CHAPTER 3

PUBLIC HEALTH AND DEVELOPMENT
OF MEDICAL CARE SERVICES IN INDIA

In this chapter we review the developments in public health and evolution of healthcare services in India that have shaped the place of medical technology in the healthcare services here. In view of the fact that India was a British colony, we attempt to compare the developments in the two places during the colonial period. The developments in the post-Independence period are placed in the context of the overall model of development adopted by the Indian rulers and policy makers.

3.1 Public Health and Health Services in colonial India

Over the early twentieth century capitalist development and rapid unplanned increase of the urban population led to slums, overcrowding and urban squalor in India just as in Europe over the previous century. There was large-scale urbanization in India after the First World War, with Calcutta, Bombay, Madras, Kanpur, Ahmedabad, Madurai and Coimbatore becoming major industrial centres. There were an estimated 7-8 million industrial workers. There was overcrowding on an unprecedented scale, and the problem was expected to increase in the post-World War II period with further industrial development. As in England the overcrowding in urban areas was largely associated with influx of rural population, which constituted the urban industrial working class. As in England, the urban industrial worker lived in abysmal conditions in the bastis (slums), which lacked all civic amenities (Health Survey and Development committee 1946a). Attempts to improve working class housing met with opposition from powerful slum landlords, as well as the municipal committees, for whom they were too expensive. The Second World War aggravated the existing conditions in all industrial areas. It was expected that this would aggravate further in the post-War period with further development of industry, unless adequate measures were taken, such as laying down minimum standards for housing for workers. There were reports and research in the 1920s-1940s exploring the link between poverty, living conditions and ill health (Madhwalla 2007). However, little was done. Even in the towns most directly amenable to the British influence and action, the conditions were appalling, with very high morbidity and mortality.

As several authors have shown, right through the first half the 19th century the emphasis of the colonial government in provision of healthcare services was on armies and European
civilian populations (Qadeer 2005, Jeffrey 1988). The Indian Medical Service (IMS) was primarily a military medical service, constituted for maintaining the health of the army. The professional medical men, both in the IMS and the civil medical services, did not show much interest in the sanitary matters unless there were epidemics. According to Jeffrey, 'most members of the IMS saw their careers in terms of access to lucrative private practices, and providing medical care to the imperial services as a prime function. Non-medical work, in trade, banking or land ownership and management, was also potentially lucrative. It would be surprising if such men took public health or sanitary reform seriously' (Jeffrey 1988 p 60-65).

Before the 1860s sanitary arrangements for the civilian population was not given much attention. Any efforts for local improvements, such as removal of filth, or repair of wells and drains, depended on the individual official in-charge.

According to the Health Survey and Development Committee, well-known as the Bhore Committee, (see later in the section for details on the Bhore Committee), there were four landmarks in the history of public health administration in India: (i) the appointment of the Royal Commission in 1859 to enquire into the health of the Army; (ii) the Report of the Plague Commission in 1904 following the plague outbreak in 1896; (iii) the reforms introduced by the Government of India Act 1919; and (iv) the reforms introduced by the Government of India Act 1935 (Health Survey and Development Committee 1946b).

Sanitation and hygiene as one form of preventive health measure can be considered to date from the 1859 Royal Commission appointed to inquire into the sanitary state of the army in India. The Commission recommended measures not only for the army but also for the civilian population. It reported that the health of the army could not be separated from the 'sanitary conditions of the neighbouring population, and that proper measures for water-supply, drainage, paving, cleansing and general constitution in these towns would be most beneficial to the health of the troops living near them. In accordance with the suggestions of the Commission, Commissioners of Public Health were established in 1864 in Madras, Bombay and Bengal. The Commissioners in Madras and Bengal put forward far-reaching recommendations, which included employment of trained public health staff in towns and districts. But these recommendations were not carried out and no comprehensive policy was laid down with regard to development of preventive health services. Administrative posts of Sanitary Commissioners were created in the Centre and in provinces, with advisory, but few executive powers, such as control of vaccination against small-pox in their respective areas.
In Madras and Bombay public health services were initiated through the municipal and district boards. However, not much progress was actually made and in 1869 the sanitary commissions were practically abolished. For twenty years very little was achieved. The reasons given for this lack of performance ranged from lack of funds, to unsatisfactory legislation, to apathy of the people. According to Jeffrey little was achieved partly because sanitary concerns were restricted to official circles, and technical disputes about the relationship between sanitary measures and medical science hindered the implementation of policy, especially with respect to the role of clean water in preventing cholera (Jeffrey 1988 p 94). The doctors of the Indian Medical Service argued that the sanitary commissioners would unnecessarily limit the functions of army medical officers, and through the Indian Medical Gazette waged a war against the appointment of a layman to head the Bengal Sanitary Department. Sanitary Commissioners were expressly excluded from any concern with the cantonments and the European civil lines; these remained the responsibility of the army. The measures proposed to deal with cholera were implemented for the army and cholera mortality dropped in the 1870s (to 3 per 1000). However, when medical men came to deal with civilian cholera they invoked excuses such as the superstition of the natives. Increasingly towns had local municipal committees, which focused on activities like conservancy, by employing sweepers to collect sewage and bury it, and on transportation. However, because of financial constraints these committees could not impact much on sanitation (Jeffrey 1988 p 95). In 1888, in view of the then recently created local bodies – in municipal and rural areas – the Government of India issued a resolution drawing their attention to their duties in matters of sanitation, and the task of sanitation was entrusted to these local bodies in many parts of the country. Training in hygiene and sanitation was expanded, and graduates were brought into sanitary work. Activity was severely restricted however, by the shortage of funds, and by blaming the poor natives for their ignorance, superstitions, etc, for their sickness and ill-health. There was opposition from local politicians to such measures. For instance: in Calcutta a number of sanitary initiatives were frustrated by opposition from members of the corporation who represented small landlords and Indian rate-payers who objected to taxation for sanitary purposes (Pati and Harrison 2001).

The Report of the Plague Commission in 1904 recommended strengthening of public health services and establishment of laboratories for research and for preparation of vaccines and sera. The action taken on these suggestions included: (a) creation of a Medical Research Department under the Central Government; (b) establishment of the India Research Fund Association for promoting research into medical problems; and (c) annual grants from the
central funds to the provinces to assist execution of public health works, such as drainage and water supply, and strengthening of public health personnel, such as appointing Deputy Sanitary commissioners and health officers in local bodies (Health Survey and Development Committee 1946b). The success of such 'preventive' sanitation efforts were negligible, except in the larger cities. The priority of sanitary work was based on military needs, and it retained this basis for much of the 19th century. Sanitary policy was restricted to towns and military areas, as the Royal Commission was to consider improvements for the towns in proximity to military stations (Jeffrey 1993 pp 92). This is similar to what happened in England several decades earlier in the mid-19th century, where the fear of epidemics spreading to entire towns spurred action to clean up.

We find that after the 1900s the state became increasingly active in the provision of public health for the general population, by funding measures such as small pox vaccination and loans and grants-in-aid for sanitation. However, as in Britain, the main sources of funding for hospitals and dispensaries were not the central government but the local authorities, charitable donations and private subscriptions. In case of sanitary measures it was the municipalities which played the principal role. Both, in Britain and colonies such as India, the role of the Central government was confined largely to legislation compelling or enabling local authorities to take action in sanitary matters (Pati and Harrison 2001). Changes were introduced in the early 20th century, when Sanitary Commissions were granted autonomy and the Sanitary Policy of 1914 formally took note of local knowledge systems, conditions and the need to study and understand these before intervening. The two Acts of 1919 and 1935 transferred medical administration (namely that of hospitals-dispensaries), medical education, and public health activities to the provinces. Decision-making in matters of sanitary and medical policy were devolved to Indians. Indians were also employed as municipal health officers and surgeons in the civilian wing of the Indian Medical Service, which underwent a drive towards 'Indianisation' after 1919 (Pati and Harrison 2001). This was considered to be a reflection of: (i) failure of IMS to attract sufficient European doctors; (ii) desire of successive Secretaries of State for India to lay the foundation of an independent medical profession in India; (iii) The colonial regime (especially the army) could not function without a large number of medical personnel, and these could not be supplied entirely from the UK; and (iv) Medicine was also intended as a bearer of western values that would bind Indians more closely to their colonial masters. While such measures led to greater public health activity in the provinces than before, however, they continued to be plagued by lack of adequate resources and personnel.
We thus find several similarities between the situation in the 19th century in England and in India, regarding public health measures. While there the wealthy demanded protection from the diseases of the poor, in India this took a racial form, with attempted to protect the Europeans (army and civilian) from the native diseases. The poor of India, like the British working class had 'to be rendered civilized and manageable' (Pati and Harrison 2001). The reforms in both were largely restricted to urban areas; there was a tendency to blame the victims for their ill-health - the poverty and the habits and morals of working class in England, and the superstition and backwardness of the natives; the conflict between the rich versus working class poor in England, in India between the Europeans and army, on one side, and the natives on the other; and the differences between medical men and the sanitary commissioners. Lastly, in both cases for a long time very little was actually done. In fact, as others, have pointed out public health in India was more typical of Britain, than of other colonies such as British East Africa (Pati and Harrison 2001).

While public health measures were not such a priority, this was not the case as far as medical services were concerned. Medical colleges had been established as early as in 1835 in the three Presidencies – Bombay, Calcutta and Madras – and they followed the guidelines laid down by the General Medical Council of England. The rudimentary medical services provided by the medical officers of the East India Company to its army as well as to British civilians got consolidated as the Indian Medical Service soon after 1857. In addition, several eminent Indian medical professionals also set up a variety of medical colleges and hospitals in different parts of the country. As a result many 'natives' were exposed to and were able to receive 'western' medical education since the beginning of the 20th century. According to the Annual Report of the Sanitary Commissioner for 1911 there were in 1910 in all 2670 hospitals and dispensaries (both funded by state as well as private sources) offering in-patient, out-patient and surgical treatments. The number of such institutions increased to 2707 in 1911, and in addition there were 829 special hospitals of the state, such as the Railway Hospitals. We learn from this Annual Report that at that time also private dispensaries were far more common in India than anywhere – 706 in all in that period. By 1900 it was common in most cities and towns to find men making their living from practicing Western medicine (Pati and Harrison 2001). There were also 4 medical colleges offering University degrees and 14 schools offering diploma courses. While these numbers may not have been sufficient for the large population, they indicate that the institutions being set up provided allopathic services and served to propagate it further.
Western medicine has had a long and complex history in this country; it was not simply an 'imposition' of the British colonizers. Before 1800 western medicine had made few inroads into India and was largely confined to European enclaves and the major port cities (Arnold 1993). A dramatic transformation took place over the next hundred years, whereby it became the dominant system within the realm of state medicine and public health. In the late 19th century the exposure to English education led to the growth of an English-educated, elite class of Indians in the country. By 1900 western medicine had started gaining in prestige and popularity among the western educated middle classes. The medical profession proved attractive to many Indians, who sought a career in the subordinate branch of the IMS. Indians joined the Indian Medical Service since 1855. Western medicine came to enjoy formidable degree of authority and ultimately became the universal system. While the policies and actions of the colonial government contributed in a large measure to the process by which it acquired its privileged position, yet 'the adoption of western medicine was punctuated by resistance, negotiation and participation' (Arnold 1993, p12). After the passing of the Montagu-Chelmsford reforms of 1919, the British expected the Indian ministers of health and education to try to support indigenous medicine, since the Indian National Congress had begun to pass resolutions in its support. While some ministers did support the Indian systems of medicine on both patriotic and economy grounds, some (in Bombay and Punjab for instance) resisted nationalist pressures and used their limited funds to support modern scientific medicine and surgery and make it accessible to all. While the Congress and non-Congress parties never committed themselves exclusively to one or the other side, leaders like Nehru supported the spread of Western scientific medicine. By 1920 many middle-class practitioners of western and indigenous systems of medicine were also involved in Congress.

The Rockefeller Foundation also was interested in promoting 'western medicine' and associated medical practices such as nursing in India. As we saw in the previous chapter the Rockefeller Foundation (RF) had initiated programmes for control of diseases in many parts of the world in early 20th century. It focused on plantations in different parts of Asia and Latin America to increase the productivity with scientific inputs, including control of diseases, which affected labour productivity. In India the RF began its activities in 1915, with control of hookworm disease in the tea gardens of Assam, initiated by Heiser. Kendrick undertook more work during 1921-1934, by development of traveling treatment units and building latrines (Kumar 2005 p51). The RF also supported voluntary health work in Travancore in South India in the 1920s (Kumar 2005 pp 52-53). RF expertise and advice were sought for malaria control. *One of the interests of the RF in India was medical education.* The then Surgeon General of
Bombay Presidency, Hooton, had made a request to the RF for aid to medical institutions in the Presidency in 1924, with the endorsement of the American consul. According to RF officials who visited India in that period it would be more desirable to co-operate with the Indians than with the British as education was under the control of Indians. RF supported the establishment in Calcutta of the All India Institute of Hygiene and Public Health, which was formally opened in 1932. The RF contributed to land, building, equipment and salaries to the tune of $ 604,000, with the Government of India committing to pay for future staff and maintenance. The Institute was to undertake pure research, and to find ways of applying it to the requirements of the population, both rural and urban. J.B.Grant, who was the Director from 1939-1945, gave emphasis to the sciences, like microbiology, parasitology, nutrition and public health chemistry, and did not want the Institute to be run as an ordinary government department without any academic status. He advised the government on several occasions, and was a member of the influential Bhore Committee on Health. The RF also provided fellowships that enabled Indians to receive training in laboratories in the US (see sec 2.2.2 p ). However, these RF fellows, on their return to India did not find suitable positions where they could use their training and expertise. They complained to RF officials, who counseled patience (Ramanna undated). One such fellow (in 1926) was Major Sokhey of the IMS, who later became the director of the Haffkine Institute.

Interestingly, vaccine research and development and production of vaccines in India was an area where institutions were established here in the same period as vaccination was gaining importance and institutions were being established in the other parts of the world. As recommended by the Plague Committee research institutes were set up in the early decades of the twentieth century. The organization of medical research in India started with vaccine research in British India, with the objective of primarily protecting the imperial army from infectious diseases. Some of the important discoveries made here in the late 19th-early 20th century were: the discovery of the aetiological agents of plague by Haffkine and Paul Louis-Simond, who demonstrated transmission of plague by fleas in 1898; and identification of the kala-azar vector by Short and Swaminathan. Haffkine developed a plague vaccine in India. Ross also worked on malaria in this period. The first bacteriological institute in India was founded in 1892 at Agra, followed by the establishment of the King Institute of Preventive Medicine, Madras, and the Haffkine Institute, Bombay, both in 1898; Central Research Institute, Kasauli, in 1905, and Pasteur Institute, Coonoor in 1907. By around 1930 there were around 15 such institutions in the country, which developed, produced and supplied vaccines and sera, as well as undertook diagnostic laboratory work, largely for the army (Health Survey
and Development Committee 1946c). There were also a few private companies that produced vaccines and sera, such as Bengal Chemicals and Pharmaceuticals, Bengal Immunity, and Smith Strainstreet and Co, all in Calcutta. Indigenous vaccines and sera were produced against rabies, tetanus, diphtheria, pertussis, cholera, smallpox, typhoid and anti-snake venom. India was considered to be at par with the rest of the world in vaccine technology till the 1930s. These activities were affected during World War II, when the doctors and researchers were called for War duty. What one sees is that while these institutes were set up as research institutes, they were engaged largely in producing vaccines and sera. A note by two members of the Health Survey and Development Committee (Bhore Committee) on this subject identified this as a major hurdle in the way of Medical Research in the country. ‘Apart from paucity of funds the worst enemy of the progress of medical research in India has been the fact that the officers employed in the Medical Research Department were mostly engaged in the manufacture of biological products and had very little, if any, time to devote to their declared function – Medical Research’ (Health Survey and Development Committee 1946c). They recommended that manufacture of biological products should be a purely Government function, if the state was worked on a ‘socialistic basis’. If it was to be capitalistic, the manufacture of biological should be in the hands of trade, but under proper government supervision. ‘The existing conditions under which Government is in competition with trade is unjustified, particularly when it deflects personnel which should be serving the advancement of medical research, to routine manufacture’ (Health Survey and Development Committee 1946c).

In the process of putting in place the public health structure described above, while the Sanitary Commissioners had inadequate support, the main emphasis continued to be on development of medical relief, based on the system of western medicine. It received much more attention than the development of those preventive health measures which were collectively termed ‘public health activities’, which too derived from modern medicine.

*However, in colonial India too starvation figured as a public health issue, as in England.* The Director-General of the Indian Medical Service in the early 1930s argued that excessive reliance on medical intervention was ‘one-sided’ and ‘dangerous’. That ‘even if public health services were to achieve success in stamping out malaria, cholera, tuberculosis and other diseases, still there would be deaths from starvation if nothing was done to increase the production of food or restrict the growth of the population’ (cited in Kumar 2005).
This brings us to the important issue of the occurrence of famines in the colonial period and their impact on the nutrition, and the health of the Indian population. Zurbrigg’s analysis of malaria mortality in the Punjab plains over a 70-year period (1868-1941) brings out the impact of famine relief policy on the drop in malaria mortality rate after 1908. According to her the changes in the famine relief policy around 1910 ensured that relief provisions were available earlier and more frequently and hence a decrease in the frequency with which drought and/or floods proceeded to economic collapse and epidemic starvation. This sort of famine control appears to have had a marked impact on reducing malaria lethality (Zurbrigg 2001). In fact, the close link between famine and/or economic (agricultural) crisis and soaring malaria mortality was a frequent reference in the historical records of the pre-1910 colonial period. One of the leading malarialogists of the time, Christophers, concluded his investigation of the 1908 Punjab epidemic with the words “malaria only reaped the harvest prepared for it by famine (cited in Zurbrigg 2001). Most provincial sanitary commissioners throughout the 19th and early 20th century began their annual reports by quoting the price of staple food grains, followed by the wage rates, and then the state of the harvests. Prevailing economic conditions were thus seen as central to interpreting the data on vital statistics that were given in their report. Most famine inquiries of the late 19th century refer specifically to the selectively greater malaria mortality among the starving. The 1945 Commission on the Bengal famine observed that the starving succumbed far more readily to the disease in spite of lower parasite levels, and were also particularly unresponsive to medical treatment (cited in Zurbrigg 2001). Florence Nightingale also took up with the colonial administration the cause of the effect of famines on the health of the rural populations - although her main interest lay in sanitation and hygiene as a way of improving the health of the ‘natives’, still she raised the issue of the effect of repeated famines on farmers (Gourlay 2003).

This indicates that, as in England, in the Indian sub-continent too, linkages between ill-health and factors such as food availability, poverty, and urban living conditions, were being raised by certain sections of the colonial administration. However, public health here too was restricted to environmental hygiene, to sanitary and other technical/legal measures only. So the model adopted here was that of ‘assimilation and application of knowledge of medical science’ to public health in this country, as had happened in Great Britain and other industrialized Western countries. According to the Bhore Committee “The vast numbers of India’s sick presented a field so obviously demanding attention that majority of doctors in lay administration tended to regard provision for hospital facilities and attention to the sick of more importance than arrangement to meet the fundamental requirements of the community and the
individual in regard to environmental hygiene........Without these requirements being met the attempt to cure the sick of a continent, though embarked upon courageously, was doomed to failure" (Health Survey and Development Committee 1946b p 23).

Thus we see that by the first half of the twentieth century the view of public health as a matter of sanitation and hygiene, and as utilization of scientific knowledge for healthcare had become established in India also, as it had been in England. Similarly, 'western medicine' also became the established mode of providing medical care, and was also absorbed by the dominant Indian classes. Accordingly, medical education also gave priority to teaching of western medicine, and was supported by not only the colonial state, but also by indigenous private philanthropic organizations, as well as the Rockefeller Foundation. Related ideas that evolved in the West and measures that were adopted in England got 'imported' into India. Sanitation, hygiene and vaccination became the 'public health' measures, and the Factories Act was introduced to regulate industrial working conditions, and thereby to ensure health of the worker.

Various political groups participating in the nationalist movement against the British rulers had laid down plans in the 1940s for development of health services in the country, as part of their overall planning for the economic development of the country. The Indian National Congress, one of the major political parties in the nationalist struggle, set up the National Planning Committee in 1938, which set up a sub-committee on Health, known as Sokhey Committee. Three other such plans were the Gandhian Plan of Economic Development, the Bombay Plan of Economic Development, and the People’s Plan of Economic Development of the Indian Federation of Labour. Except for the Bombay Plan, the other three focused on agriculture and health of the rural people. The Bombay Plan focused on urban services for industrial growth and proposed to deal with rural problems through proper instructions and education, and well-organised propaganda. Interestingly, the system of medical and health care envisaged by all these plans was also based upon modern medicine, and along similar lines – namely that of a network of dispensaries for rural areas, maternal and child health centres, and hospitals for urban areas, to be staffed by trained doctors and nurses. It was not very different from that of the Bhore Committee set up by the colonial government. Some of the prominent Indian medical practitioners of those times, who also occupied leadership positions in the nationalist movement, and were influential members of the Bhore Committee as well, were inspired by the welfare state movement in the UK, and the socialized health services of the Soviet Union. The British government too set up the Health Survey and Development
Committee in 1944 to make (a) a broad survey of the existing position in regard to health conditions and health organization in British India; and (b) recommendations for future development. The need for such a survey had arisen from the need to make plans for postwar development in the health field. The colonial government considered that such development should be based on a comprehensive review of the health problem. The report of this Committee, popularly known as the Bhore Committee in four volumes, gives a picture of the state of public health and of the existing health organization in the country in the years preceding the second World War (namely around 1931-1941), and made detailed recommendations and measures for setting up a national health system in the country.

The Bhore Committee, chaired by Sir Joseph Bhore a leading member of the Indian Civil Service, comprised John Ryle and Janet Vaughan from Oxford, John Grant of the Rockefeller Foundation’s International Health Division, Henry Sigerist from the Johns Hopkins Medical School, Dr Raja a statistician from the All India Institute of Hygiene and Public Health, and Diwan Bahadur Dr Lakshamanaswamy Mudaliar the Vice Chancellor of Madras University. Thus the Committee was composed of civil servants and public health specialists from USA and Britain. According to Dr Sigerist, Grant played a crucial facilitating role in the Committee, and the best and the most progressive recommendations of the Committee were his (Amrith undated).

It is important to take note of the position of the Bhore Committee regarding the indigenous systems of medicine (Health Survey and Development Committee 1946d). According to the Committee,

“In considering the question of the place which the indigenous systems of medical treatment should occupy in any planned organization of medical relief and public health in the country, we are faced with certain difficulties. We realize the hold that these systems exercise not only over the illiterate masses but over considerable sections of the intelligentsia……”.

It acknowledges that these systems have played a part in the long distant past in influencing the developing of medicine and surgery in other countries of the world. However, it goes on to say,

“We are unfortunately not in a position to assess the real value of these systems as practiced today, as we have been unable to conduct such an investigation. We do not therefore
propose to venture into any discussion in regard to the place of these systems in organized State medical relief in this country...........

Yet, it states that the indigenous practitioners could not deal with public health, preventive medicine, obstetrics and gynaecology, or advanced surgery.

"We do, however, say quite definitely that there are certain aspects of health protection which, in our opinion can be secured wholly or at any rate, largely, only through the scientific system of medicine. Thus public health or preventive medicine, which must play an essential part in the future of medical organization, is not within the purview of the indigenous systems of medical treatment as they obtain at present. This is no way reflects upon these systems. It has, however, to be recognized that great improvements have taken place in the field of public health as the result of many discoveries of science, which are and can be implemented only through the scientific system of medicine, and through personnel trained in such a system...........It is necessary to prominently keep before our eyes the intimate relation between science and the advancement of medicine. ....... no system of medical treatment which is static in conception and practice, and does not keep pace with the discoveries and researches of scientific workers the world over, can hope to give the best available ministration to those who seek its aid. .......[Modern medicine] must be regarded as neither eastern nor western but as a corpus of scientific knowledge and practice belonging to the whole world and to which every country has made its contribution".

Thus the Bhore Committee clearly favoured the western medicine for medical relief, as also for public health activities. It also envisaged public health as part of medical organization. It is this Report, and not any of the others that had been made by the Indian nationalist groups, which became the basis for the health system in India after 1947.

3.2 Overall 'development' framework in India

As mentioned earlier on, exposure to English education in the colonial period had given rise to an educated, elite class of Indians trained in the English language, the modern sciences, including modern medicine. At the same time the nationalist movement had given rise to the notion of socio-economic self-reliance. In the early years of Independence efforts were made to reduce dependency on the developed countries and to strengthen local science and technology capacities. Former colonies such as India, sought to first restructure their leading economic sectors. Attention was given to create or reinforce domestic research potential.
Higher educational programmes in science, and institutes of engineering and technology were established, and science-related professions and the organizational strength of the national scientific community were reinforced. This science and technology oriented policy was systematically backed by import-substitution policies to protect home markets (such as tariff-barriers for import of technology and patent regimes), and promote a favourable environment for indigenous innovations and products. India was assisted in these efforts by international aid from various sources, and of various kinds. Several individual scholars and scientists were in-charge of science and technology decision-making bodies, and initiated research programs with a focus on science and technology for development. Such programmes led to countries such as India, Mexico and Brazil, to emerge as industrializing countries, albeit with limited success. There was relative success in absorption of technology in the agricultural and several other spheres of production, and in establishing a substantial scientific infrastructure and scientific communities across several parts of the country. In India these processes have also created new kinds of social inequalities or reinforced existing ones.

By the end of the 1970s there was a change, at least on paper, in the idea of science and technology for development. There was talk now of indigenous development focused on local capacities with greater attention to the integration of traditional and modern economic sector, as well as concern for the effects on the environment. This is popularly known as the 'appropriate technology' movement, with focus on small-scale industry and rural areas, and saw participation of non-governmental organizations, with the intellectual underpinnings provided by action oriented research groups. Another development was the emergence of a 'science technology and society studies (STSS)' community, and the institutionalization of science, technology and society studies, largely dealing with study of science and technology policy for development, and of the social institution of science and its organization in developing countries. Specific areas investigated were: international technology transfer, patterns of dependence and repatriation of wealth by MNCs through technology licensing and transfer, isolation of scientists in developing countries, brain drain and status of scientific communities here.

By the 1980s the situation began to change worldwide with the end of the Cold War and the emergence of the mantra of 'globalisation' and the 'global village'. While economic self-reliance, poverty-alleviation and building a strong welfare state shaped the planning process in the initial decades of independence, now the emphasis shifted to planning for economic growth. As far as technology was concerned, the import-substitution models and the indigenous
technology based models of development of the preceding years went out of fashion by the late 1980s. The new development paradigm that has replaced these is that of an 'export-based' one, involving developing 'novel' technological capabilities. These novel technologies being: telecommunications, micro-electronics, informatics, new materials and biotechnology. In this paradigm it is argued that countries such as India, China and Brazil have the scientific and technological infrastructure and skill potential needed to meet the challenges of new technologies, as long as they restructured their indigenous economic base.

3.3 Medical and Healthcare services in Post-Independent India

In the post-WW II period the newly independent states of Africa and Asia undertook a programme of planned economic transition to development, within a liberal-welfarist approach (Qadeer et al 2001). Within the health sector of the developing countries such as India the vision and goal was that of universal provision of curative, preventive and promotive health services by the state, by creating and extending primary healthcare infrastructure, especially in the rural areas where much of the population lived.

In India, the State has played the major role in the finance, provision and management of health care and services, with the Bhore Committee providing the foundations for the public healthcare services. Guided by recommendations of several committees from time to time, the Indian State has invested in healthcare infrastructure, in the education and training of personnel, as well as in medical research, and to some extent in production of drugs and pharmaceuticals. In this health system modern medicine, termed in India as western medicine or allopathic medicine, was adopted by the State as a conscious choice, from among a plurality of medical practices that existed in the pre-colonial and colonial period, and continues to occupy the universal/central position. Allopathy, ayurveda, homoeopathy, unani, siddha and several folk forms are different systems of medicine available in India. However, allopathy is the dominant system of medicine and gets maximum state support and resources. Such is the dominance that many practitioners of other systems of medicine also primarily practice allopathy, as revealed by national surveys and small-scale studies (Gangolli, Duggal and Shukla 2005). Medical education and medical services in India have always been oriented to standards of the industrialized countries of the west.

Although there had been an 'Indianization' of public health services in the early 20th century, the training and education of medical functionaries in allopathic medicine in the
colonial period ensured that its dominance continued after 1947. During the colonial period the early leaders in modern medicine, also prominent in nationalist politics, had called for the admission of indigenous practitioners, and for an inclusive medical registration system. However, in the course of the dispute over the formation of an all-India medical council, it became clear that international recognition of medical degrees by the General Medical Council in London depended on a very clear distinction between western doctors and the rest. By the mid-1930s many of these leaders withdrew their support for indigenous medicine and took up positions in the new Indian Medical Council, which excluded indigenous practitioners. As put by Arnold, 'the future of western medicine came to lie, not with the English colonizers, but with India's emerging elites, who took it up after 1914, as part of their own hegemonic project' (Arnold 1993, p ....). The adoption of the 'western' medicine by the Indian middle-classes and the training received by those who went to the West had created an elite class of medical practitioners. They reproduced those patterns of education and thinking, continued to maintain their professional links, and all this was only re-inforced and strengthened in the post-1947 period. Given that some of these medical practitioners had also been active in the nationalist politics, it was this system that got state patronage, as clearly enunciated by the Bhore Committee. State promotion and patronage for 'western' medicine continued after the colonial period, and also received support from various western institutions and foundations. Thus, while the hegemony of western medicine may have been initiated by the colonial State, it has been retained and extended by influential sections of the nationalist leadership and the medical profession after 1947. Since then the state and these elites took over the task of modernizing the country, through modern medicine, and as discussed by Baber, through modern science and technology (Baber 1998).

India received aid in the early years of Independence for the health sector from several institutions such as WHO and private foundations from the West, largely towards research and training. In the post-Independence period too India received grants from Rockefeller Foundation (RF) to varying institutions to aid research. Among these were the All India Institute of Medical Sciences, Delhi, Christian Medical College-Vellore and King George's Medical College, Lucknow. In addition, Rockefeller Foundation and Ford Foundation supported research fellowships offered by the Indian Council of Medical Research (ICMR), as well offered research fellowships abroad. Rockefeller supported over 250 fellows in medical subjects who completed their study programme between 1917 and 1968 – this included most of the prominent nurses and doctors in India during this period (cited in Jeffrey 1986). The combined outcome of all these actions was such that by the early 1970s the government was
trying to address the issue of the essentially urban orientation of medical education in India, which heavily relied on curative methods and sophisticated diagnostic aids.

In 1978 India became a signatory to the Declaration of Alma Ata on Primary Health Care, which in turn was a culmination of the failures of the vertical eradication programmes of the 1960s in many parts of the world, and the general disillusionment with modern medicine in the 1970s and its 'inability to address the needs of the developing countries'. The concepts of Primary Health Care that emerged in this period of the 1970s provided another opportunity to countries like India to put in place a system of basic health services (that had been envisaged in the earlier planning period), based on local needs and capacities (self-reliance), and to shift from use of highly sophisticated medical technology to less sophisticated or locally appropriate ones. However, this did not happen (Qadeer 1995). That the proposals of the Alma Ata were never seriously implemented is a well documented fact. On the one hand, the selective PHC approach promoted by international institutions was adopted, which brought in more technological interventions into the rural primary health care system in developing countries, specifically in areas of maternal and child health, and some infectious diseases. These were to be delivered through community health workers. On the other, medical education continued with its emphasis on specialization.

Medical education and training at all levels is largely through state owned or funded institutions at a highly subsidized cost. There are 165 recognized medical colleges in the country producing over 20,000 medical graduates every year; out of these 75 per cent are from public institutions. However, this output does not benefit the public health services, as 80 per cent of the graduates from public institutions either join the private hospitals in urban areas or go abroad. As of 2007 there were in all 6, 96,747 allopathic doctors, of whom only 11 % were in the government sector, the rest working in the private sector (computed from Government of India 2008). In case of non-allopathic doctors too over 90 per cent are in the private sector.

The State has also explicitly accommodated/promoted and protected private interests in the provision of health services. In fact the private sector can be considered to have used the public sector as a springboard for its growth and sustenance (Baru 1998). Although the provision of public health and medical care and education has been undertaken by the state, from the start manufacture of pharmaceuticals and medical equipment and instruments, and other hospital supplies have been left to private parties, both domestic and foreign.
Public health scholars and researchers writing on health services in India view the development of health services in four broad phases since 1950 (Duggal 2005; RituPriya 2005; Qadeer 2000). In the first phase, between 1950 to 1965 there was a period of growth at several levels of health services. Medical colleges with tertiary-level hospitals, advanced research institutions and Primary Health Centres (PHC) were set up fairly rapidly, while sub-centres at the village level lagged behind. Vertical disease control programmes grew while general health services received inadequate attention. Similarly, graduate medical education grew while training of nursing and other health personnel lagged behind. A significant number of institutions of indigenous medicine and homoeopathy were set up, but with nominal resources as compared to the allopathic institutions. In the second phase, from the 1966-1980, there was a growth of village level services with the institution of several village health worker schemes and attempts to re-orient medical education (ROME scheme) to rural conditions. There was also adoption of vertical disease programmes to provide quick solutions, which also found favour with international funding organizations. This shifted attention away from overall socio-economic development and development of general health services towards specific biomedical interventions. In a way this laid the basis for the transformation of public health into preventive medicine. For instance: the multi-purpose workers were forced to focus on malaria control and the family planning programmes. The third phase, beginning in the 1980s, saw a boom in the proliferation of healthcare institutions, especially at the primary level, both in the private and public sector. The visions also narrowed down further, even among the international health organizations, with the PHC approach enunciated in the Alma-Ata Declaration of 1978, being replaced by Selective PHC approach. As we have seen in an earlier section, this was the period when there was a shift in the Indian planning process and policies, from the overall vision of self-reliance. Policy documents since the 1980s started talking of the need to encourage and to support in various ways the presence of the private sector in medical care, in order to reduce government expenditure. Since the 1990s there has been growth of services at the secondary and tertiary levels. What was more significant was the increase in commercialization and corporatization of healthcare services at these levels.

At present ownership of healthcare facilities can be broadly classified as public and private. Public facilities include teaching hospitals, several tertiary level hospitals located in metropolitan areas, secondary level hospitals, first level referral hospitals (CHCs or rural hospitals), dispensaries, PHCs (primary health centers) and sub-centres, and health posts. There are also health facilities for select government occupational groups, like defense, railways, post and telegraph, mines, CGHS, and ESIC. The large metropolitan cities have a
few state run hospitals, depending on their population, including the teaching hospitals; these hospitals provide largely curative services, covering outpatient and inpatient services for primary, secondary and tertiary care based on use of 'high-tech'. In the rural areas there are rural hospitals, PHCs and SCs that provide various health services and outreach services. In contrast to the city and district hospitals, these rural institutions provide mainly services like disease control programmes, family planning and immunization services. Curative care in the rural health facilities is extremely lacking in spite of a very high demand for them. This demand is met either by the city hospitals or by the heterogeneous group of private practitioners – untrained or partially trained in one or the other systems, and the indigenous-faith- folk healers.

For various reasons – largely political and administrative - that have been analyzed in great detail by many public health researchers, scholars and activist-researchers, the goal envisioned in the post-Independence period for the health services in India has not been fully realized. Although India was a signatory to the 1978 Alma Ata Declaration on Primary Health Care, still the policies subsequently implemented have been far from what was envisioned (Qadeer et al 2001). There has been a large gap between policy-planning and actual implementation. The planning process itself has been top-down and highly centralized with little accountability, and dominated by the ‘techno-managerial model of healthcare’ (Shukla 2005 p 324). While there exists a substantial infrastructure, personnel, technology and production capacities in the public and private healthcare sector (as in the science and technology sector), they are riddled by several problems. To name a couple: lack of resources and personnel to run the primary level institutions and hence poor functioning and lack of access, and regional disparities, as far as the public health infrastructure is concerned; and a large, expanding unregulated and unaccountable private sector. The public health infrastructure, with a potential to provide primary health care, has been largely usurped by the family planning programme and some vertical disease programmes, which have strong political and administrative backing, (Qadeer 2000), and receive aid and assistance from the international development institutions, and most bilateral as well as UN agencies.

Availability of Medical Technology
We have already referred to the production of certain vaccines and sera in the country in the early 1900s. It can be gathered from the Bhore Committee that in the early years of the 20th century some important drugs, such as morphine, codeine, quinine, strychnine, were also being manufactured from locally available raw materials. It was felt that there was a promising future
before the drug manufacturing industry, although there was need for proper control if the trade was to be developed. Medical appliances such as surgical dressings, Plaster of Paris, artificial limbs, and dental cotton were being produced in large quantities. The surgical instruments industry had also developed enormously, although it was dependent on many imported raw materials. The scientific glassware industry was considered to be an important industry in connection with supply of medical equipment. At the outbreak of the Second World War no scientific glassware was being produced here, and no lab equipment was being made of neutral glass (Health Survey and Development Committee 1946e).

From the Bhore report it is evident that the hospitals were equipped with laboratories for pathological, microbiological and biochemical work, and also had x-ray equipment. Laboratory supplies were affected during the War, and medical colleges were run with shortage of various chemicals and appliances (Health Survey and Development Committee 1946e). Even otherwise there appears to have been a grave shortage of therapeutic substances and medical appliances - ´at some dispensaries even drugs and appliances, which should be in almost daily use, are often not to be had at all, or only in such limited quantities as to be paralyze the administration of effective medical aid. In many cases even when they are available the cost is so high as to prohibit or at least to gravely restrict the use of what may be an essential medical requisite´ (Health Survey and Development Committee 1946f p 448). While there was production of medicinal drugs and biological products, at Independence there appears to have been no production of medical appliances, like x-ray equipment.

The Committee recommended the appointment of a committee, largely technical, to examine the requirements of drugs and other medical requisites in this country, to specifically examine the following matters in this regard (Health Survey and Development Committee 1946f):

- What are the drugs and other medical requisites essential for general uses in this country?
- What practical steps should be taken to ensure their manufacture in this country in sufficient quantities, and their sale at a price which will make them available to all who need them?
- What are the circumstances which would justify the conclusion that the manufacture of any of these in the country is inadvisable?
- What should be the respective fields of the Government and of private enterprise in the manufacture of these requirements?
What aid and assistance should be given to private agencies in such cases and under what conditions?

What machinery should be established to develop research regarding drugs and other medical requisites and their production in India and to ensure continuity and co-ordination of such research?

What machinery should be set up to ensure a steady supply of trained research personnel?

In the Committee’s view it should be possible adequately to provide for these essential needs through a combination of private enterprise suitably assisted where necessary, and production by the State where this is found to be in the public interest. However, one member of the Committee felt that the production and distribution of drugs and other medical requisites should be undertaken by the State and should not be left to private enterprise. The Bhore Committee also recommended the setting up of a Committee to look into the matter of setting standards for medical institutions and equipment.

Since Independence (1947) medical technology has diffused into the country in a number of ways. Such as through medical education, research and missions; multinational corporate transactions; technical assistance projects sponsored by the WHO; and bilateral foreign aid programmes (Jeffrey 1988). Much of this technology has been channelized through the state into public institutions and public health programmes. A study of the extent to which a set of eight modern medical techniques, all of which required specific machinery and equipment, had been introduced in several less developed countries by 1977, showed that by that time all, except the CT scanner, had been introduced in India (Piachaud 1979). (Information on the CT scanner had not been specified by the respondents, who were Deans of leading medical colleges and/or ministries of health. In any case at that time the manufacturers of CT-scanners were focusing solely on the North American market, and the machine was still in the development phase). The remaining seven were: ultrasonic fetal examination, fiberoptic endoscopy, cardiac catheterization, renal dialysis, cobalt isotopes for radiotherapy, open heart surgery and laser beam therapy. In all the countries all these had been first introduced in teaching institutions, most of which were government financed. This indicates fairly rapid diffusion of medical technologies into the LDCs, considering that ultrasound equipment for gynaecological and fetal examination was developed only in the early 1970s. Given the fact that in the nineteen seventies there was not a significant private sector in the country, one can infer that these
technologies were acquired initially by, and concentrated in, government healthcare institutions.

3.4 1980s-1990s - Structural Adjustment Programmes (SAPs) and Health Sector Reforms

Meanwhile since the 1980s there has been a shift from the earlier objectives of universal health care and primary health care. Since then the health sector is undergoing several transformations and reorganization in the name of reforms. These reforms can be understood only in the light of developments in the overall national and international economies. The healthcare reforms need to be viewed as part of the wider global agenda of opening trade and creating markets in hitherto public services, of what is euphemistically referred to as globalization and creation of a ‘global village’ in popular parlance. This process has been discussed earlier on (see section 2.3).

One of the features of these economic reforms has been that the national economies are subjected to an increasingly competitive international economy, where the interests of multinational corporations take precedence and shape policy-making and practice in individual countries and across services and sectors (Renaud 1998, in Sen 2003 p 4 & 26). An accompanying feature has been that of loans to developing countries from international agencies such as the IMF and the World Bank. These loans were conditional upon cuts to public expenditure and a total overhaul of public sector provision (Sen 2003). Different countries across Africa, Latin America and Asia were affected at different periods and in varied measures. The first to be affected was Latin America in the late 1970s; followed by the African countries, and during the late 1980s and early 1990s, much of Asia. All underwent structural adjustment policies, which introduced changes in the health and other social sectors. During the 1980s the OECD countries also reassessed their commitment to public sector provision as part of an ideological shift from welfare to markets.

There are a lot of debates among policy-makers, researchers and activists and action-groups, over the necessity and consequences of these reforms, and hence these have been extensively documented and discussed. According to the advocates, globalization and restructuring of services will lead to much needed economic growth, investment, expansion, competition and internationalization of the division of labour, international scientific co-operation and development, all viewed as major benefits and as necessary for progress. All this will ultimately minimize the costs, including the social and human costs, of economic growth
and development. The inequality and exclusion engendered by the economic growth are considered as short-term problems.

However, contrary to this there is a lot of evidence on the real and actual effects of neo-liberal policies and accompanying health sector reforms throughout the world (Sen 2003 pp 26-27). To give one example: there has been an increase in inequalities due to decline in real incomes and concentration of incomes among rich households. Hence, on one hand the reforms have immensely benefited ruling social elites in the developing countries. On the other, they have had significant adverse consequences for large sections of populations, in terms of livelihoods and access to health and other services and hence for their health status (Qadeer et al 2001). Yet another aspect, not always visible, yet promoted as an advantage, is that in reality the competitive role of the developing countries is often restricted to the provision of cheap labour and low running costs for capital accumulation in healthcare sector (by providing several services listed earlier in the section), and to a lesser extent as consumers of globalised services such as healthcare, by the social elites here.

While public investments in the health sector have decreased since the adoption of the Structural Adjustment Programmes, on the other hand, the dominance of the private health sector is increasing. But absolutely no regulations or norms have been laid down for the huge private sector. The medical profession, by and large, pays only lip-service to self-regulation and ethics, if at all, and is not interested in an organized system of healthcare.

3.5 Characteristics of the Private Sector in India

Given the size and range of the private health sector in India this section examines the distinctive characteristics of this sector.

Government policies in the health sector have always been favourable for the growth of the private sector. There has been direct support in form of customs duty exemption/reduced duties on imported equipment, concessional loans, land at subsidized rates for construction of hospitals, etc. There has been indirect support, by accommodating private interests in the government healthcare sector for purchase of drugs, supplies and equipment, and allowing private practice by government hospital doctors. Over the years the private sector has grown as well as diversified its operations. While the individual private practitioner has been around since colonial times, the nature of private practice has gradually changed. While much of the
private medical care still consists of individual medical practitioners spread over rural and urban areas, since the seventies there has been growth of private institutions. There is now a huge private sector in delivery of health services. While existing data sources grossly underestimate number of private institutions, still they show that there has been a steady growth of private medical institutions. The share of private sector investment in total health infrastructure is also quite significant. The private health institutions are located more in urban and peri-urban areas, and more in some states than in others. Another aspect of privatization of health services is that a fairly large number of doctors employed in public hospitals also have private practice.

Health policy documents since the 1980s started talking of the need to encourage and to support in various ways the presence of the private sector in medical care, in order to reduce government expenditure. During late 1970s and 1980s incentives were given for private investments in health care, by offering concessions for import of high-tech equipment and to non-resident Indians to invest in industry and in the welfare sector. The private sector is now a mix of individual practitioners, big and small nursing homes and hospitals, single and multi-specialty clinics, charitable and large corporate hospitals, as well diagnostic laboratories offering imaging and other diagnostic services.

Through the 1990s there has been growth of services at the secondary and tertiary levels (Baru 2001). What is more significant is the increase in corporatization of healthcare services at these levels. For instance, the JK group manages hospitals in Kanpur, Kota and Jaipur. In 1988 the Escorts group started the Escorts Heart Institute, a specialist hospital-cum-research centre for heart diseases, established with an outlay of Rs 25 crores. Of this Rs 5 crore was spent on importing equipment from the US, UK and Germany. The idea was floated by an NRI and subsequently specialists from the US have associated themselves either as consultants or regular employees. There are several other corporate hospitals and other specialized centres across the country, which have been promoted as a collaborative effort between businesspeople and NRI doctors. Recently, the Indian American community and business leaders in Chicago raised $300,000 to set up an ultra-modern burns centre at a hospital in Ahmedabad. The centre was set up in association with American Association of Physicians of Indian Origin (Economic Times September 1 2003). The Apollo group started with a private limited hospital in Chennai in the 1980s; since then it has spread and can be considered an Indian multinational health care company. In 2002 it had an annual turnover of Rs 500 crores, with plans to increase it to Rs 1000 crores. According to its chairman the challenge was to reach the Rs 10,000 crore mark
(The Statesman, 11 November 2002, New Delhi). It planned to move away from building hospitals to managing them for others, and to set up life-style management centers. The Apollo Hospitals Group currently owns 16 hospitals, 15 clinics, manages 19 hospitals and 6 clinics, runs pharmacies in 21 locations, has 9 group companies, such as the Indian Hospitals Corporation, and an education and research foundation. Some of the older charitable hospitals are also becoming commercial. Or they are being taken over by corporate groups, such as Fortis and Max. Similarly, Max Medcentre, a collaboration of Max HealthCare with Harvard Medical Institutions of USA, is into setting up primary care clinics and diagnostic and day-care centres in the National Capital Region (NCR) of Delhi. Between August 1991 and 1997 the Foreign Investment Promotion Board (FIPB) approved foreign direct investment (FDI) proposals worth about Rs 3600 million (US $ 100 mn) in the healthcare sector in India. The major chunk of this was in Delhi – for a super-specialty hospital by the Indraprastha Corporation and for setting up an advanced diagnostic centre. The other cities included Guntur in AP, Bhubaneshwar, Calcutta and Bangalore, and were focused on diagnostic centres. Some of the companies that had entered the health sector included domestic and foreign companies like CDR, Wockhardt, Medinova, Escorts, Duncan, Mediciti, Kamineni, Parkway, Jardine, and Nicholas and Sedgwick (Purohit 2001).

Between 1984-1986 over 60 diagnostic centres were set up in different parts of the country, with an investment of over Rs 200 crores in sophisticated equipment (Jesani and Anantharam 1993, cited in Nandraj et al 2001). There is increasing corporate presence in diagnostic services too. For instance: Specialty-Ranbaxy Limited is a joint venture between Specialty Labs Incorporated and Ranbaxy. It conducts diagnostic tests, clinical trial service for pharmaceutical and related industries, and corporate health checks. There is also a chain of Dr. Lal's Pathological Labs in the NCR.

There are some novel additions to this growing 'healthcare industry'. Namely, firms offering consultancy and/or managerial and support services related to provision and financing of medical services. Ventures such as the Bangalore-based MedicaSynergie offer planning, executing, commissioning and management of hospitals or modernisation/upgradation of existing ones, consultancy in these areas and tele-medicine services. Medical transcription, billing and documentation of clinical and administrative records, processing insurance claims are healthcare related services being offered by some. At present these services are being undertaken largely for US hospitals (business process outsourcing). An example is the association of Wipro Health Science with Manipal Education and Medical Group, to provide
'clinical support' to four large US hospitals. Namely, X-ray, ultrasound and other images will be sent to the centre to be established in Bangalore, where they will be read and the diagnoses sent back to the respective hospitals. Wipro hired the services of radiologists from the Manipal Group of Hospitals and medical colleges. The Manipal Group was to provide training and staffing (The Times of India 8 December 2002 Mumbai). Similarly, another two-person US-trained radiology service, Teleradiology Solutions, Bangalore, is reported to be utilized by 40 US hospitals (The Hindu 5th April 2005). The genesis of such services is explained as follows: with shortage of US radiologists and the practice of technologically 'advanced' medicine that prompts sophisticated scans for many ailments, the US radiological services are being outsourced to the other side of the globe. The night time emergencies in the US are being read and interpreted in places where it is daytime, ostensibly taking care of shortage of night-time-on-call radiologists. Radiologists in Australia, India and Lebanon are reading scans of US patients (The Hindu 5th April 2005).

The privatization of insurance, including health insurance is another major development in the 1990s, which has enthused the corporate sector. Several large international health care providers and insurance companies were entering into arrangements with domestic companies. They were investing in hospitals, conducting market surveys and planning epidemiological mappings of the Indian population (Mahal 2000).

The prime objective/thrust of this private healthcare industry, as articulated by the corporate hospitals like Apollo, is to cater to the 'world market'. The Confederation of Indian Industry (CII) has a healthcare sector to serve these interests. They have floated the notion of 'health tourism', namely, to attract patients from other countries, especially those where healthcare costs are increasing, to combine tourism with medical services, and to 'market' the medical competence and services available in the country in a profitable manner and earn foreign exchange. For example: A delegation of representatives from 12 private sector hospitals and medical centres 'showcased' the country's strengths in the corporate medical-services sector to healthcare providers in Singapore, Indonesia and Malaysia (The Hindu August 21 2004). In outlining India's advances in healthcare, they focused on the world-class professional skills of Indian doctors and other medical personnel, build-up of state-of-the-art facilities and hospital management practices, and the overall cost-effective healthcare delivery. The government itself was promoting this concept of 'making available quality medical care at competitive prices and to link it with the tourism sector' (The Hindu August 22 2004).
There is a strong tendency and interest among these parties to acquire the 'latest' and to have 'world class health services', as well as to provide only certain kinds of specialized treatment, which depends on use of high-tech equipment. On grounds of getting 'valuable foreign exchange' or of providing humanitarian service, they then make claims for concessions and preferential treatment by the government. While they get several kinds of concessions, what is seen is that these are misused for the sole purpose of making profits, and there is no concern to abide by the conditionalities (see following section on private hospitals in Delhi).

Another indirect, yet important way of promoting the private sector in healthcare, one fraught with serious implications for the patients is the lack of any kind of regulations for the private sector, hence condoning a free-for-all situation. Given this there are varying estimates of the extent and utilization of the private sector. There are no standards or checks regarding sanitation, hygiene, minimum facilities, costs and mal-practices as far as private health facilities. There is no audit of their activities and no information on the costs and quality of services provided by them, except for anecdotal accounts. These problems are illustrated by the following case study of corporate and big private hospitals in Delhi.

The Behaviour and Performance of the Corporate and other Private Hospitals – Case of Delhi

In 2000 the Health and Family Welfare Department of the Government of National Capital Territory (NCT) of Delhi constituted a 10-member High Level Committee under the chairpersonship of Justice A.S. Qureshi, to review the existing free treatment facilities extended by the charitable and other private hospitals that had been allotted land on concessional terms/rates by the government. This Committee Report, its proceedings and its findings give an idea of the context of the enquiry. More importantly, it clearly documents the greed, corruption and mismanagement of private and corporate hospitals in Delhi, their indifference and resistance to any monitoring and regulation, and the role of the government in condoning and conniving with these activities and attitude. In the following section excerpts from the Report are reproduced, which speak for themselves (Qureshi Committee Report 2001).

"The task assigned to the Committee is important and challenging........ In view of the fact that there is quite a lot of discontent and criticism among the people regarding the working of hospitals and nursing homes in Delhi, there should have been a thorough and wide ranging enquiry ordered to cover all aspects of functioning of hospital and nursing homes, including mismanagement, misappropriations, overcharging, siphoning out into the open market.
medicines meant for poor patients, rude and insulting behaviour with poor people and a whole lot of wrong things done there. But the Government of NCT of Delhi, in its wisdom, ordered this enquiry with narrow terms of reference. There are public interest litigation writ petitions filed in the High Court of Delhi against some hospitals. It may have been feared that a comprehensive and wide ranging enquiry may open a Pandora’s Box, from which too many wrongful actions, inconvenient nexuses and ugly situations maybe unearthed and maybe difficult to handle. But in the long run the policy of cover-up, connivance or negligence would be more harmful, because a problem not tackled in time may become very difficult if not insoluble. just like a wound, if allowed to fester for long, it may become gangrenous and incurable”.

According to the Committee ‘this could have been taken as an opportunity to find out illegalities, irregularities, improprieties and other defects in the working of hospitals and nursing homes in Delhi. They are too many and of big magnitude. The government-run hospitals also need to be inquired into, to make them render better and meaningful service to the poor. There is a lot of mismanagement, misappropriations, bungling etc, going on into those hospitals also (p 83).

The Committee sent a comprehensive questionnaire to 450 hospitals and nursing homes in all to elicit information and gather material for use as a database. There was resistance and refusal by the managements of most hospitals. Some complied reluctantly with the requirements and sent replies to the questionnaires as it suited them, disclosing some of the facts and withholding what they found inconvenient. The management of the Moolchand Hospital persisted till the very last in their refusal to reply or send the documents asked for. Only 80 out of the 450 hospitals responded to the second request to return the completed questionnaires. As the Report says ‘some who have been allotted government land had not bothered to even reply to the questionnaire in a spirit of open defiance’. The hospital managements admitted that there was no full compliance with the stipulation of free treatment to poor patients. According to them it was not possible to provide free services to 25 per cent of indoor patients; it was financially not viable.

From among the charitable hospitals that had been allotted land on concessional rates, four were dealt with separately, because of their special circumstances. They were: Indraprastha Apollo, MoolChand KhairatiRam (MCKR), Jessa Ram and B.L.Kapoor. The material on record showed that they had violated the original purpose for which the land was
allotted to them. Originally, the last three hospitals were genuinely charitable rendering free service. Later on they were on sale to big investors who wanted to convert them into super specialty hospitals in the name of upgrading services. There has been persistent violation of the expressed and implied terms on which the land was allotted. These violations would justify the cancellation of the allotment.

The Indraprastha Apollo Hospital, commissioned in 1996, was allotted 15 acres of prime land in South Delhi by the Delhi Government in 1988, for a token rent of Re 1 per annum. The Delhi government holds 26 per cent of the equity shares amounting to Rs 23 crores; it has given 15 acres of prime land in Delhi purchased from the DDA at an approximate cost of Rs 4 crores, and has been leased to the Company for 30 years. Over and above this, the Delhi government has invested nearly Rs 15 crores on the construction of the building. It was stipulated that one third of the total number of beds would be reserved for free treatment to the poor and deserving patients. This stipulation has never been fulfilled. Only a very small number – an average of 20 beds at any given time – was used by the so-called free patients. The main reason for this non-use is that the hospital insists that the free bed patients must pay for medicines and medical consumables, which can run into thousands or even lakhs of rupees. The government has four nominees on the Board of Directors of the public limited company (Indraprastha Medical Corporation Limited - IMCL), including its chief secretary and three other high officials. They are rendered ineffective and are not able to get even the legally valid and constructive proposals approved by the Board on the question of free treatment to the poor. They are out-voted by other Directors, who have made common cause to defeat any attempt to provide a truly free treatment to genuinely poor patients. The dominant profit motive of the company has made other Directors totally indifferent and callous regarding free treatment to the poor in flagrant violation of the terms and conditions of the aforesaid agreement and lease deed. The public limited company has described itself as 'purely commercial'. Therefore, profit motive is inherent in its activities, which is quite understandable. But the profit motive should not be in defiant violation of the firm commitment in respect of free treatment to the poor.

The incorporation of the IMCL and the establishment of the Apollo Hospital has so far been a bad investment for the Delhi government. The only perceivable achievement is the setting up of state-of-the-art super specialty hospital in Delhi for those who can afford to pay for its services, which is beyond most citizens of Delhi. The position of the government is that of a person who has invested large amounts in cash and kind to buy an expensive cow, of which it is holding the horns, while other are milking it and the government is watching it helplessly.
The government has to find a solution to this intolerable situation and salvage its honour, investment and commitment to the poor, needy and deserving patients. According to the Report:

“In principle, there can be no objection to upgrading medical services to satisfy the ego of those who can afford it. Even over-charging of patients to some extent under various pretexts, may be permissible. But such super specialty hospitals with five star luxury rooms should be established on privately purchased and privately owned land, and not on government lands which are meant for free charitable hospitals. The super specialty hospitals are essentially commercial ventures. They should be permitted to be run only on commercial lines. They are not entitled to get special concessions meant for charitable hospitals, which means free treatment hospitals primarily meant for poor patient. for those who cannot afford the exorbitant charges of upgraded specialty or multi-specialty hospitals. Therefore commercially run hospitals should be built on commercially purchased and private land. These four hospitals are not charitable; they are big commercial enterprises. Therefore, their allotments, on the basis of being charitable, need to be cancelled immediately”.

The Report concludes, ‘The existing free treatment facilities are inadequate and erratic. Only few give reasonably good service; most of them give scanty free service, half-heartedly. Some of them brazenly deny their liability to render any free service to the poor and needy….. Almost all hospitals except a few have contravened the terms and conditions of allotment’.

Summing up
The origins of the present medical care and public health system in India, based on modern medicine, can be traced to the colonial period, and since then has been an outcome of several kinds of forces and interests - national and international. The present scenario in India can be summarized as follows.

India has one of the largest private healthcare sectors in the world, with over 80 per cent of out-patient care being self-financed. Rural areas mostly have preventive and promotive services like family planning and immunization, provided by the public health institutions, and the curative component is woefully inadequate. The private sector has a virtual monopoly over out-patient curative services in both rural and urban areas, and over half of hospital care. A very significant and worrisome aspect of private care is that a certain proportion (estimated to
be large) of the private providers are not qualified to provide modern healthcare, because they are either trained in other systems (ayurveda, siddha, unani or homoeopathy), or worse still, do not have any training at all. These are the providers from whom the poor largely seek treatment in times of need. The healthcare market in India is based on a supply-induced demand, and is reported to be growing, especially as far as uses of new technologies are concerned. The cost of such care is also increasing. Meanwhile the corporate sector is gradually making inroads into the health sector. Thus, there is a large, unregulated, expensive and dominant private sector providing largely curative services of inadequate quality, on one hand (Baru et al 2000, Baru 2001). On the other, an inadequately resourced, selectively focused and shrinking public health sector carrying the burden of preventive services along with that of curative services. The private health sector, especially the allopathic segment, constitutes a very strong lobby. There is practically no regulation of this sector, and its quality has never been adequately established in comparison to the public health services. The medical councils of the various systems perform only the jobs of registering qualified doctors and issuing them the license to practice. There is no monitoring, continuing education, price regulation, etc., either by the councils, or by the government.

Intrinsic to this scenario is a major transformation over the past two-and-half decades, in that provision of healthcare is now viewed as a commodity that can be marketed. The ruling paradigm in India today is that of 'health care as commodity /health care as safety net' (Shukla 2005 p 325; Iriart et al 2001). In this paradigm people should generally purchase healthcare as a commodity (mostly from the private sector providers). The role of the state is to provide only minimal preventive services and some elementary healthcare to the poorest sections that may not be able to afford to purchase healthcare. Within this paradigm, what dominates is that of commoditization of healthcare; the safety net relates only to certain preventive services, (such as immunization, surveillance) and services for the poorest segments. Profit-driven healthcare, which is more often than not irrational and exploitative, is the real face of liberalization and reforms in the health sector, while the safety net is the mask, the so-called 'human face'. This dominant view is being 'constructed', by technical experts, in the name of 'neutrality', as technical arguments concerning efficiency and cost-reduction and macro-economic considerations, and is being imposed by national and international funding and health agencies.

These developments have led to changes in mode of delivery of health care, leading to involvement of predominantly commercial interests in delivery of health care. Another prominent feature accompanying these changes is the promotion and increased visibility of
certain kinds of medical technologies. They are related to and dependent on availability of
certain kinds of equipment-embodied technologies. Yet, unlike the pharmaceuticals sector, the
analysis of medical technology and medical equipment sectors have received little, if any,
attention in the Indian context.

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systematic social scientific inquiry has scarcely done justice to the complexities of modern technology. And if the theoretical modes with which social scientists try to understand technological change are crude, those employed by politicians and planners are cruder still by far. Because we do not understand the processes by which technological visions take shape, we have little sense of what the real consequences of backing an innovation project might be.

- Stuart Blume (1992)

The triviality that threatens a strictly descriptive, empirical approach to such humanly significant technical phenomena, such as experimentation on human subjects, nuclear power, or the development of the automobile, can be avoided without falling into the opposite error of a priori theorizing. The alternative - global condemnation, narrow empiricism - is not exhaustive.

How can one expect to understand modernity without an adequate account of the technological developments that make it possible, and how can one study specific technologies without a theory of the larger society in which they develop?

- Andrew Feenberg (2003)

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1 In: Insight and Industry: On the Dynamics of Technological Change in Medicine, The MIT Press, Massachusetts.