
Colonial Medicine and Public Health under the British Rule- Issues with Special Reference to the United Provinces

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ABSTRACT

British Colonial masters brought new European Medicines and Public Health Care systems to India. But their initiatives suffered from the charges of enclavism. Their whole concern was limited to the treatment of the English soldiers fighting incessant wars with other rival colonial powers and the native kingdoms. The introduction of Quinine as a prophylactic drug against the vagaries of dreaded malaria epidemic and Jenner's Vaccine against small pox were all used to establish their hegemony and supremacy over everything native. The indigenous treatment of small pox through variolation technique was banned because it did not follow the European methods of collection and application of pustulates from cows. Hospitals were centered round the presidency towns and rural health was totally neglected. Technologies such as railway and canals further aggravated the situation in bringing vectors of malaria, plague, cholera and smallpox which spread with stupendous speed. In the end of the day, the colonial technology resulted in throwing the country to face numerous famines and epidemics the demographic impact of which was not at all favourable to India.

KEYWORDS

Medicine, Technology, Epidemics, Famines, Demography

INTRODUCTION

Before the advent of the British indigenous medical system in India was well developed and left considerable influence on the development of medicine in Europe. (Imperial,1909). The works of great surgeon and physician of the Buddhist era, Charak and Shushrut found great reflexes on the works of Ar-Razi the notable Arabian physician who died in 932. Razi's works remained the principal source of information to the European physicians. The whole system of medicine practice in India came to be grouped under one head known as Ayurveda which has been taught in India throughout centuries and even now. The system narrates vast knowledge of use of herbs, and their chemical formulations, use of metal internally, elaborate process of preparations and bold and skillful surgery including amputations of limbs. Students were trained to operate on wax spread out on a board, or on the tissues and cells of the vegetable kingdom, and upon dead animals (Imperial,1909). But with the growth of Buddhism the high caste Brahmins avoided practicing medicine which involved touching of human blood and morbid matters. There followed a lull in the indigenous system of medicine as the Arabs conquest favoured Unani system. The Muslim doctors or hakims monopolised the patronage of the Muhammadan princes and nobles of India. (Hunter, 1886). This situation continued till seventeenth century.

Introduction of the European medicine in the early days of penetration British succeeded in establishing its hegemony and superiority over the indigenous system of medical practices. Medical discourse became an important tool in their hands to achieve this end and proved to be a critical site of interaction and conflict. (Arnold, 1993)

Going back to the history of preventive public health services way back in 1785 the British East India Company established medical department in three presidencies of Calcutta, Madras and Bombay with 234 military surgeons. The lack of availability of the few English medicos by 1800 compelled the Europeans to take help of the local physicians but during the course of the nineteenth century established their superiority by bringing in more European doctors and treatment made available to the Europeans troops and the British Officials.

In 1868 Civil Medical Department was established by 1896 Indian Medical Services(IMS) started. Till 1902 only nine medical doctors were inducted into the IMS services. IMS officers were allowed to treat naïve soldiers and European troops were treated by the officers of the Royal Army Medical Corps(RAMC) (Imperial,1909). This single example is sufficient to establish the fact that likewise railways no great medical training was extended to the natives and whatever was opened also suffered from racism. Majority of the military Assistant Surgeons were Europeans or Eurasians and natives were absorbed as hospital assistants.

Montague-Chelmsford Reform of 1919 made health services a provincial subject and municipalities were made responsible for public health. First Public Health Act was passed in Madras in 1939. Bhor committee submitted its report on public health, medical relief, professional education, medical research and institutional health.

Foundation of Hospitals and Medical Colleges

Military considerations were dominant in the establishment of hospitals. In order of chronology first Royal Naval Hospital was established in Madras in 1679 as British were locked in war with the French there, followed in Calcutta in 1796 after the conquest of Bengal and in Bombay in 1784. Thus, public health and medicine in India as introduced by the British suffered from enclavism as it owed its origin to military. (Ramasubban,1982 quoted by Mark Harrison in *The Origins of Health care in British India: The Company Raj, c.1760-1858* available at <http://www.evolve360.co.uk/Data/10/Docs/10/10Harrison.pdf>,

Medical institutions were established with the solitary purpose of catering the needs of the British soldiers posted in India. Of these three large hospitals in Presidency towns two were meant for the British and one for the Indian troops. The need of these hospitals was acutely felt, as Harrison sees, the Dragon Guards stationed in England suffered an average mortality of 14 per thousand, whereas, British troops stationed in Bombay suffered from annual mortality (almost entirely from disease) of over 47 per thousand between 1830 and 1849. (Harrison, 1999).

First medical college was established in Calcutta in 1835. By 1838 only four pupils passed out from this newly established medical college. Lahore medical school was established in 1860. In 1930 Reading Health School in Delhi was established in 1918. All India Institute of Hygiene and Public health was established in Calcutta in 1930 and rural health training center was established in Calcutta in 1939. The first medical institution was opened in the United Provinces was in 1854 known as Thompson Medical college at Agra (Presently Sarojini Naidu Medical College) to train the medical students. Except two lunatic asylums in Banaras and Bareilly districts no other medical infrastructure was developed in the state during the colonial rule.

The imperial records testify that in India general progress was for a long time slow.

During the first half of the nineteenth century, the government aided hospitals and dispensaries were opened in places of importance and only, where the inhabitants were ready to help (subscribe by donations) that a medical officer was made available to take charge of the new institution. (Imperial,1909). In 1854 rules were made clearer by which services of medical officers and instruments and medicines to be supplied only where amount of local subscription was enough. Thus by 1880 the total number of public hospitals and dispensaries in British India under the government control was about 1200, by 1890 about 1700 and in 1902 nearly 2500. Considering the population of two decades these numbers proved to be miniscule.

Without going into their own failures and introspection the English system blamed the natives for this slow progress in the development of the medical services and ascribed three reasons for this slow growth in this

sector- Indifference on the part of the people, want of officers and insufficient funds. (Imperial ,1909). This was the state of affairs prevailed in the presidency towns only.

Government hospitals and their financing

The Imperial record shows doubt in its data about the state of affairs in the non- Presidency towns. it tells the figures cannot be given with absolute accuracy, by 1902 government control dispensaries and hospitals numbered 2400, private institutions numbered 500 and special institutions in connexion with police, railway etc. stood at 500 and the average density of one hospital equaled 330 square miles of the country. Those hospitals were given priority in supply of drugs from the government stores which were funded by the local municipal funds. Funds in private hospitals were raised mainly from charitable donations, local subscriptions, and missionary societies. Condition of rural dispensaries was even worse. Rural areas continued to be poorly served by dispensaries and Western-trained practitioners right through to Independence in 1947. (Muraleedharan, 'Rural health care in Madras Presidency: 1919-39', *Indian Economic and Social History Review*. 24(1987). Many of them were too poor for more than simple arrangements. In 1901 nearly two fifth of the Bengal dispensaries had income of less than Rs1,000 a year. Medical and education are taken to be two branches of public welfare and items of expenditure. Here too shows the old English mentality as Digby once recalled they were in India for making money. Hence loud claim of British benevolence does not stand on the acid test of public welfare

Condition of Women Health

The Imperial record testifies that 55 percent of the patients who visited the government hospitals and dispensaries were males, 26 percent children and 19 percent women. Though it is evident from the study of demography that malaria affected women of the reproductive age group of 15 to 35 most, very little was done for their care and medical checkup other than male practitioners. Though the Imperial gazetteer of India speaks of great efforts were made to afford the women of India medical relief in a form acceptable to them. Many hospitals were established for their exclusive use and arrangements were made to ensure privacy in general dispensaries. These claims are not supported by figures and statistics. References are made about the efforts of Lady Dufferin and Lady Curzon about their concerns about the sufferings of the women of India and collection of 7 lakhs of rupees from voluntary contributions by the later. It is claimed that the National Association for supplying Medical Aid to the Women of India founded by countess Dufferin in 1885 did some yeomen service towards the eluviation of the suffering women of India. It is claimed that the association maintained about 260 hospitals where two million women and children received medical aids. Here again it is noted that these hospitals were supported by voluntary contributions and occasional grants from the government. (Imperial,1909).

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Table 1: Statistics of Public Hospitals and Dispensaries Under Government Control

Years	1880	1890	1900	1902
Institutions	1,212	1,736	2,364	2,456
Patients				
In-door	217,000	255,000	381,000	373,000
Out-door	7,192,000	12,722,000	20,524,000	22,039,000
Surgical operations performed	372,219	604,140	831,806	895,226
Income				
From government fund	19,03,000	20,73,000	27,76,000	29,89,000
From Municipal and Local Funds	12,90,000	22,07,000	31,64,000	37,15,000
From subscriptions, endowments, fees and other sources	5,02,000	5,69,000	13,36,000	14,65,000

Source: Imperial Gazetteer of India, Vol.IV-Administrative,1909

Table 2: Statistics of other Hospitals and Dispensaries in 1902

	Institutions	Patients
Private Independent Institutes	480	3,007,000
Railway, Police, & C, hospitals	506	1,111,000

Source: Imperial Gazetteer of India, Vol. IV- Administrative,1909

Diseases and Vaccination

Epidemics, especially the malaria epidemic, continued unabated throughout the British rule in India and Medical Services was quite unmatched corresponding to the population. It was mainly malaria which affected the health of females of the reproducing age group of 15-35 years most than the males. The decade between 1881-1900 witnessed a steep fall in the growth of population. Occasional calamities like devastating flood of 1894 (rainfall exceeded more than 50% on an average) led to the destruction of crops and malaria after rains gripped the state which brought the death rate to exceptionally high at 42.1. (Burn,1902) In 1908 Malaria epidemic struck United Provinces and 52 persons per square mile were recorded dead. During the whole decade, the figure of death registered at 40 casualties per square mile. Fever also took its toll of recorded 2 million lives and more of a quarter of a million. As an indirect consequence, the years of epidemic resulted in a very low birth rate as low as 33.9 in 1909. Malaria and plague affected women population most . Then census superintendent, reported that caused lowering of the numbers of the reproductive females. (Blunt,1911)

Malaria in association with plague, cholera, and overwhelming influenza epidemic led to great variation of the population Between 50 to 70% of the people were attacked and the physical and economic damage was colossal). Younger boys under the age of 5 years, males and females in the age group of 20 -25 and women up to 35 years were worst hit. Depletion in the number of reproductive age group and their loss of fecundity and ability to reproduce led to the decline in crude birth rate. Loss of population amounted to - 3.1% than the previous decade and by head count it minimised14,32,000 heads. Table 3 shows us trend of population growth in the United Provinces during 1901-1951. Years between 1901 and 1931 were worst for the females who suffered most due to malarial fever.

Table: 3. Variation of Population in United Provinces During Fifty Years

Years	Persons	Variation	Males	Variation	Females	Variation
1901	48,625,310		25,097,886		23,527,424	
1911	48,152,273	-473,037	25,142,941	+45,055	23,009,332	-518,092
1921	46,669,865	-1,482,408	24,451,301	-691,640	22,218,564	-790,768
1931	49,776,754	+3,106,889	26,147,014	+1,695,713	23,629,740	+1,411,176
1941	56,531,848	+6,755,094	29,639,052	+3,492,038	26,892,796	+3,263,056
1951	63,215,742	+6,683,894	33,098,866	+3,459,814	30,116,876	+3,224,080

Source: Table A-II Census of India, 1951 Vol.II. Uttar Pradesh General Population Tables Part IIA.p.15

The two decades following 1921 were free from the epidemic and condition of the public health improved. Vagaries of Cholera, plague and smallpox had been considerable quelled and anti-malarial schemes started in rural areas in Association with the Indian Research Fund. Decrease in death rate reduced decimal mean death rate to 21.9 in 1941 as against 25.6 in 1931. Birth rate remains stagnant with the rise of only 0.2%. The effect of Influenza was still predominant on the health of the reproductive group of women and postponement of marriage due to the effect of great Slump has slowed down the birth rate. But it is definite that reduction in death rate led to the rise in decennial rate of natural increase to 12.3% as against 8.4% of 1921-1930. (Prasad,1951, Tab.A-II.).Nevertheless, there was no quick technical fix to the problem of how to control this disease. (Harrison,1998).Attempts to eradicate the insect vector of malaria were unsuccessful, even within

confined spaces (Bynum,1994). Quinine prophylaxis, sold through post offices in quarter anna packets, made up in jails and each containing five (now seven) grains (Imperial,1909) was expensive and impracticable. If something more could have been done by the British authorities to prevent malaria remains a matter for debate.

Cholera was equally a dreaded disease from which India suffered. Although mortality from this disease did decrease somewhat in the early twentieth century by contrast to malaria. Cholera, increased the number of deaths and assumed epidemic proportions after the Anglo-Maratha war of 1817. It affected the Company's armies. (Watts, 1997)

Smallpox, which was treated as a scourge of India was indigenously treated by inoculation known as variolation by the Brahmins of United Provinces in most affected areas of Bengal before the discovery of Jenner's vaccine. Though British hegemony and superiority over the issue of Jennerian vaccine was profoundly established to Indian variolation technique people at large were not willing to take the English vaccine willfully. Hence recourse to compulsion was often taken to eradicate this dreadful disease. Statistics show it resulted in the decline of death rate from a high of 200,000 deaths per annum in 1894 to less than 10,000 in 1920.

Mental Asylums.

About the treatment of lunatics, the Imperial gazetteer,1909, shows that proportion of lunatics was proportion of lunatics was one fourth in India than that of England. It refers to 66,000 insane persons in a population of 294 million in 1901. The reason ascribed for this in the Gazetteer is nothing but a mockery of facts. It says rarity of alcoholism and possession of less brain energy by the Indians than the inhabitants of modern Europe was the cause for less insane persons in India. The letter of Assistant Civil Surgeon in-charge of vital statistics for North Western Provinces Dr. Cleghorn to then Census Superintendent North Western Provinces Mr. Plowden refers to extreme poverty which caused loss of brain's ability to perform normally (Census Report,1871). Dr. Cleghorn elaborated that an average male agricultural labourer used to get only one sheer and six chittaks of Behjur- a mixture of barley, peas and rough matters. This was all that he earned for his family. There was no oil, no vegetable, and salt was a luxury. Low intake of essential nutrients which support life resulted in emaciation and mental illness. However, his letter was not accepted by his Majesty the Governor General. The imperial records show an average lunatic asylum population was only 4,600. Government established two lunatic asylums in Bareilly and Baranas. The Government enacted Lunatic Asylum Act in 1858 to prevent the loitering Indian destitute and confine them in these centres and also the European insane to ensure they did not bring British rule into disrepute.

Under the present domain of our study it is argued that probable diminution of natural mortality was due to preventive medication. The spread of vaccination to control small pox, segregation and localization of cholera by prevention of local religious gathering on the area of local outbreak and improvement of sanitation through specially appointed superintendents, creation of dispensaries and small hospitals under trained men in rural areas and in the cities university educated practitioners and obstetrics all attempted to check the infantile as well as general crude death rate. It is argued that with the application of medical aids there witnessed an unprecedented improvement in public health conditions resulted in considerable reduction of death rate. (Bulletin of statistics, July, 1952, Department of Economics and Statistics, Uttar Pradesh). Table Number 4 has been prepared on the basis of the Imperial records which provides the status of vaccination under the British government.

Table 4: Statistics of Vaccination

	1880-1	1890-1	1900-1	1902-3
Persons Vaccinated	4,415,000	6,496,000	7,860,000	8,411,000
Percentage of total number of persons to population	2.7	3.1	3.4	3.5
Percentage of successful vaccination in each 100 estimated births	19.9	27.5	33.9	39.1
Cost of special vaccination establishment	7,50,000	11,66,002	11,66,001	11,66,000

Source: Imperial Gazetteer of India, Vol. IV-Administrative,1909

A province with 1,07,495 square miles of territorial area and population of 48,625,310 during 1901 the medical facilities extended was minimal. The province reeled under terrible famines of 1885-1900 and devastating cholera epidemics of 1891-92, 1894-97, 1900 and plague epidemic of 1896 and much more in the years to come. If there were some improvements in the treatment of the ailing population then the British technology itself was responsible for the spread of epidemics and diseases.

Railway and Epidemics

With the introduction of new technologies, mainly, the railways and irrigation projects, aggravated the spread of malaria. The construction techniques in which earth for the railway embankments often was dug from the borrow-pits along the railway tracks. But these pits were not filled and became cell pool of rain water and growth of vegetation in them became mosquito hatching grounds (Samanta, 2000). Railway lines which were laid on raised beds, Kerr rightly observed, interfered with the natural lines of drainage and created unwanted ponds and waterholes that became breeding grounds for malaria vectors (Kerr, 1995). Another factor which raised the proliferation of malaria in India was the British irrigation projects which led to the waterlogging, salinity and malaria deaths.

Prevention of malaria and import of Quinine and Jenner's Vaccine against Small Pox

To prevent the spread of virulent tropical malaria and to keep the health of European soldiers and the civil servants, discovery of quinine and small pox vaccines became two important tools in the hands of the imperialist government.

Discovery of Cinchona bark by the Spaniards in Peru, where they saw that the tribes were using it for remedy of various fever, was imported to India by the British to control malaria parasite. Use of quinine as a prophylactic drug against the virulent tropical malaria thus became an instrument of empire in keeping up the health of British officials and subjugation of the natives.

Yet another important discovery which the British feel proud of is Jenner's Vaccine against small pox. The English medical practitioners dealt small pox as a scourge of India and held it responsible for more victims than all other diseases combined. It was introduced in India in 1802. In treating the patients suffering from small pox, the British, totally denigrated the traditional system of variolation the Brahmins of United Provinces practicing in Bengal as murderous and finally banned the practice in some provinces as early as 1804 (*Indian J Community Med.* 2009 Jan; 34(1))

Condition of the Public Health and British Hegemony

Like the foundation of medical institutions, history of general sanitary work in India began practically with the investigations of the Royal Commission which reported in 1863 on the sanitary state of the army. (Imperial, 1909). Sanitary boards for the army were established in Presidency towns followed in sequence by the appointment of Sanitary Commissioners and Inspector Generals. In 1896 the government of the United Provinces introduced the most comprehensive scheme in which besides Inspector General of the civil hospital a Sanitary Engineer was posted to projected in towns and rural areas and advise the Divisional Commissioner with regard to sanitary works and was vested with the power of sanctioning works from the available Local Funds. But all efforts proved to be futile with emergence of Plague as an epidemic. The Indian Plague Commission of 1898 criticised the existing organisation of the Sanitary department.

If those arrangements whatever they were related to the Presidency and municipal towns, where only one fourth of the population of India lived, there was practically no organisation to support the rural sanitation in India. The British administration which continued a consistent policy of non-interference in the internal development of the subject nation forwarded a lame excuse of lack of sense of public cleanliness among the Indians in general and ill ventilated and overcrowded village homes, dirty sites crowded with cattle, choked with rank vegetation poisoned by stagnant pools and indiscriminate use of polluted tanks for bathing, cooking and drinking. Though sanitary infrastructure was created in India, no reform was initiated. Rather, as Ramasubban argues, the British pursued a distinctly colonial mode of health care witnessed by segregation and neglect of the indigenous population. Medical and sanitary expenditure was restricted to the colonial

enclaves where the Europeans resided and the government left the issues of health care to poorly funded municipalities.

Plague and British interventions

As a result of the poor sanitary conditions plague struck India as an epidemic which first appeared in Bombay in 1896 and soon spread in rest of the country. It is estimated that plague claimed the lives of no fewer than nine million people in India. The Government of India passed Epidemic Disease Act in 1897 empowering the provincial governments to inspect any ship, train or passenger, to detain and segregate plague suspects, to hospitalize those suffering from the disease, and disinfect, evacuate and, if necessary, destroy any dwelling at which the disease appeared. Government was also enabled to suspend religious fairs and pilgrimages. This Draconian Law resulted in the killing of Pune Plague Commissioner MR. W. C. Rand by Chapekar brothers in 1897.

The reason behind such an interventionist policy of the British government was an outcome of its concern about lot of the suffering humanity but because of the international pressure from countries like France which imposed embargo on Indian exports of skin and hides, and cotton least British improve sanitary conditions of the colony to contain spread of the epidemic. The government took this excuse to relax the restrictions least it devolves into another 1857 type of upheaval. Arnold, however, argues a more mundane reason for suspension of the programme was the cost of maintaining anti-plague measures, which was becoming unsustainable. (Arnold, 1993). But the plague epidemic extended an opportunity to the western medical community to impose their system on the colonial India. But plague epidemic, which gained attention of the international community, also became a harbinger of non-enclavism in matters of public health and led to the municipal reforms.

Growth of Municipalities in United Provinces

Responsibility of maintaining public health and sanitation was ascribed the local municipal bodies. A number of reforms were introduced by Lord Rippon and devolution of financial powers were made. United Provinces Municipal Act was passed in 1916. But none of these local bodies generated enough resources to be called a municipal corporation.

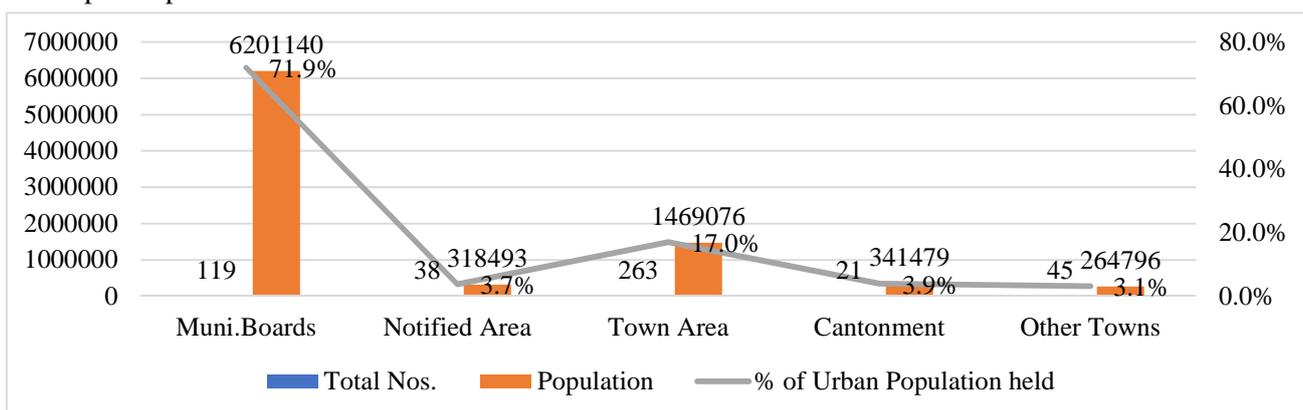


Figure 1: Number of Civic Bodies functioning in UP during 1951

Source: Census report 1951

The first Municipal Corporation Act was passed in 1956 and it led to the emergence of five municipal corporation in the Uttar Pradesh known as KAVAL Towns denoting Kanpur, Agra, Varanasi, Allahabad and Lucknow. Figure 1 shows during 1951 total numbers of the municipal boards in the state stood 119 catering 71.9% of the urban mass. Town areas numbered 263 and served 17% of the state's total urban population and

rest 3 categories of local bodies had little contributions towards urban municipal growth. This shows the slow urban growth and public health work during the British rule. Very little was done towards the essential and obligatory duties entrusted to the municipal bodies. Municipal Solid Waste and safe drinking water became a grave problem posing health hazards. The influx of the population from the rural areas in search of jobs have made the cities over crowded resulting in the development of squalors and slums.

Conclusion

British administration in India in its initial days did not intervene in the internal matters of the Indian people and whatever best it did in matters of medical health was enclavist in nature fulfilling the requirement of its army, civil servants and European communities who were entitled for the medical facilities. Majority of the Indians did not have access to the new methods of treatment, hospitalization and western medicine. Hospitals catered the needs of the Presidencies and rural health was totally neglected. Municipalities were suffering from continued lack of funds to support any largescale public health programme. Cholera, plague and other vector borne diseases have been perennially being a problem of health in the traditional village society. Railway enabled mass mobility of the people and enhanced the medical crisis to neighbouring regions where kinship relationship has been established earlier. We have briefly covered the medical and its application in the region concerned. It cannot be denied that availability of the first moving transport system enabled the successful functioning of the hospitals and mobility of life saving drugs. But resources were scanty comparable to the dimension of the problem. As a result, epidemic often struck and took toll of millions of lives. British nevertheless pursued its established policy of Whiteman's superiority and hegemony by denigrating and destroying whatever indigenous system in Indian medical system prevailed

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