INTRODUCTION

Epidemics of fevers, smallpox, cholera and the plague have afflicted societies intermittently with the force of a natural disaster, killing a large number of people. Epidemics entail not only the problem of mortality, but also of the collapse of administrative structures, exodus from the cities and breakdown of trade and agriculture. As the biggest scourges in history, epidemics have also shaped the world around, influencing theological, political and social thought over time. The exceptionally stressful situation created by epidemics in recent centuries has reshaped medical assumptions and attitudes. Gradually, public health and sanitation emerged as the responsibilities of the modern state and society. Epidemics also presented dilemmas peculiar to the colonial situation and the colonial state felt obliged to explain and combat them. However, the degree of its involvement and the methods used were determined by its priorities, which, as was to be expected, were economic gain backed by political and administrative control. The chapter introduces the present study with reference to its historical and historiographical context and conceptual framework.

It may be appropriate to begin with an overview of the major epidemics in the world context. In the mid-fourteenth century, the pandemic of the plague later known as the Black Death originated in Central Asia and China and spread rapidly through Europe, causing diminution of population, social dislocation and struck a shattering blow to the economic and social framework.1 The major

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fever epidemic broke out in Britain in the middle of the nineteenth century and spread to Europe, resulting in the rejection of the old forms of medical authority. It also caused a change in the ideologies whereby aristocratic patronage started losing its importance.  

The cholera pandemic is believed to have originated in India in 1830-31 and spread to Africa, Europe and North America. The estimated death rate varied from fifteen to twenty percent, leading to unprecedented social tensions, popular unrest and economic dislocation.

Turning to the Indian subcontinent, the contemporary accounts contain stray references to fevers and epidemics pertaining to the north-western India. Gulbadan Begum refers to a malignant fever that broke out in Quetta during the early sixteenth century, affecting both the common people and the royalty, including Shahr Banu Begum, the third daughter of Umar Shaikh Mirza. Manucci travelling in the reign of Aurangzeb notices that the most common complaint in India was fever accompanied by inflammation in the legs. Alexander Burnes notices its prevalence between one-third and one-half of the population in a matter of months. The term 'Black Death' is said to have come into currency in the early nineteenth century. The New Oxford Dictionary of English, First Indian Edition, 2000, p 182.


in Peshawar during the early nineteenth century. Hugel mentions that during his journey to Kashmir, hardly a day passed in which a case of fever did not occur among the people accompanying him.

The stray references to smallpox suggest that probably it too was widely prevalent and also a recurrent phenomenon in the region. The principal shrines dedicated to the goddess of smallpox (Sitala) were scattered at seven places in the Punjab. The descriptions of ‘pock-marked’ persons in the judicial documents from the seventeenth to the early nineteenth century also point to the recurrence of the disease. The judicial documents too suggest that the cases of smallpox occurring amongst people in the villages were greater. Occasionally, however, smallpox broke out in

venereal diseases in India were not very common. He even says that gout, catarrhs, stone and quartan-agues were unknown.

9 See in particular J.S. Grewal, *In the By-Lanes of History: Some Persian Documents from a Punjab Town*, Indian Institute of Advanced Study, Simla, 1975, pp 175-78, 182-84. In a sale deed of 1748, the two mortgagers, Gur Sahai and Karam Chand have ‘pock-marked’ faces. In 1752, another document has the description of a mortgager, Godaria who also bore pock-marks. Writing about smallpox in Bengal in 1767, Holwell, notices that the epidemic occurred every seventh year without any exception. Ishrat Alam, ‘Smallpox and its Treatment in Pre-Modern India,’ in *Disease and Medicine in India: A Historical Overview*, ed. Deepak Kumar, Tulika Books, New Delhi, 2001, p 87.
10 J.S. Grewal, *In the By-Lanes of History: Some Persian Documents from a Punjab Town*, pp 177. For cases of smallpox occurring in people in the villages
epidemic form in urban centres as in Delhi in 1842, 1846 and 1849.\textsuperscript{11}

Cholera engulfed villages in the Punjab, Kabul and Herat in 1827.\textsuperscript{12} According to Masson’s travel account, the cholera epidemic broke out in Peshawar in the 1830s and spread to Amritsar, Lahore and other parts.\textsuperscript{13} The Punjab, Sindh and Persia were again affected by cholera epidemic in 1845.\textsuperscript{14} The disease in its epidemic form had affected some other parts of the subcontinent from 1826 to 1834.\textsuperscript{15} Starting in lower Bengal, in the

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\textsuperscript{11} O P. Jaggi, History of Science, Philosophy and Culture in Indian Civilization, Medicine in India: Modern Period, Volume IX Part 1, Oxford University Press, New Delhi, 2000, p 144.

\textsuperscript{12} Dhrub Kumar Singh, ‘Clouds of Cholera and Clouds Around Cholera, 1817-1870, in Disease and Medicine in India: A Historical Overview, ed. Deepak Kumar, p 147.


\textsuperscript{14} O P. Jaggi, History of Science, Philosophy and Culture in Indian Civilization, Volume IX Part I, p 110.

\textsuperscript{15} Ibid., p108. Earlier, a major epidemic is mentioned in the report by Dr Tytler, Civil Surgeon of Jessore who reports its occurrence in 1817 in Jessore and its spread to Delhi, Bareilley Allahabad and Shahjahanpur. In 1821, the troops carried it to Arabia and Egypt. The other available reference is in the Portuguese source which records its occurrence in the spring of 1543 in Goa when the mortality was so great that it was with great difficulty that people could be buried. It is again reported to have erupted in 1563.
first quarter of 1826, it spread to Benaras and Kanpur and thence to Delhi, Mathura and Agra in November.\(^\text{16}\)

The references to the plague are more numerous for the obvious reason that the plague resulted in a great loss of life. The background of the Black Death also made the European travellers more aware of the disease. However, the contemporary observers could not possibly give an exact number of deaths. The figures mentioned by them appear to be exaggerated, or, at best impressionistic. Still, from their accounts it can be discerned that the mortality rate was high. In the plague of 1616-18 in the Punjab, a large number of people died and houses were locked with dead bodies inside. Mutamad Khan writing in Jahangir’s reign notes that in an hour about fifteen persons died. While observing that the toll amongst the Hindus was higher than the Muhammadans, he does not give any explanation for this. Writing about the severity of the disease in Kashmir, he mentions that a *darvesh* (a religious mendicant) who performed the ritual of washing the body of a friend also contracted the disease and died the next day.\(^\text{17}\)

There are several references to the plague epidemics in other parts of India from the sixteenth to the early nineteenth century.\(^\text{18}\) 'Greater part of the people were destroyed' in the


plague, which broke out during the reign of Islam Shah in 1550 says Badaoni.\(^{19}\) In 1575, there was an outbreak of the plague at Gaur, which according to Abul Fazl was ‘fraught with evil to
generality’.\(^{20}\) The severity of the plague in the Deccan during 1702-
04, is commented upon by Manucci who says that two million
people died and that, compelled by hunger, the fathers, offered to
sell their children for a quarter to half a rupee.\(^{21}\) The plague
affected Gujarat from 1812 to 1821, Central India and Rajputana in
1813 and Kumaon and Garhwal in 1823.\(^{22}\) Honigberger noticed in
1838 that only one person in twenty recovered from the disease at
Pali in Rajasthan.\(^{23}\)

It might be of interest to mention that the Western travellers
noticed the occurrence of the plague in other parts of the world as
well. When Bernier went to Egypt in 1656-58, the plague was
prevalent at Rosetta.\(^{24}\) The epidemic broke out in upper Egypt in
1820-21 when Mahomed Ali was making preparations to send an
expedition there. In 1823 it was reported to be prevalent in
Alexandria.\(^{25}\) In 1832-33 there was an outbreak at Saree, the

\(^{19}\) Al Badaoni, \textit{Muntakhab-ut-Twarikh}, tr. and ed. George S. A. Ranking, Idarah-
\(^{20}\) Abul Fazl, \textit{The Akbarnama or The History of the Reign of Akbar including an
Account of his Predecessors}, tr. H. Beveridge, Rare Books, Delhi, 1973,
(Reprint), Volume III, p227.
\(^{22}\) O.P. Jaggi, \textit{History of Science, Philosophy and Culture in Indian Civilization},
Volume IX Parti, pp125-27.
\(^{23}\) J.M. Honigberger, \textit{Thirty Five Years in the East}, pp91-92. Also, Alexander
\(^{24}\) Francois Bernier, \textit{Travels in the Mogul Empire 1656-68}, tr. Archibald
capital of Mazenderan and its neighbouring area of Ushruf. By 1836, it reached Constantinople and Bosphorus.

On the whole, the etiology and the factors responsible for the spread of the plague were not understood and the contemporaries ascribed various reasons to it. Impure air arising from drought and scarcity was considered as the causal agent of the disease in the early seventeenth century. It was also believed that the disease was contagious and anyone touching the corpse or the clothes of the plague victim was liable to contract it. Although the role of rats in transmitting the infection was not understood, yet the characteristic behaviour of the rats was noticed. It was observed that when the disease was about to break out, a rat rushed out of its hole, struck itself against the doors and walls of the house and died. If the inhabitants vacated the place immediately, they escaped contracting the infection. Bernier thought that heat spread the infection; the pores opened due to intense heat following which the pestiferous and malignant material confined in the body was expelled. As late as the early nineteenth century, Honigberger did not consider the disease to be contagious. He believed that the infection spread through the air. The pestiferous dust blew which communicated the virus externally by the absorption through lacrimal glands of the eyes, pituitous membrane of

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26 Alexander Burnes, *Travels into Bokhara*, Volume III, pp106-07. Burnes mentions that so few people survived that the young boys had to dig graves for their relatives.


the nostrils and cavity of the ear and internally through the respiration of the lungs'.

The European travellers prescribed different medicines for curing the plague. Bernier claimed that a person was cured within four days after taking 'butter of antimony' along with lancing the abscess. Manucci does not give the name or any other characteristic feature of the medicine which he prescribed but only refers to it as 'pills' which cured the wounds and buboes. Honigberger prescribed small doses of a bean called *Strychnos Faba St. Ignatii*, which according to him was an effective cure.

The evidence from the nineteenth century suggests that to prevent the spread of the plague some kind of quarantine was also resorted to. The house of the person who died of the plague was immediately shut up and self-imposed quarantine was adopted. At Pali, the villagers did not allow Honigberger and his fellow travellers to enter their village and brought whatever provisions they needed to their camps. Honigberger did not give medicines to the people in their houses but asked for the patient to be brought outside. The Western travellers also noticed that the measures taken by the people in India were similar to those adopted in other countries.

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32 Francois Bernier, *Travels in the Mogul Empire 1656-1668*, p451. Bernier writes that in Egypt, he gave this treatment to the Vice Consul at Rosetta. Bernier himself contracted the plague there, and after taking his own medicine was cured within three-four days.
36 Alexander Burnes, *Travels into Bokhara*, Volume III, pp106-07. At Ushruf, near Saree, a barricade around the village was put up and a villager with a
However, in the absence of any clear understanding of the etiology of the diseases erupting in epidemic form, the traditional systems of medicine existing in India, that is Ayurvedic and Unani, were probably not in a position to deal with these.\textsuperscript{37} There are occasional references to the distinguished practitioners of the two systems of medicine. For example, Shaikh Hasan at Sarhind during the reign of Akbar and Hakim Basant at Lahore during Shah Jahan’s reign, and Balram Misr and Manka Tabib at Hissar during Aurangzeb’s reign.\textsuperscript{38} Some well known physicians in the Punjab during the early nineteenth century were Bahadur Chand at Haranpur, Mohammad Qasim at Gujrat, Bhagat Bishan Chand at Miani, Shaikh Ahmad at Bholu Kochhar, Darvesh Hakim at Kalaske, and Lala Hakim Rai at Lahore.\textsuperscript{39} The dar-ul-shafa stick was seated there to prevent trespassing. At Constantinople, the people shut themselves up in their houses cutting off all contact with the outside world. Also J. M. Honigberger, Thirty Five Years in the East, pp85-86.

\textsuperscript{37} Debiprasad Chattopadhyaya, Science and Society in Ancient India, Research India Publications, Calcutta, 1977, pp19-20. The two systems laid emphasis on the co-relation between the elementary forms of nature to conditions of health and disease. The similarity in the method of diagnosis and training led to the coexistence of the Ayurvedic and Unani systems of medicine in the pre-colonial period. For a detailed account on the traditional medical systems in India, refer to History of Medicine in India (From Antiquity to 1000 AD ), ed. Priya Vratt Sharma, INSA, New Delhi, 1992; Asoke K Bagchi, Medicine in Medieval India, Konark Publishers Private Limited, Delhi, 1997, pp70-71; Poonam Bala, Imperialism and Medicine in Bengal, Sage Publications, Delhi, 1991, p33.

\textsuperscript{38} Iqtidar Alam Khan, ‘The Middle Classes in the Mughal Empire’, Indian History Congress Proceedings, Aligarh, 1975, pp16-18.

\textsuperscript{39} Ganesh Das, Char Bagh-i-Panjab, Early Nineteenth Century Panjab, tr. and ed. J.S Grewal and Indu Banga, Guru Nanak University, Amritsar, 1975, pp31, 48, 61, 72, 87, 91, 98, 102, 119.
(hospital) at Lahore where medicines were distributed at the governments' expense was looked after by the well-known Faqir brothers until 1845 when the Austrian physician Honigberger took over its charge.40

The well-known physicians generally received jagirs for their maintenance. Similar state supported establishments are reported to have existed under the Mughals who too gave assignments of revenue to the physicians.41 Emulating the rulers, the nobility and the well-to-do persons also provided for the distribution of medicines and patronized the physicians. In fact, the officials, merchants and traders, professional people, and the well-to-do craftsmen got themselves treated from the private practitioners during the Mughal rule.42

II

In all probability, the common man in urban areas, particularly in the large administrative centres, had access to the charitable medical institutions supported by the state and the aristocracy. Nonetheless, the existing systems of medicine and institutional arrangements for the treatment of diseases were probably not geared for the handling of diseases on a large scale, let alone in epidemic form.

Therefore, in view of their own helplessness to deal with the epidemics, people tended to combine practices of a psychological

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40 J. M. Honigberger, Thirty Five Years in the East, p viii, xviii.
41 Irfan Habib, The Agrarian System of Mughal India 1556-1707, Asia Publishing House, New Delhi, 1963, p312. The mansabdars and the trading classes also patronized a large number of physicians. They worked in the contingents of the mansabdars and some of them also received mansabs.
42 Iqtidar Alam Khan, 'The Middle Classes in the Mughal Empire', Indian History Congress Proceedings, pp16-18.
nature with medicines and some procedures to purify the blood. There were large local and sub-regional variations in these. Generally, there was a very thin line of distinction between the medicinal and non-medicinal remedies, both of which were resorted to and both of which appear to have continued well into the colonial Punjab.

The district administrators extensively reported the traditional remedies for the treatment of various diseases. The belief in the curative properties of herbs and plants was widespread. To cure fever in the area to the south of the Sutlej, a purgative made by boiling mixture of senna, cassia, fennel, rose leaves, figs and tamarind was given to the patient. The treatment of smallpox revolved around cleansing of the blood as the disease was believed to be due to the blood sucked in by the child ‘in utero’. For this, *ludhrak* was given to the patient after rubbing it in rosewater and pearls applied externally in the form of powder. Milk was given along with *munaqqa* (dry grapes) to bring pocks out. When the disease matured, roasted gram was given to cause desiccation. Cauterization was carried out by the barber to cure the plague. For this, milky juice of *ak* (wild bush) was collected in a cup of wheaten dough and applied over the buboe, which was then cauterized.

The people also had recourse to certain procedures. Purifying the blood for treating fevers was fairly common; the traveller Charles Masson was bled when he suffered from fever in

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43 *Gazetteer of Ludhiana District*, 1904, p46.
44 *Gazetteer of Attock District* 1907, p264.
45 *Gazetteer of Ludhiana District*, 1904, p46.
1826. The people of Peshawar annually bled themselves to reduce the susceptibility to fevers. Maharaja Sher Singh was bled in 1843 to cure malarial fever. In the south-western Punjab also, bleeding was often carried out to cure fever. The barber bled the patient by cutting open the vein so as to remove the poison. The early British records also refer to variolation as a procedure for reducing the intensity of smallpox. In 1873, about eighty variolators from different social backgrounds were reported to be working.

The belief in ‘remedies’ of a non-medicinal nature was fairly widespread, albeit its forms and expressions varied considerably.

46 Charles Masson, Narrative of Various Journeys in Balochistan, Afghanistan and the Panjab, p10. This task was performed by a hajjam (barber).
47 Alexander Burnes, Travels into Bokhara, Volume II, p93.
48 Sohan Lai Suri, Umdat-ut-Tawarikh, tr. V. S. Suri, Punjab Ithias Prakashan, Chandigarh, 1972, Daftar IV, p216. The physician Azizuddin performed the bleeding process following which Sher Singh recovered.
49 Gazetteer of Muzaffargarh District, 1908, p48.
50 Punjab Government Civil Secretariat Proceedings, Home: Medical and Sanitary (cited here after as Proceedings, Home: Medical and Sanitary) October 1873, Serial Number 5, p815. C.f. Chapter 1. The inoculators kept dry crusts from pustules mixed with a few grains of rice in a box. Smallpox was induced by inserting the mixture into a wound made near the base of the thumb. This was kept for six hours. Dietary restrictions were imposed. For six days cold water was poured over the patients' head. This was discontinued for three days when the eruptions began. Pustules were opened and pus drained off. Amongst the Muslims, the Sayyids and Mullahs performed inoculation. Rajputs and Nais acted as inoculators amongst the Hindus of all areas barring south-east Punjab where the Hindus did not protect themselves for the fear of offending the goddess. Imperial Gazetteer Of India, Provincial Series, Punjab, Volume 1, Suprintendent of Government Printing, Calcutta, 1908, p146. Also, David Arnold, Colonizing the Body: State Medicine and Epidemic Disease in the Nineteenth Century India, Oxford University Press, New Delhi, 1993,p127-28.
These included the use of charms, repetition of certain religious mantras (hymns) and giving opprobrious names to the patient to expel the disease. In addition, several restrictions were observed and certain rituals were resorted to for obtaining relief from diseases. The attempts to ‘transfer’ the disease to other people or areas were also common. Simultaneously, people made offerings at Gurudwaras, temples and mosques and worshipped planets for divine intervention. In addition, to obtain cure from smallpox and cholera, the goddesses Sitala and Mari were also propitiated.51

Whether or not all the ‘remedies’ resorted to in the pre-colonial period were always effective, the available evidence suggests that the mortality from the epidemics in the centuries immediately preceding was perhaps not as large as under colonial rule.

III

More than forty million people are estimated to have died of malaria in the subcontinent during the nineteenth and twentieth centuries. Cholera is reported to have caused three million deaths from 1877 to 1916, the annual rate being more than 3.5 lakhs a year.52 Smallpox took a toll of several million lives in the late nineteenth century, with an annual average of more than one lakh fatal cases. The plague caused over ten million deaths from 1896 to 1921.53 In the short span of just one year the influenza epidemic

51 For details, see William Crooke, An Introduction to the Popular Religion and Folklore of Northern India, pp 41-42, 86-87, 94-106.
52 David Arnold, Colonizing the Body, p 164, 201.
53 Major F. Norman White, Twenty Years of Plague in India with Special Reference to the Outbreak of 1917-18, Punjab Government Civil Secretariat Proceedings, Home: Medical and Sanitary, April 1919, Numbers 190-94 (cited hereafter as Twenty Years of Plague in India), p2.
claimed around twelve million lives.\textsuperscript{54} Apparently, there was some connection between the large-scale mortality and the new situation.

Theoretically, the 'colonial situation' is visualized as a complex interplay of political, economic and cultural domination by an industrially developed European power over a technologically less developed society which provided raw materials for the metropolitan industry and markets for its produce.\textsuperscript{55} The depletion of the natural resources, a concomitant of the 'colonial situation' seemed to be particularly conducive for widespread epidemics and large-scale mortality in the subcontinent. Cumulatively, the colonialisation of the Indian economy through increase in land revenue, changes in cropping pattern, ever increasing export of agricultural produce facilitated by the railway, and the destruction of traditional manufacturers led simultaneously to the general impoverishment of the peasantry and artisans. With the shortage of foodgrain, the per capita availability of food became less, and the poor in particular became more vulnerable to famines, diseases and epidemics.\textsuperscript{56}

As explained below at some length, the rail and

\textsuperscript{54} Census of India 1921, Volume XV for Punjab and Delhi, Civil and Military Gazette Press, Lahore 1923, p12. Also, I. D. Mills, Influenza Pandemic in India 1918-19, IESHR, Volume 23, Number1, 1986.


\textsuperscript{56} The prices of foodgrains in India rose about three times between 1850 and 1900. Irfan Habib, Essays in Indian History: Towards a Marxist Perception, Tulika Publications, New Delhi, 1998, p 333.
road networks, which served as the 'arteries' of the new order also facilitated the outbreak and spread of disease.57

At the same time, a new concept regarding the state's responsibility for the protection of the health and well being of its people was emerging in Britain during the nineteenth century. It took a concrete shape after the enactment of the Public Health Act of 1848 and subsequent establishment of the General Board of Health. In the early 1850s local bodies were set up in Great Britain for taking care of the matters pertaining to sanitation and public health.58 These new concerns of the state gradually filtered down to India also.

Initially, however, the public health policy in India emerged out of the concern for improving the health of the British troops in India. Hospitals for the troops and certain medical institutions meant exclusively for the Europeans had come up in the early decades of the nineteenth century. By William Bentinck's time, the government intervention in the matters of health and sanitation began to be advocated.59 With the takeover of the Empire by the Crown in 1858, the sphere of the public health policy got enlarged. Already, soon after annexation, the local committees had been created in the Punjab for improving the living conditions and

57 See chapter 1.
58 The concept of public health had its roots in the Enlightenment, but it gained momentum in the Utilitarian era. It reflected the ideas of humanism and progress. For a discussion on Public Health in Britain, see John V. Pickstone, 'Dearth, Dirt and Fever Epidemics: Rewriting the History of British Public Health, 1780-1850', in Epidemics and Ideas, ed. Terence Ranger and Paul Slack, pp138-42.
Sanitation in urban areas.60 Conservancy and public health figure among the concerns of the town committees of Lahore, Amritsar, Jalandhar and other district headquarters in the early 1860's. In 1863, the Report of the Royal Army Sanitary Commission drew the attention of the provincial governments towards the unhealthy sanitary conditions in towns, which caused diseases and epidemics among the soldiers marching through or halting at any station. The Commission, therefore, proposed that sanitary commissioners should be appointed to investigate the outbreak of diseases, visit the affected areas, and collect statistics. Consequently, a sanitary commissioner was appointed in the Punjab in 1868.61 The Commission also suggested that the provincial governments should set up municipalities for improving the sanitary condition of towns and cities.62

Under the Punjab Municipal Act of 1867, which was modelled on the Delhi Municipality, municipalities came up in the urban centres of the province in 1868 to look after water supply, lighting and sanitation.63 In the 1880's, following Ripon's reforms, the financial and administrative responsibility in public health matters was placed with the provincial governments and the

municipalities. Public health now comprehended matters of sanitation, conservancy, water supply, sewerage and drainage, maintenance of hospitals and dispensaries and vaccination. However, compared with other social concerns like education, public health was given a relatively low priority by the colonial administration. The municipal funds mainly came from octroi, which did not generate enough resources for the effective implementation of the new public health policy and further extension of public health measures.64

The British concentrated on providing the best of hygiene, sanitary and medical facilities to the military and civil population of their own race, followed by the troops in general. Therefore, in its actual working, the public health system reflected the priorities of the colonial government. In these special areas the essentials of the metropolitan sanitary science were applied to protect the residents from the effects of hot climate and dust and disease endemic in the areas of native concentration.65 Thus, the imperial capitals, that is Simla and New Delhi, as well as the hill stations, cantonments and the civil lines, received the utmost priority of the Administration. These areas were followed by the other towns. The rural areas occupied the lowest priority in matters of sanitation.66

The Western medicine was the key component of the colonial public health policy. A formal decision to introduce its teaching was taken in 1835. This led to the marginalization of the

64 For an all India perspective see, Mark Harrison, Public Health in British India: Anglo Indian Preventive Medicine 1859-1914.
65 For a discussion see, Anil Kumar, Medicine and the Raj: British Medical Policy in India 1835-1911, p161.
traditional medical systems, and the indigenous practitioners began losing aristocratic patronage and public support among the emerging middle classes. However, after the experience of 1857-58 when the troops from the Punjab came to the rescue of the Empire, they got designated as the ‘martial’ races or castes who were favoured for recruitment.67 The local hakims and vaids were trained in the rudiments of the Western medicine to cater to the health needs of the potential recruits in the army. This arrangement continued till 1889, when the indigenous practitioners were excluded from the government medical service under an all India shift in the policy clearly in favour of the Western medicine.68

The Western medical institutions were introduced in the Punjab in the first year of annexation. There were hospitals for the troops and those meant exclusively for the Europeans. The missionaries set up their hospitals and dispensaries mainly for the natives. In 1849, the government established civil hospitals at Amritsar, Jalandhar, Multan and Sialkot. In the 1850’s, government dispensaries came up at many places including Rawalpindi, Peshawar, Amritsar, Bannu, Hazara, Sialkot, Dera Ismail Khan, Dera Ghazi Khan.69 During the first three decades, the government

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67 Under the ‘martial castes’ theory, the British maintained that the ethnic origins and the racial characteristics of the main groups of Punjabi recruits (Sikh Jats, Hindu Dogras and Muslims of the Salt Range) fitted them for military service. Consequently, the Punjab became the leading recruitment centre of the Indian army and by the outbreak of the First World War three-fifths of the British Indian troops came from this region. For details, see, Ian Talbot, *Punjab and the Raj 1849-1947*, Manohar, New Delhi, 1988, pp41-46.


69 Based on the Gazetteers of the districts of Amritsar, Jalandhar, Ambala, Delhi, Dera Ghazi Khan, Multan, Rawalpindi, Bannu, Peshawar and Sialkot.
dispensaries were classified on the basis of their financial resources. In 1879, the medical institutions were reclassified on the basis of the number of beds. Those with forty or more beds were designated as civil hospitals. The first class dispensaries had twenty-four to forty beds, the second-class dispensaries had less than twenty-four beds, while the branch dispensaries had none.\(^{70}\)

In 1886, medical institutions were broadly categorized as ‘government’ and ‘aided’ hospitals and dispensaries. Hospitals were now defined as those medical institutions, which had not less than forty beds and not less than twenty indoor patients daily. Government hospitals were of two kinds—provincial hospitals, which were controlled and supported by the provincial government; and the local hospitals, which were controlled and funded by the municipal committees and district boards. Below them were three grades of dispensaries—Class A had from twenty to forty beds and at least ten indoor patients daily; Class B had ten to twenty beds and at least three indoor patients daily; and Class C were the smallest. The ‘aided’ medical institutions included private charitable hospitals and dispensaries, which received grants from public funds.\(^{71}\)

\(^{70}\) Proceedings: Home, Aug 1879, Serial Number 11, p 765. The first class dispensaries included those institutions where contribution of Rs 72 per mensem was guaranteed from the local source; the staff included a superintendent, a sub assistant surgeon and a compounder. The second class dispensaries included those institutions where a contribution of Rs 39 per mensem was ensured, its staff consisted of a superintendent, a native doctor and a compounder. The third class dispensaries which had guaranteed contribution of Rs 26 only, had a native doctor and a compounder each. These were situated at Delhi, Ambala, Amritsar, Rawalpindi, Multan, Dera Ismail Khan, Peshawar, Sirsa, Pind Dadan Khan, Jhang and Jalandhar.

\(^{71}\) Proceedings, Home: Medical and Sanitary, May 1886, Serial Number 21, pp 48-50.
FIG ii - FRAMEWORK TO HANDLE EPIDEMICS

MEDICAL ADMINISTRATION

Inspector General of Civil Hospitals

Civil Surgeon

Assistant Surgeon

Sub-Assistant Surgeon

Hospital Assistant

CIVIL ADMINISTRATION

Commissioner

Deputy Commissioner

Extra Assistant Commissioner

Tahsildar

Nab Tehsildar

ADDITIONAL STAFF DURING THE PLAGUE

Chief Plague Medical Officer

Senior Commissioned Medical Officer

Medical Officer

Kanungo

Patwari

SUPPLEMENTED BY

Missionaries

Indigenous Practitioners

Government Pensioners
The subordinate medical service in the Punjab was recruited from the Calcutta College until 1860 when a Medical School was set up at Lahore. In 1870, its status was raised to that of a college.\textsuperscript{72} This college, in addition to the normal medical course, offered a licentiate course of four years duration for indigenous medical service. It thus, produced qualified vaids and hakims along with civil and military native doctors and physicians.\textsuperscript{73}

The hospitals were placed under the inspector general of prisons until 1880, when, the civil medical department was organized. This department was now placed under an inspector general of civil hospitals. The civil surgeon was the chief medical officer who supervised the functioning of the dispensaries of the district. He also supervised the work carried out by the assistant surgeons and hospital assistants. The sub-assistant surgeons looked after the medical institutions at the sub-divisional headquarters. The hospital assistants looked after the functioning of the minor hospitals and dispensaries in the different towns. During epidemic situations, the general administration was required to support the health authorities. Thus, the deputy commissioner at the district level and assistant commissioner, tahsildars and naib tahsildars at the tahsil level worked in association with the medical staff.\textsuperscript{74} The services of pensioned subordinates and missionary doctors were also used.\textsuperscript{75}

\textsuperscript{72} *Imperial Gazetteer, Provincial Series, Punjab*, Volume I, p 145.
\textsuperscript{73} Anil Kumar, *Medicine and the Raj: British Medical Policy in India 1835-1911*, pp 45-46.
\textsuperscript{74} *Imperial Gazetteer, Provincial Series, Punjab*, Volume 1, pp 98-99, 144-45.
FIG iii - NUMBER OF MEDICAL INSTITUTIONS 1866-1921
The degree of involvement of the general administrative staff varied according to the intensity of particular epidemics and scale of mortality. The people nevertheless had limited access to the medical facilities. At the end of 1866, there were sixty-nine dispensaries in the Punjab. Their number rose to 267 in 1898 and to 504 at the end of 1919. Despite an increase in their numbers in 1912, there was only one dispensary for 43,000 inhabitants, and by the end of 1919, there was one dispensary for 40,000 persons. The sanitary commissioner attributed this to the lack of funds and admitted that the medical facilities for the public were insufficient: 'In parts of the Punjab, the medical needs of the people are insufficiently met owing to the scantiness of the dispensaries in proportion to the population'. The administration was scarcely in a position to handle epidemics.

IV

Epidemics have been studied from different perspectives. Among the general studies in the world context an important early work is by C. E. A. Winslow (1952) who gives a descriptive account of epidemics of cholera, plague, typhus and malaria in terms of their

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76 Proceedings, Home: Medical and Sanitary, July 1902, Number 16-17, p1. Also, Proceedings, Home: Medical and Sanitary, September 1920, Number 96, p29.
77 Proceedings, Home: Medical and Sanitary, July 1913, Number 60-62, p1. The Budhlada dispensary accommodated an average of six and a half persons per bed while Tohana could accommodate an average of five patients per bed.
78 Proceedings, Home: Medical and Sanitary, September 1920, Number 96, p29.
79 Proceedings, Home: Medical and Sanitary, July 1902, Number 16-17, p1.
outbreak, etiology, treatment and impact. G. Melvyn Howe (1972) demonstrates the inter-relationships between people, environment and disease in Britain over time. William H. McNeil (1977) discusses the role of micro parasites in the outbreak of the plague, cholera, smallpox and typhus fever contracted by the ape man as well as the hunter and food producer, and traces the evolution of preventive measures. He also notices the subsequent rise of new infections and diseases due to transoceanic exchanges and invasions. In the context of the outbreak of malaria in the nineteenth and twentieth centuries in India, Ceylon, Malaya and Mauritius, Gordon Harrison (1978) studies the endeavours of scientists like Laveran and Koch against malaria. More recently, Christopher Wills (1996) has studied the origin, causes and treatment of the three dreadful diseases—the plague, cholera and AIDS, also dealing with the growing concern of the masses with the public health measures. However, in all these works, important in themselves, the authors have relied on secondary sources, particularly medical journals. Their treatment, by and

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large, is descriptive rather than analytical. It leaves out the political context and the social and economic consequences of epidemics, which are the primary concern of the historian.

The social history of epidemics has lately received some attention in scholarly essays. In the global context mention may be made of a collection of essays, entitled *Epidemics and Ideas: Essays on the Historical Perception of Pestilence* (1995) that deals with various epidemics over time in different parts of the world. These essays show the manner in which epidemics were interpreted and understood and the ways in which they influenced the prevalent ideologies. In the first few essays, the authors study the influence of epidemics on intellectual thought and writings in classical Athens, early medieval Europe and the Islamic world. James Longrigg examines Thucydides' treatment of the Athenian plague. With reference to the malaria epidemic in Paris in the fifth and sixth centuries, Peregrine Hordan studies of the link between epidemics, miracles and public spiritedness. Lawrence I. Conrad focuses on the challenge posed by the plague epidemics to the Islamic thinking; notably the plague as a form of divine mercy and martyrdom for believers, and chastisement for non-believers.

A few essays in this collection deal with the management of epidemics, people's responses and the evolution of the concept of public health. They also deal with social prejudices impeding the work done by the authorities to combat the diseases. The poor were stigmatised as the carriers of the disease. In his study of early modern Italy, Brian Pullan notices the three contrasting roles assigned to the poor—as bearers of the plague, as victims of the

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plague and as beneficiaries of the plague because it is believed to have generated new forms of employment and redistribution of wealth in favour of the poor. John V. Pickstone studies the fever epidemics in Britain from 1780 to 1850 and brings the conflict between the contemporary medical attitudes and theories and the rise of Chadwick’s ideas in the 1840s advocating public health schemes to prevent outbreak of diseases. Richard J. Evans analyses the ability of the European state structures to adapt to the challenges posed by the cholera epidemic in the nineteenth century. He considers the riots and the disturbances as forms of reaction to strict governmental control.

Some essays in this volume study epidemic diseases outside Europe, in India and Africa, also dwelling on the response of the people to epidemics and the measures adopted by the colonial states. Terence Ranger highlights the social tensions arising in the wake of the smallpox and influenza epidemics in South Africa. With reference to syphilis, Megan Vaughan studies the dilemmas of the colonial rule and the tensions between the Government Medical Officers and Missionaries in Uganda. This collection throws up useful ideas and insights for the study of social history of epidemics, but barring Rajnarayan Chandavarkar’s essay on the origin, spread and handling of the plague in the Bombay Presidency, no other essay covers an epidemic that broke out in India.

For a more specific treatment of epidemics in the Indian context, we may turn to a limited but significant set of studies. Mention may first of all be made of the pioneering contributions of David Arnold in this field (1993). He deals with the political and cultural problems in a colonised society as reflected in medical practices and manifested in varying perceptions and responses of
Arnold studies the contexts in which Western ideas and practices gained acceptance among the Indians before 1914. He focuses on the three recurrent epidemics—smallpox, cholera and the plague in terms of their origin, spread, mortality as well as the state intervention and public response. Arnold studies the manner in which epidemics hastened the process of the acceptance of Western medicine. He brings out how the state-centred system of scientific knowledge and power was created despite the failure of the Western medicine to make a transition from state medicine to public health. The author makes use of a large number of contemporary sources like *Proceedings of the Home Department, Annual Administrative Reports, Imperial Gazetteer of India, 1907*, and *Native Newspaper Reports*. In an earlier essay (1987), Arnold studies the complex interplay of coercion and resistance and cooperation and hegemony during the plague epidemic in the Bombay Presidency. In a recent work (2000) he brings out the relationship between Indian and Western science, the nature of science and technology under the Company, the creation of state scientific services and the rise of Indian scientific community. The author argues that there was no unidirectional process of scientific and technological transfer but a series of cross-cultural exchanges. However, the empirical bases

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of Arnold's valuable works are confined to Western and Eastern India.

In his study of public health, Mark Harrison (1994) discusses the purpose, nature and political significance of colonial medical intervention.\textsuperscript{89} He examines the European attitude towards the natives and the way in which it was reflected in the medical policy. He also throws light on the effects of quarantine on colonial trade and pilgrimage to Mecca. However, the effects of the measures taken to combat different epidemics have not been studied by the author.

In a full length study of \textit{Imperialism and Medicine in Bengal} (1991) Poonam Bala studies the relationship between the indigenous and Western systems of medicine.\textsuperscript{90} She notices that till 1860 there was a peaceful co-existence between the two systems. Subsequently, till the end of the century, there emerged considerable tension between the two systems due to professionalisation of medicine and standardisation of drugs in Britain. From 1900 onwards, the Western medicine posed a serious challenge to indigenous medicine. She emphasises that the objective of the public health policy was primarily to keep the Europeans and the army healthy. She notices that due to this limited concern and lack of sensitivity to social conditions, the public health policies could not be implemented successfully.

A somewhat similar concern is evident in \textit{Medicine and the Raj} by Anil Kumar (1998) who traces the introduction and spread of Western medical science and education, including homeopathy,


in India during the colonial period. While studying the growth of hospitals in India, he maintains that these catered primarily to the needs of the Europeans. The author reflects on the underlying motives of the British medical policy and notices the subservience of medical science to politico-military needs of the Empire. He points out to the growing discrimination faced by the indigenous medical men in various spheres as an outcome of this situation. Like Poonam Bala, Anil Kumar too focuses on the British medical policy in Bengal. However, the role of the state in combating epidemics, let alone examining the bearing of the governmental measures on the general population is outside their purview.

Notice may also be taken of some short studies of the cholera and influenza epidemics. Ira Klein (1980) discusses the controversies that existed in the scientific circles regarding the causal agent of cholera. She shows how the anti-cholera struggle in India was linked to the scientists' attempts to comprehend the origin and treatment of the disease. In another article (1994), Klein traces the increased incidence of the disease during the century of the colonial control from 1850 to 1950 to the environmental decay stimulated by material changes and 'development'. I. D. Mills (1986) focuses on the genesis and dissemination of the influenza pandemic of 1918-19 in India. He looks at the Indian situation, particularly in the Bombay Presidency, with reference to the

outbreak of the epidemic on world scale. He relates the spread of the disease to the movement of the troops and postal peons besides the panic migration of the sick, but does not take note of the relief work carried out by the state. Moreover, the author in his analysis of male and female mortality in different age groups and its repercussions on fertility resorts to extrapolation, which discounts the reliability of data.

A recent collection of essays (2001) on Disease and Medicine in India deals with a variety of themes from the earliest to recent times. The essays by Raj Sekhar Babu and Sunitha B. Nair analyse the role of the state machinery and Christian missionaries in promoting Western medicine and trace the process of the consequent marginalisation of the indigenous medical practices in the Madras Presidency and Travancore state. Sujata Mukherjee studies the changes in the perspectives on health issues in colonial India, with special reference to women and children, and shifts in the nature of imperial medical intervention concerning them. The papers by Mridula Ramanna and Amit Mishra study the reactions of the people towards Western medicine and Gandhi’s reaction towards public health issues including sanitation and infectious diseases.

However, only a few essays in this collection focus on the outbreak of epidemics, their causes and how they were handled. Ishrat Alam studies smallpox and its treatment in pre-modern India by analysing Baldaeus’ account of the goddess of smallpox in the Malabar region. Harish Naraindas evaluates the eighteenth century theory and therapeutics regarding smallpox as understood in India and Britain. Ihtesham Kazi studies the environmental factors

leading to the epidemics of malaria. He considers ecological disturbances caused by the expansion of communication through roads and railways and the construction of road and rail embankments as the primary causes for creating conditions conducive for malaria outbreaks. With reference to Bombay, Simkie Sarkar also considers various construction activities like Colaba Causeway, Dockworks and reclamation schemes that increased the incidence of malaria, and discusses the different methods to handle the disease in its epidemic form. Dhrub Kumar Singh, while studying the prevalent theories regarding the cause of cholera, brings out mutual contradictions, both in the causes and in the modes of treatment. However, none of these essays focus on epidemics in the Punjab.

Despite their limitations of scope and sources, the works mentioned above constitute the broad historiographical context for the present endeavour, at least in terms of the questions asked. However, there is no serious study directly of the diseases and epidemics within the specificities of the Punjab region.