International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

# Growth of Public Health Care System in British India

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**ABSTRACT**
The public healthcare system in India founded during colonial rule. At that time various researches and surveys were done, medical topography was prepared, legislations for public health were brought and various commissions were set up to monitor British troops by the colonial administration. Gradually this led to the foundation of public healthcare system in India. The period of 19th century and early 20th century India witnessed the development of new trends in medical systems and a transition from surveys to microscopic studies in medicine. The history of disease and their prevention in the colonial context traces back the epidemiology of infectious disease.

**KEYWORDS:** Public, Heath, colonial, Growth, Community, Society, Sanitary, Nutrition, Cholera, Plague, Disease, Prevention.

According to Winslow, Public Health is the "science and art of preventing disease, prolonging life and promoting physical and mental health and well-being." Public health efforts enhance the capacity of community and society to maintain and improve personal health[1].
The events of 1857-58 exposed the vulnerability of British troops in India to diseases. The effectiveness of British troops during the mutiny had been severely hampered by the ravages of epidemic disease particularly cholera; which had also claimed many lives among European civilians besieged at Lucknow and in other North Indian towns[2].

## FACTORS AFFECTING THE HEALTH OF THE BRITISH

There were several causes for the poor conditions of the British army like:
**sIndian Climate** was not suitable for them so J.R. Martin advocated that troops should be sent in rotation to hill stations above 5000 feet but medical officers warned that some elevated positions being unfavourable to health especially those which rose abruptly from alluvial or jungle covered tracts. Darjeeling Nainital and Lantour, were all unhealthy in this respect. They were very high incidence of diarrhea dysentery and malaria[3].
**Clothing pattern** was also not suitable according to Indian climate.
**Nutrition** of military was also concerned. Edmund Parkes regulated the guidelines of their diet. He advocated a diet balanced between nitrogenous substances, fats, carbohydrates and salts. In 1860s, following the report of the American Army Sanitary Commission on the health of troops during the civil war, fresh vegetables were shown to be invaluable in protecting against wound infection[4].

**Consumption of beers and spirits** among them was also affecting their health. Charles Gordon said that drunkenness was still the most prevalent vice in India in 1866 and a major factor in the incidence of hepatitis, heat apoplexy, phthisis, and veneral disease among British soldiers.

**Sanitary conditions of barracks** was also very poor. Sir John Hall, Inspector General of hospitals complained about the space allotted to the soldiers in barracks and recommended surface space of 50 square feet and beds be arranged singley to given each soldier more private space. Then, following the Military Cantonment Act of 1864, barracks were rebuild and improved. Now better ventilation was done, it was also regulated that each new construction should have two stories (the upper one being reserved for sleeping) in the belief that air at low level was damper and more liable to malarious. But the mortality rate of the British troops was still higher[5].

## SANITARY WORKS

British troops were making demand for sanitary surveillance and regulation of the Indian population. Firstly Bazaars on the edge of cantonments were criticized. Florence Nightingale said that the Bazaars were simply the first savage stage of social savage life. They had no regular system of drainage, no public latrines and no sufficient establishment to keep them clean. They suffered from overcrowding, bad ventilation, bad water supply, filth, foul fitches, jungle and nuisances.

The colonial administration attempted to resolve the problem of military hygiene in several key areas of sanitary policy. The Royal Commission on the Sanitary State of the Army in India appointed in 1859 recorded a death rate of 69 per 1000 among British troops in India. It Identified the underlying causes as inadequate sewerage and water supply, poor drainage, and ill-ventilated and overcrowded barracks. In its report of 1863 the Commission recommended the creation of distinct areas of European habitation (military cantonments and civil lines). It should be situated in accordance with the topographic principles laid down by J.R. Martin, president of the India office Medical Board and a member of the Commission. The Commission also recommended the establishment of a Commission of public health in each presidency and pointed out the need to improve sanitation and prevention of epidemics in civil society[6].

Military cantonments act of 1864 passed. It provided for a system of sanitary policing under the overall charge of military medical officers: regulations were laid down governing land use, nuisances, drainage, and unlicensed trades.

Sanitary boards were formed in each province in 1864. Sanitary Inspector General later named as Sanitary Commissioners replaced these boards and took over the charge of sanitation.

In 1870, the sanitary department was merged with the vaccination department to form a central sanitary department. From 1870 to 1879, sanitary departments were set up in each province. Under the orders of the Governor General of India in 1880, Sanitary Engineers were employed in all major provinces. The Sanitary Commissioner of India and the provincial sanitary commissioners had no executive powers and were advisors to the government. They carried out the inspection of sanitation, the supervision of vaccinations, the maintenance of vital statistics, and the collection of meteorological data. In districts, civil surgeons were in charge of sanitation. The local self-government policies of Lord Ripon strengthened the efforts to improve sanitation by increasing the availability of funds at the local level. In 1885, the Local Self-Government act was passed and local bodies came into existence. These were now responsible for sanitation at the local level but the necessary staff was not provided by the Central Government. In 1912, the Government of India sanctioned the appointment of Deputy Sanitary Commissioners and Health Officers with the local bodies and released funds for sanitation[7].

## DISEASE CONTROL AND PREVENTION

When the British Empire came into power in India, they faced the challenge of a new set of diseases that were endemic in that region. Those diseases were plague, leprosy, cholera, and malaria. In the late 19th century, the government realized that many deaths could be prevented and public health services were strengthened.

## PLAGUE

In 1812, plague outbroke in Kutch that spread to Gujarat and Sind, and lasted for approximately 10 years. A disease having all the symptoms of plague was reported in 1828 and 1929 in Hansi in the Hissar district of Punjab. In 1836, plague was reported to be prevalent in the Marwar state of Rajputana. The first official records date back to 1896 when an epidemic of bubonic plague broke out in Bombay. Initially, it was reported in the port cities of Bombay, Pune, Calcutta, and Karachi. In the first year, it was confined to Bombay except for minor occurrences in other parts of the country. In the second year, epidemics were reported in Bengal, Madras, United Provinces, Central Provinces, Punjab, Mysore, Hyderabad, and Kashmir. It devastated almost the whole of India until about 1899[8].

The Plague Commission was constituted in 1896 under the chairmanship of Prof. T.R. Frasor, Professor of Materia Medica at the University of Edinburgh. Its report of 1904 concluded that the disease was highly contagious and considered human transit as an important source of spreading the disease. The commission recommended necessary preventive measures to disinfect and evacuate infected places, to put a control over mass transit, and to improve sanitary conditions. The commission also suggested strengthening of public health services and development of laboratories. The Plague Research Committee was formed and various types of research was conducted in 1897. The experiments of Hankins concluded that plague bacillus was not spread by saprophytic means from the outside world. Its main sources were poor sanitation and the resultant spread from excretions of humans and animals. Haffkine's Anti-Plague vaccine was used and inoculations were made on a large scale that proved useful as reported by W.B. Bannerman, Superintendent of the Bombay Plague Research Laboratory (1897–1900). Professor Lusting's curative serum was also used and found effective[9].

## CHOLERA

It gained focus of medical services due to its serious impact on the troops and officers of the Company. Constantinople International Sanitary Conference of 1868 reported that the atmospheric conditions are the basic cause of spreading the disease. But after the 1868 cholera epidemic in India, the Cholera Committee was set up to investigate the causes of the disease. It concluded that cholera was frequent especially at religious festivals and fairs. Epidemics were attributable to the importation of disease by pilgrims, travellers, and troops. The committee suggested improving sanitation, ensuring proper management of festivals, and developing hygienic conditions in institutions like hospitals, jails, and military cantonments. In the 1860s and 1870s, Dr. James L. Bryden, India's first epidemiologist and government's chief advisor on epidemic cholera, studied cholera extensively. He considered cholera to be an air-borne disease probably spread by a seed-like organism and reported that cholera is not transmitted by contaminated water. A.C. DeRenzy, Sanitary Commissioner of Punjab, opposed his views and stated that it would hurt the sanitary work going on in India to prevent the spread of cholera. John Murray, who served as Inspector General of Civil Hospitals in North Western Provinces and Bengal, conducted detailed studies on cholera, he believed that environmental factors precipitated the attacks of cholera, but he gave valuable treatment

guidelines for cholera in that period[10].

Various other significant works were also done by scientists. In the 1890s, metrological theories about cholera were abandoned, as desired by W.R. Cornish. New treatment options evolved along with better prevention methods resulting in the marked decrease in cholera mortality.

## MALARIA

The establishment of the railways and irrigation network by the British government of India without keeping in view the efficient drainage systems for floods and rainwaters was one of the factors of causing malaria. This created many fresh water reservoirs for the propagation of mosquitoes. A lot of research was done for malaria control. In the 1840s, attention was paid to proper drainage and chemoprophylaxis was started with Quinine.

Surgeon Major Sir Ronald Ross started to study malaria in 1882. In August 1897, he demonstrated the life cycle of the malarial parasite stating that anopheles mosquitoes carried the protozoan parasites called "plasmodia". He was later knighted and given a Nobel Prize in Medicine in 1902. This discovery opened new horizons in malaria research. In 1900, Christophers, Stephens, and James conducted detailed research on mosquitoes in the military cantonments in Punjab. From 1903 to 1908, Capt. S.P. James conducted research on the causation and prevention of malarial fevers. Capt. S.R. Christophers and Dr. C.A. Bentley investigated the malaria and black-water fever in Duars in 1911. They reported that it was an area of malaria hyper-endemicity with an endemic index of 50-100% in the district. Black water fever was one of the consequences of hyper-endemic malaria.

Bently suggested efficient mosquito eradication and the improvement of drainage systems for malaria control. The League of Nations criticized the chemoprophylaxis with Quinine that was practiced on a large scale by the British Indian government[11].

## OTHER COMMUNICABLE DISEASES

In the province of Assam, Indian Officers faced a strange disease endemic called Kala-azar and Beriberi by the natives. An investigation about Kala-azar was carried out by G.M. Giles, Surgeon IMS on special duty in Assam in 1898. He concluded that the disease was anchylostomiasis with slightly different symptoms. In 1899, Surgeon Major Ronald Ross investigated the disease and reported that Kala-azar was an epidemic and communicable disease with symptoms resembling those of malaria except hepatomegaly and splenomegaly.

T.G. Hewlett studied enteric fever in 1883 and conducted detailed studies on individual case histories and environmental conditions. The Sleeping Sickness commission (1908–1910) was formed to investigate the causes of the disease. Capt. F.P. Mackie studied the disease and preventive measures.

In 1939, The Tuberculosis Foundation of India was established. As there was no clinically effective treatment available for tuberculosis at that time, tuberculosis sanatoriums were formed in hilly areas to provide a healthy environment and segregation.

## THE CONTAGIOUS DISEASE ACTS

Due to the spread of veneral disease among British troops, 'lock hospitals' were established for the compulsory treatment of diseased women. But military authorities were unwilling to allow medical officers to examine women[12].

The Cantonments Act made provision for the medical inspection and regulation of brothels and in 1868,

the system was formalised and extended under the Contagious Disease Act (CD Act)[13].

There was increasing criticism of the CD acts in Britain and India from religious groups. The Hindoo Patriot declared its support for the act in Calcutta. But some Indian press were opposing. The Bengalee condemned the act. The New Military Cantonments Act of 1889 incorporated a deliberately catch all clause which provided for the prevention of the spread of infectious or contagious disease within a containment, and the appointment and regulation of hospitals for the reception and treatment of persons suffering from any disease[14].

In 1895, the government passed legislations stating that no rule under the cantonment act if 1889 should contain any regulation permitting the medical examination or compulsory treatment of prostitutes suspected of having veneral disease. In 1897, Lord Hamilton, the Conservative secretary of state, instructed the viceroy Lord Elgin to repeal the 1895 act and to draft new rules permitting medical inspection to be reintroduced in cantonments.

## VACCINATION AND INOCULATION

The history of vaccinations can be traced back to 1802 when a Superintendent General of Vaccination was appointed in India after the discovery of the small pox vaccine[15]. Prior of vaccination in India., inoculation against smallpox was omnipresent which was sanctioned by Hindu and Muslim religions. In eastern India inoculation had its own special practitioners know as tikadars but it was regarded by British at inefficient and dangerous[16]. The introduction of the vaccination in India was militarily and economically desirable but it had many obstacles like, it involved a great cost and the strong possibility of creating civil unrest through interference in indigenous cultural practices. But few reform minded medical officers favoured the introduction of compulsory general vaccination[17].

By 1872, John Lumsdaire, health officer of Bombay had mustered enough support among European Community to effect the introduction of a bill in the Bombay legislative council providing for compulsory vaccination in the City of Bombay for all children under 14 years of age. But Indian government resisted the bill. Another obstacle was that the subordinate staff involved in vaccination could not be trusted to produce accurate statements of their work.

Another problem surrounded the use of vaccine made from calf lymph, introduced on an experimental basis in Bombay in the late 1850s. It saw the considerable opposition to the practice from orthodox Hindus. In 1870, the vaccination work was transferred to the supervision of the Sanitary Commissioners and their staff. In 1880, an act was passed for the compulsory vaccination of children in municipalities and cantonments. Small pox was the main target during that period, although vaccinations were also carried out for plague and other diseases. Variolation (an Eastern inoculation technique) was also used initially to control small pox. In 1864 and 1865, 556 people were vaccinated in Bengal, the United Provinces, and Punjab while more than 5 million people were vaccinated in the same provinces in 1902 and 1903. In all of British India, the vaccination rate was 2.7% in 1880 and 1881; that number increased to 3.5% in 1902 and 1903. Successful vaccinations at birth were 19.9% in 1880 and 1881 and 39.1% in 1902 and 1903. The budg*et al*located for vaccination was about 0.7 million rupees in 1880 and 1881. That figure rose to approximately 1.1 million rupees in 1902 and 1903[18].

## PUBLIC HEALTH AND TOWN PLANNING

British government employed various officials, surgens geologists, botanists, geologists, meteorologists, foresters and other specialist for the investigation in Indian environment. They did surveys, prepared

medical topography and worked on medicines[19]. One of them was **Sir James Ranald Martin**, he was a British military surgeon in colonial India. He did surveys and found links between the human and environmental health. His **Notes on the Medical Topography of Calcutta** published in 1837. He wrote his account to draw the attention of the government to the increasing threat of disease arising from the deteriorating condition in Calcutta and the urgent need for the medical institutions for the labouring poor. Martin's book was based on his own experiences as a doctor and the diligent survey that he carried out in various parts of Calcutta. But his book also reflects the influential work of the Lottery Committee in building roads and drains in Calcutta. His book addressed three intertwined themes whose basic concern was the threat to public health in Calcutta. The first was a detailed evaluation of the city's natural habitat. The second was an investigation of Indian habits and living conditions. And the third was the recommendations for reform[20].

Martin's assumptions drew on familiar and well-grounded neo-Hippocratic principles. His concern with miasmas reflected a new evaluation of smell seen as an active risk to healthy living. Miasmatic theory is a medical theory prevalent in early 19th century of British India, according to it, polluted air was the cause of various contagious disease. 'Miasmas' or bad air were thought to be produced by decaying vegetation or animal matter and putrid atmospheric exhalations.

Martin wrote that the lack of sufficient fall in the drains and stagnation in the lakes gave rise to deleterious exhalations. The tanks dotting the city were 'in an impure and neglected condition, from the annual accumulations of the vegetation until at length they become the half-dried, green and slimy puddles, which so contaminate every portion of the native town.

Martin's investigation of the public in the city threw up a much more varied picture. He reported that the commercial hub of the Europeans between Dharmatalla and Bow Bazar was 'thickly inhabited' with both Europeans and Indian Christians, forming a sort of intermediate zone. He observed many cities and villages and blamed the irregularity of the ground for the bad drainage and suggested to use the earth dug up to create a new canal to fill up the uneven patches of ground. He surmised that the persistent problem of Calcutta was faulty drainage since the city was in the deltic region and prone to inundation. His prescriptive zeal anticipated later 19th century municipal policy regarding drainage, sewage and drinking water.

He recommended a planned network of great sewers built of solid masonry that would also be arched. Houses were to be connected by smaller lines to these main sewers which in turn would debouch in the river at a point well below the ordinary low water mark. Open smaller sewers were to be made 'in the direction of prevailing winds and wide so as to admit of exposure of the sun and free ventilation. He wanted the use of water from the open tanks to be regulated in the Indian parts of the city, and bathing and washing of clothes at tanks used for drinking water to be prohibited.

His concern brought administration to work towards these issues in the later 19th century. In the first instance the government came to determine what was 'public' even if this meant the violation of sacrosanct rights to private property. Second, in the interests of the 'public' it assumed the right to regulate and intervene if necessary.

James Alston has argued that in Europe from the 1830s such a move which restricted rights to property ownership in the city was in fact one of the early examples of modern urban planning. In Calcutta too, throughout the 19th century, the ownership of land became accountable to government on sanitary grounds but this view was challenged and it followed a tussle. **Ranajit Guha** has argued, "improvement was a political strategy to persuade the indigenous elite to attach themselves to the colonial regime and to make

imperial rule acceptable, even desirable, to Indians. His Medical Topography was welcomed and a Bengali journal shows it the way to lessen ills of the city.

## INSTITUTIONAL SETUP OF MEDICAL SERVICES

A medical department were established in Bengali in 1764 for rendering medical services to the troops and servants of the company. In 1775, Hospital Boards were formed to administer European hospitals. In 1785, medical departments were set up in Bengal, Madras and Bombay presidencies with the 234 surgeons. In 1896, all three presidential medical department were amalgamated to form the Indian Medical Service (IMS). Medical departments were under the control of the central government until 1919. The Montagu Chelmsford reform of 1919 led to the transfer of public health sanitation and vital statistics to the provinces. This was the first step of decentralisation of Health Administration in India. In 1920-21, Municipality and Local Board Acts were passed containing legal provisions for the advancement of public health in provinces. In 1930, the All-India Institute of Hygiene and Public Health was established in Calcutta. The Government of India Act 1935 gave further autonomy to provincial governments. In 1937, the Central Advisory Board of Health was set up with the Public Health Commissioner as secretary to coordinate the public health activities in the country. In 1939, the Madras Public Health Act was passed, which was the first of its kind in India. In 1946, the Health Survey and Development Committee (Bhore Committee) was appointed by the Government of India to survey the existing health structure in the country and make recommendations for future developments. The Committee submitted its report in 1946 and the health of the nation was reviewed for Public Health, Medical Relief, Professional Education, Medical Research, and International Health[21].

## CONCLUSION

Here we can see a lot of change in the arena of medical field in many aspects. Many improvements took place through various initiatives, legislations and investigations. They took measures to control epidemics and made vaccination voluntary for all, they started registration of death and birth and made statistics which helped them to formulate policies. In this way the public health care system established in India.

## REFERENCES

1. Roy Grant, A Bridge Between Public Health and Primary Care, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3478090/ (accessed June, 29, 2021).
2. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994).
3. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994), p-61
4. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994), p-62
5. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994), p-63,64
6. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)

7. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)
8. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)
9. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)
10. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)
11. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)
12. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994)
13. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994)
14. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994), p-74,75
15. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)
16. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994)
17. Mark Harrison, Public Health in British India: Anglo-Indian preventive medicine 1859-1914 (New Delhi: Cambridge University press, 1994), p-82,83
18. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021)
19. David Arnold, The New Cambridge History of India: Science, Technology and Medicine in Colonial India (Cambridge: Cambridge University Press, 2004)
20. Biswamoy Pati and Mark Harrison, eds., The Social History of Health and Medicine in Colonial India (Abingdon, Routledge, 2009), p-22
21. Muhammad Umair Mustaq, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763662/ (accessed, June, 29, 2021