tr>
<td>Punjab</td>
<td>25.68</td>
<td>25.46</td>
<td>25.57</td>
</tr>
<tr>
<td>Central Province</td>
<td>27.97</td>
<td>24.62</td>
<td>26.32</td>
</tr>
<tr>
<td>Madras</td>
<td>22.1</td>
<td>20.2</td>
<td>21.1</td>
</tr>
<tr>
<td>Bombay</td>
<td>23.54</td>
<td>22.72</td>
<td>23.15</td>
</tr>
</tbody>
</table>

The data in table 1.4 shows the difference between male and female death rates in different provinces, but it does not indicate disease-wise distribution. Report on the Sanitary measures in India for the year 1888, compiled in the India Office has given total number of deaths registered for male and female for three major diseases for 1888 (Table-1.3). It indicates that almost half of the deaths were amongst women. For example, as mentioned in Table-1.3, in 1888, out of the 58,677 registered deaths from cholera 30,397 (51.80%) male, 28,280 (48.20%) females. Of the 204,561 fever deaths, 106,802 (52.21%) were males and 97,687 (47.79%) female. Of the 27,721 bowel complaints deaths, 14,687 (52.98%) were among males and 13,034 (47.02%) among females. This is significant for us as we look at maternal mortality data in Chapter IV.

It is clear that data from the Sanitary Commission Reports indicates that death rates in general population did not show any significant decline in the 19th and early 20th century. An interesting thing that comes out of these reports is that while the authorities were concerned about the death rate in the European population, the birth rates were the main concern for general population. Sanitary Commissioner's report for the year 1885 referred to birth-rate for each province and stressed that in all provinces, except Bengal, the birth rate exceeded death rate. For Bombay, it reported steady increase in births since 1875 except for those years when it was affected by famines, i.e., 1877-79. At the turn of the century in 1900, the sanitary commission report provided an interesting analysis about the high death rate among the general population. The report tries to ignore the fact that death rate was high among the native population. It stated, "If we take nine provincial areas under registration in British India, we find a net increase during the last decade of 7,641,893; had the natural increase followed in the same proportion as in 1881-1899, the number would have risen to 20,271,548; that is to say, there are over 12 ½ million less than under ordinary conditions might have been expected". The authorities rationalised that, "...it is altogether fallacious to take this figure as the measure of the direct loss due to excess mortality. Account must be taken of the effect of migration and of the lessened fecundity, due to famine and scarcity, on the birth rate, that is to say, we have to distinguish between loss from the excess mortality and diminished source of supply..." (emphasis added). The report further rationalised that "a study of the available data, read in the light of this knowledge, would appear to indicate that under the stress of famine and pestilence there were at least some five million fewer children born than might be expected under ordinary
The authorities attributed loss among general population to 'period of enforced celibacy and physiological rest'. The report conveniently concluded that, "the estimated loss is, to a large extent, not to be attributed to excess mortality, and it may be added that the period of enforced celibacy and physiological rest will have its reaction on the return of normal conditions; fecundity will be increased and in this sense a considerable part of 'loss' is in the nature of a deferred interest or increment which will appear in account. The birth rate may be expected to rise by one fourth or one fifth on the normal in the year following restoration and to a smaller extent in the subsequent year, and this will probably mean an addit (addition) of some 3 millions to the population in British territory" (emphasis added).151

The British authorities came up with scientific explanations to blame the local people for their suffering. The scientific explanations distorted data in the reports and blamed the local people for their suffering. An interesting explanation had been given for malnourishment among the 'native' population in its report of 1900. It stated that, "the large majority of people are at a great disadvantage in the struggle on account of deficient nourishment on which power of 'resistance' so largely depend, yet it may be asserted that the physiological value of the food ratio they usually obtain is ample to sustain the measure of health which depend on a sufficient supply of nourishment".152

The reports point out that famines had a negative impact on general population, but never admitted that lack of food was one of the reasons for people's suffering. By doing so the British administration absolved itself of the responsibility towards the 'native' population.

CONCLUSION

The pattern of growth of medical care and the handling of epidemics and the management of public health indicates that the British health concerns were subservient to the needs of the empire. The British medical policy in India was in accordance with the military and political necessities. They made use of the indigenous medicine and its practitioners before western medicine was established in India. Then western medicine was used as an instrument to establish their superiority. There were moves away from
the medical pluralism and western medicine had the patronage of the state. A disproportionate level of confidence in the efficacy and superiority of western medicine was evident in their dealing with epidemics. Blaming local people and climate for their failure in combating disease was the standard official explanation.

The disease statistics incorporated in the sanitary commission reports was ignored, on the grounds that it did not cover the whole population. Even when mortality data was not complete it did indicate trends which could have been useful for working out strategies to combat disease in Indian population. The disease statistics in general population was selectively used to initiate measures to combat disease and suffering.

The health services evolved keeping in mind the health needs and safety of European population in India. Added to this was the trade and economic interests that shaped the services in the 19th century. International pressure for safety of ports and goods was another reason that forced the British to initiate sanitary measures. The establishment of hospitals and dispensaries and sanitary work in the 19th century was primarily meant for the needs of the selected sections in the society, the European population and a fraction of the local population. These services were concentrated mostly in the urban areas.

Building of provincial infrastructures was closely linked to protecting international trade, as in the case of cholera and plague epidemics; granting concessions to agricultural taxes was linked to generation of revenue, as in the case of famines control; and efforts to control epidemics was linked to avoiding international criticism and to its own political interests in India. The developments in the field of medicine and public health were therefore incorporated very selectively in India compared to Britain where the sanitary reforms were introduced with effective legislative measures.

It is within this overall milieu that health services for women developed in India. It would be important to keep these larger co-ordinators in mind while we explore the details of evolution of maternal care services in the 19th century.
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33. Ramasubban, n. 30 above; Arnold, n.3 above, Harrison, n.11above.
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