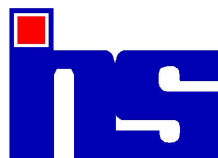


Social Evolution of hospitals. How is it relevent for health policy?

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Social evolution of hospitals. How is it relevant for health policy?

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Health policy studies and various declarations of health policy have so far treated hospitals as a single entity. Policy prescriptions treating hospitals as a single entity runs the risk of over generalisation and development of stereotyped perceptions. Recognition of the fact that there are different kinds of hospitals will have allocative and managerial implications. The purpose of this paper is to highlight, with the help of a study of the history of hospitals, the fact that there are indeed different kind of hospitals. I have first brought together different perceptions about hospitals. Appearance of hospital like institutions in ancient civilisations of Greece; Rome, India, and China are then described. I have dwelt upon development of various type of hospitals like the charity hospital, civic hospital, teaching hospital etc. Mainly in Europe and the Arab world. Development of the present day hospitals in India is then described. This would help understand the linkages of present day hospitals in a developing country like India with the various streams of hospital elsewhere in the world. The next two sections are devoted to contributions of nursing and medical technology. This paper does not give new information on history of hospitals. With the help of existing literature on history of hospitals and professions associated with it, the paper seeks to highlight the evolution of different type of hospitals as social and technological institutions. Circumstances leading to setting up of hospitals in different societies at different times have been described to get an insight into the primary motivations for setting up of these institutions. A large part of the paper is devoted to development of hospitals in Europe and America because the characteristics of most modern day hospitals can be traced to the evolution of hospitals in these continents.

What is a hospital?

Hospitals have been perceived, most commonly as centres of institutionalised care of patients. Doctors and nurses are the most prominent and visible components of a hospital. A patient in a hospital, primarily benefits from the services rendered by the doctor and the nurse. Does it mean that if one could have the doctors, nurses and other paramedical people to visit one's home, the

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resultant service can be a substitute to hospital service? In fact there was a time when this was the most preferred practice and considered to be the only sensible way to treat sickness. Why did the hospitals grow then? The hospitals grew to such an extent and have assumed so much of the management of sick that the need for domiciliary treatment and short stay hospital has now to be emphasised again!

Though the term “Hospital” is readily recognised by people irrespective of their language and level of literacy, one wonders what it means to different people? The folk (Little tradition) concept of a hospital can understandably vary from place to place, on the knowledge. What is more important is whether health policy analysts, economists and planners share an understanding to what is a hospital? How is a hospital different from the clinic of a doctor, or say a nurse on call? How is it different from a nursing home? Is it possible to compare certain hospitals with a hotel? What are the links of a Dharmshala, Choultry, Satram, Almshouse or Charity home with the hospital? On a different plane, it is relevant to understand how is a hospital different from a Primary Health Centre or a Sub Centre? To what extent is a hospital “doctors’ institution” meant to enable the medical profession to practice? Is it an institution for marketing of biomedical technology? Do people have any business in it? Is it organised to enable doctors to work or to provide a service to the society?

Sigerist (1960) opined that society and medicine determine the developmental history of the hospital system.

Croog and Steeg have reviewed some of the major characteristics of hospital as:

1. Hospital is a care and treatment giving organisation.
2. It processes individual people rather than some uniform and non reactive production.
3. Demand for care tend to be emergency in nature and non deferrable.
4. Provision of service is commonly expected to take priority over consideration of cost or efficiency.
5. It operates with the mandate of the community.

On the other hand hospitals have been viewed by many as ivory towers of medical technology. According to Debabar Banerjee, “hospitals are the most visible symbols and also the most important element of western medicine. They have most dominant influence on the entire

“culture” of the western system of medicine through their influence on the education and training of physicians, and other health workers, through socialisation of these workers into the “culture” of various kinds of hospitals, and by their dominant influence on the growth and direction of medical knowledge through research conducted within hospitals.” Benerjee goes on to add that “the members of a community perceive a hospital in two different ways; (a) as a source of liberation from suffering due to ailments of various kinds, (b) as an awe inspiring, forbidding, mystifying and a culturally alien institution.

Parks have summarised that “the purpose of a hospital is to make sick people well. It is based on precisely defined knowledge, techniques and procedures. The criticism leveled against the hospital is that (a) it exists in splendid isolation in the community, acquiring the euphemism, “ an ivory tower of disease”, (b) it absorbs the vast proportion of health budget and resources and returns few benefits, (c) its procedures and styles are inflexible, (d) it overlooks the cultural aspects of illness, (e) treating the disease without treating the patient, (f) the treatment is expensive etc.

These sentiments contributed to denouncement of hospitals and adoption of the primary health care approach by WHO (1978). But hospitals continued to exist and the need for new hospitals, in developing countries continued to persist. Thus seven years after adoption of the PHC approach at Alma Ata, Who appointed an expert committee to define role of hospitals at the first referral level (WHO 1985). Since then the role of hospitals in supporting the primary level health institutions and acting as a resource centre for them has been emphasised. Most of the policy documents, however, assume that all hospitals constitute a single tier or level in a hierarchical health care delivery system. It is significant to note that it was the very, large mostly teaching, hospital which provided the anti-hospital sentiments of the seventies. In the eighties hospitals were sought to be rehabilitated through the small first referral hospitals.

Evidently there is wide disparity in understanding of the hospital as an institution. This raises a doubt if all hospitals are similar institutions or are they a loose grouping of different types of institutions? Hence the need for historical study of appearance, growth and developing of hospitals in different societies.

Appearance of different type of hospitals in Greece, Rome, India & China.

The word hospital came into use gradually. It is derived from the Latin *hospitium*, meaning a guest house (Skinner, 1949). The place in which the guest was received was the *hospitium* and the adjective *hospitals* gave rise to the noun *hospital*. The words *hospital*, *hospice*, *host*, and *hotel* all have the same origin but now have different meanings. In early Greek and Roman civilisation, the temples of god were also used as hospitals (Mac Eachern et al. 1957). The Greek temples were forerunners of the modern hospital since they provided refuge for the sick. One of these sanctuaries dedicated to Aesculapius, the Greek god of medicine, is said to have existed as early as 1134 BC at Titane. The Aesculapia at Epidaurus, established a few centuries later used to house the sick and provide treatment. In a similar Aesculapia at Kos, Hippocrates (460-379 BC) practiced medicine, as a result of which the aesculapia assumed more and more the real nature of hospitals. There was another kind of hospital in Greece called the *iatreia*. This started as a waiting room or physicians office but developed into a type of private hospital. Some of the present day nursing homes in India can be considered an equivalent of the *iatreia*. The Romans had military hospitals called *Valetudinaria*. Wealthy Romans also had *valetudinaria* for treatment of their slaves. The most important contribution of Romans to development of hospitals was their aqueducts and sewage systems (Bulloughs 1964). Prince Macha built a hospital in Ireland in 300 B.C. called *Bruin Berg* or the house of sorrow, for the less fortunate members of the clan (Dolan 1958).

Hospitals and dispensaries were first organised in India during the Buddhist era (Seal 1971). Buddhist literature, particularly *Mahavamsa*, mentioned that during King Ashoka's regime the system for caring of the sick, both men and cattle, had been brought into practice everywhere. Ashoka is reported to have encouraged import of leading herbs, not available locally and planted them near such hospitals. He had employed medical men to give treatment. Kautilya mentions about hospitals in India in the 4th Century B.C. The hospitals were built near the fort and used to house the sick, afflicted helpless pilgrims, ascetics, labourers and also persons suffering from hunger, thirst, deformity and disease. Seven hundred years after, Fa-Hien a Chinese traveler visited India (376 - 414 A.D.) and found the hospital system of Ashoka in full activity (Seal 1971). The nobles and the landholders had founded hospitals in every city and financed the operational expenses as well. These hospitals housed the sick as well as the poor, the destitute and the cripples. Physicians were appointed to examine the patients and prescribe diet, medicines

and everything which may contribute to their benefit. Discharge of those cured was at their own convenience. In the year 648 A.D. Another Chinese Pilgrim, Hiuen-tsang visited India and found the country abounding with hospitals or “houses for doing good”. These houses entertained widows and orphans and distributed food, drink and medicine to the poor and the sick. Hospitality was carried out in the full sense of the term making guests of “the poor, lame and blind” and who could give no recompense, as well as of the sick and injured that needed a physician. These hospitals were the outcome of social and religious ideology, the Buddhist compassion. Not only the sick but the poor and sick also got services at these hospitals (Broekington, 1967). Thus they were simultaneously social security institutions and halls of healing founded by charity. Dolan (1958) observed that very little mention is made of the counterpart of hospital in ancient China. Halls of healing are reported to have been founded around 6th Century B.C. One of the possible explanations for non development of hospitals could be that China had a tradition of strong family ties and even the poorest sick were cared for in their homes.

Development of the charity and the civic hospital.

In Europe with the advent of Christianity the concept of charity became dominant. One of the important charities was care of the sick (Bulloughs 1964). First there was the diaconia or rooms in churches and private houses meant to house the poor. It was a sort of combination out-patient and welfare station managed by the deacons. With the edict of Milan in 313 A.D., Christianity became a legal religion and the arrangements for care of the sick became more formal. Though in 335 A.D., a decree of Constantine closed the Roman valetudinaria and Greek aesculapia, they were reopened later as Christian hospitals. The bishops used to supervise the hospital along with other charitable activity. Then the institution of “Xenodochium” or the fully dedicated home for stranger developed. Earlier the Greeks also had xenodochia in Athens and other cities, which acted as a municipal inn or hostel for strangers of every kind and degree, especially the sick and the poor (Nutting & Dock 1907). The Xenodochium had within itself rooms for the pilgrim, home for the destitute and orphans (Bulloughs 1964). It has wards or separate buildings for the sick. Each diocese was supposed to maintain a xendonochium. By sixth century, the xeodochia were fully developed and were many. Quite naturally a majority of the poor and destitute were also sick, as they were vulnerable to disease. Thus the hospitals finally grew out of Xenodochia, to house the sick poor (Nutting & Dock 1907). Nutting and Dock observed that “Hospitals, as a

building or set of buildings devoted entirely to the care of the sick only, did not become a separate entity much before the twelfth century, but long remained one of the many divisions of the all embracing Xendochia". The early hospitals were not for all the sick but for those who could not or would not be cared for in their own homes. They could be the poor and the destitute, the orphan and abandoned children, traveler or pilgrim, the elderly or the plague stricken. The well to do were cared for in their home (Bulloughs 1964). In France, there have been institutions for care of the sick from the sixth century, under the name Hotel Dieu i.e. God's House or Hotel (Nutting & Dock 1907). Hotel Dieu of Lyons was opened in 542. The Hotel dieu of Paris was found in 651, and although built on new sites at different times, has given continuous service since then. It was a small shelter connected with the little parish church of St. Christopher and meant for homeless and afflicted people. Thus these houses of God were originally xenodochia or almshouses, receiving the needy, the infirm and the sick of every kind and class.

With the development of monasteries from the late fourth century onwards, the care of the sick gradually passed over to them. One of the Benedictine rules was that the care of the sick is to be placed before and above every other duty. Pope Gregory (590-604) requested that the monks and nuns supervise the hospitals. From thereon monasteries became more important in care of the sick. For this purpose, the monasteries had the infirmary. Most of the monastery St. Gal in 820 AD. The plan included separate ward for serious cases, a pharmacy, and houses for physicians (Mary Risley, 1962). The Salerno school may have had its origin in a hospital founded in the town towards end of seventh century by the Benedictines. On the other hand monastic nursing and hospital founding orders developed out of the desire of some dedicated people to care for the sick and to set up hospitals, naturally to care for the sick on a mass scale. In the middle of eleventh century, a group of merchants from the Italian city of Amalfi secured permission of the Caliph of Egypt to build a hospital, apart from a church and monastery, at Jerusalem for use of pilgrims to the holy land (Bulloughs 1964). The actual founder of the hospital was a monk, Brother Gerard, who was in charge of the institution in 1099 when Jerusalem was captured by French crusaders. A separate hospital order was established in 1113 to run the hospital. Though the order was officially chartered by Pope as the knights of St. John, it was more popularly known as the Hospitallers. The Hospitallers established or managed hospitals at Acre (Syria), Cyprus, Rhodes. Malta and other parts of Europe. The Hospitallers were active in Malta until 1798. At around the

same time, the sisters of the order of St. John appeared at Jerusalem (Bulloughs 1964). They set up the St. Mary Magdalene hospital in Jerusalem and some more in other European cities.

In eastern Europe, large hospitals developed quite consistently and in an uninterrupted manner. Towards the end of eleventh century (1096), the crusaders from west Europe came across these institutions. The order of the hospital brothers of ST. Anthony was set up in 1095. In England, many convents had lodgings within their premises to house the sick poor. All monasteries and nunneries and an infirmary, where the sick of their order and probably from the local population could be cared for (Poynter 1964). The first hospitals in England date from the 10th century. The hospital of St. Peter (subsequently named St. Leonard) was established by Athelstane in 936 A.D. At York. This was an establishment for the poor with special provision for lepers. The St. Bartholomew's hospital was founded in 1123 at Smithfield, London. It was to receive poor and diseased persons, until they got well, and pregnant women until the birth of the children (Nutting & Dock 1907). St. Thomas hospital of London was established in 1213 A.D. It became obvious to the ecclesiastical authorities towards the end of thirteenth century that the purely religious side of the priorities must be separated from their infirmary wings, which were now becoming specialised institutions for the care of the sick. As early as 1200, the governance of St. Thomas and St. York became vested in a Master who although subject to the overall authority of the prior, appears to have been largely autonomous (Bulloughs 1964). The infirmer was not a doctor, but was one of the obedientiaries of the monastery whose task was an administrative one. The first mention of a doctor attending on the westminster abbey infirmary is found in the infirmers roll for 1297/8. In 1320, a full time doctor was appointed, though the practice of securing the services of doctors, when required, on payment of fees, continued simultaneously. Until after the sixteenth century, the word hospital or "maison dieu" continued to mean a place similar to an almshouse and not solely for the medical treatment of the sick. In 1540, both St. Thomas and St. Raults were closed under King Henry VIII's orders. They were taken over by the city council in 1547 at their request and with the King's approval. The voluntary hospital movement of the eighteenth century in England is generally regarded as a spontaneous expression of popular charity.

By about the tenth century the glory of monasteries started declining. The state and municipal authorities were yet to realise their role and responsibility towards running of hospitals and provision of health care service. However socially felt need to have hospitals for care of the sick

got expressed through some secular orders organised for giving nursing service and/or running of hospitals. Around 1180 Guy de Montpellier established at Montpellier a hospital and a nursing fraternity called the brotherhood of the Santo Spirito. At the same site an old hospital existed earlier. The Montpellier hospital was very well managed and became very famous. Being impressed by the good management of this hospital, Pope called Guy to Rome and entrusted the nursing management of the hospital Santo Spirito in Rome. The Santo Spirito had been established in the eighth century. The order of Santo Spirito otherwise known as the order of the Holy Ghost, was very closely associated with the rise and development of general hospitals. They established many hospitals through out Europe. They were particularly many in Germany and Switzerland, and continued to retain their vigorousness for a larger period. Around 1184 Lambert le Begue established at Liege (Belgium), the first Beguinage. Beguinages were a community of Sister's and people who lived a life of simplicity and charity, while in the Beguinage: From out of their communal income, Beguinages build hospitals, which was considered the most important part of their communal property. The hospitals had both paying patients and free patients. Income from the paying patients was utilised for improvement of communal Services. The Beguines established many hospitals in Belgium, Germany, Switzerland and France. During the 13th and 14th century every small town in France, Flanders and Germany had it's Beguinage.

The Bulloughs (1964) observed that most of the hospitals in medieval Europe served many functions for example, care of the poor, the pilgrim, the traveller, the orphan as well as the sick. People who could afford servants were cared for in-their home. Hospitals were for sick people who had no home or who could not take care of themselves. Abandoned children were received in the hospitals. The ordinary country hospital was a small place housing about twenty five persons. The ordinary country hospital was a small place housing about twenty five persons, travelers. Admission purely on ground of sickness was rare though pregnant women were given preference. The beds in these hospitals varied in size, but there were usually great beds and smaller individual beds. In the great beds three or four persons could sleep together. These beds were given to the pilgrims, travelers or poor. The really sick person had a bed of his own. Till about fourteenth century civil hospitals did not have attached physicians or surgeons.

During the early modern period (Approximately 1500 - 1625 AD) hospitals for the most part continued to be mainly occupied by the poor who could not take care of themselves, travelers and

lower rank soldiers (Bulloughs 1964). In America too, almshouses were the first to come. They received dependent persons of all kinds. Subsequently hospitals primarily serving the poor were established. The Bellevue Hospital in New York, started in 1658, had its origin from a poor house (Nutting & Dock 1907). The almshouse was separated in 1848. Around this time the death rate in Bellevue was 25 percent. In Philadelphia, Blockley also began as an almshouse, around 1730 (Nutting & Dock 1907). This became the Philadelphia General hospital. The Pennsylvania hospital (1751-52) was the first to start with the sole objective of caring the sick. The New York hospital, though similarly chartered in 1771 started receiving patients in 1791. The Massachusetts General hospital in Boston opened between 1811-21.

Growth of hospitals was made possible by the political restructuring leading to provision of hospital services as a civic responsibility. Hospital boom of the eighteenth century was mainly due to development of the civic hospitals (Bulloughs 1964). Prior to 1710, 23 principal counties in England had no general hospital. In London care of the sick was mainly confined to two hospitals. Between 1710 to about 1850, 154 hospitals and dispensaries are said to have been established in England. In most of Europe only large cities had hospitals, although the Catholic countries had a better spread of hospitals in the country side, due to the long association of Catholic charity and hospitals. In the United State, there were about 68 hospitals at the time of civil war. In 1872 a survey found the number of hospitals as 178. In 1900 there were about 2000 hospitals (Dolan 1958).

It is interesting to note that the rapid expansion of hospitals was despite the relative inefficiency of hospitals to effectively cure sickness. "Mortality after surgery according to data from English hospitals published around 1870, was not only higher in hospitals than at home, but it rose with the size of the hospital (Starr. 1949). Vogel while studying the role of hospitals in Boston in 1870 reported that "the home was the primary site of medical care in Boston in 1870. Accident victims were likely to be brought home and cared for there instead of being taken to a hospital. Hospitals did not offer any medical advantage over home. Rather hospital treatment added the risk of sepsis. Except in a state of desperation, people would avoid the hospitals. The *raison d'être* of the children's hospital in Boston was "Christian nurture" and utilise the period of hospitalisation to bring about a "through change of life and circumstance, by supplying a rational course of diet and

regimen, by substituting for ignorance and thoughtfulness etc. In order to lay the best foundation for relief from disease (Children's Hospital, 1871).

Development of Teaching Hospitals.

The Greek Aesculapia and famous medical teachings associated with some of them has already been described. The Persians and Arabs played a major role in development of the modern teaching hospital. The first Bimaristan or Maristan (Hospital) was set up in Jundi-Shapur by Sasanian Persians somewhere between 531 to 588 A.D. (Kutumbiah). The medical school of this hospital was established by the Nestorians who had been driven out of Constantinople by the orthodox Christian Bishop Cysos (Mac Eachern 1957). Jundi-Shapur (presently in Iran) heralded the beginning of the affiliation between an hospital and medical school. After the Greek Asclepiads, the concept of teaching medical students in an institution meant to house or care the sick, had not been pursued. The best physicians of all nationalities and religious faiths e.g. Greeks, Hindus, Jews, Nestorians, Syrians and Persians, were encouraged to settle at Jundi-Shapur and develop the hospital (Risley, 1962). The Arabs captured Jundi-Shapur in 636, and seem to have learnt the model of Bimaristan from there. The first Arab hospital meant for leper's was built in 707 A.D. At Damascus. Subsequently separate hospitals for the blind, the orphans, handicapped and women were built (Jaggi, 1979). This only indicates that though they were Bimaristans (hospitals) they were actually meant for the sick poor and the primary motive was charity. Apart from the service to sick and teaching, the medical schools were given a lot of emphasis in all Arabian hospitals. Although the Arabs were not the first to build hospitals, they played a significant role in perfecting them. They started regular bedside clinical instruction, out-patient departments, organised inspection of financial and administrative affairs. A hospital was built in Baghdad at the beginning of ninth century. A bigger and better hospital was founded here in 978-79 called the Adudi hospital. It had good facilities for teaching. The Arab hospital in Caesarea, founded about 1205 AD, and the Muristan in Cairo founded in 1285, are, among many other hospitals of that time (Kutumbiah). According to the account of a chronicler quoted by Dr. Hans (Schadewaldt. 1988) the hospital at Cairo was open to all, had doctors as well as male and female nurses. It had separate wards for fever, wounded, diarrhea and women. There is no doubt that the knights returning to Europe from the crusades introduced these interesting and unique hospital models in their homelands.

Hospitals in India.

Establishment of charity hospitals during the Budhist era has already been described. The Muslim rulers of India brought with them the Arab model of hospitals. It is however not known to what extent the medical teaching feature of the Arab hospital was retained. A large number of hospitals were set up in Delhi by Mohammed-bin-Tuglaq (1326 - 1351) and Feroz-shah Tughlaq (1351 - 1388 AD). In the Deccan, Allauddin II (1436 - 1458 AD) established a hospital in Bidar. Feroz-Shah refers to the foundation of a hospital for all classes of patients and the appointment of physicians for their examination and treatment and free supply of medicines and food to them (Kutumbiah).

One of the most remarkable and early contributions of the Portuguese in India was the establishment of the Royal Hospital at Goa by Albuquerque in 1510 (Neelamegham, 1961). This was the first European hospital in India. In 1591 the hospital administration was entrusted to the Jesuits who constructed a fine building and administered the hospital with a very high level of efficiency. The hospital was founded by the king of Portugal. In addition endowments and presents were received by it from the lords. It had full time physicians, surgeons, apothecaries and other employees. Admission was however restricted to only soldiers of fortune. Subsequently, services in this hospital deteriorated due to non-availability of physicians. To counter this problem the school of medicine and surgery had to be established in it in 1842 (Neelamegham, 1961).

The British established their first hospital in India at Madras in 1664. As is evident from a letter (Gyfford 1964) the motivation for establishment of this hospital were:

1. A good number soldiers particularly those who were not given duty off, were falling sick and many were dead.
2. The wages of the soldiers were not sufficient to supply them with the necessities to attend on the illness.
3. To accommodate them in a special house under direct supervision of people appointed there. So that nothing comes into them neither of meat nor drink but what the doctor allows.”

Similarly, advantages of the Bombay hospital, set up in 1676, were reported (East India Company 1677) as follows:

1. Mortality among company's men and soldiers were reduced from about 100 to 15 per annum.
2. The primary cause of death among sick soldiers, prior to the hospital, could be traced to their irregular habits and want of attendance on them.
3. In case of diarrhoea, which was the common disease, alcohol proves to be fatal. But the soldiers would not desist from them! "Where as in the hospital nothing can come in or go out without passing the doctor's eye's".

In 1701 a French hospital was established at Pondicherry which had become the colonial headquarters of the French in India. The necessity to have a hospital there was felt in 1700 to treat French soldiers topas and other civilians employed by the French East India Company. The construction of another building for a big hospital commenced in the south - west corner of the town in 1734. It is reported that this hospital was not only ment to treat sick French soldiers but also served as a lodge for European orphans. The orphans were lodged, and brought up in this hospital. When the French left, the hospital was upgraded by the Government of India into Jawaharlal Nehru Indstitute fo Post-Graduate Medical Education and Research (Jaggi, 1979).

The first hospital in Calcutta was opened towards the end of 1707 with the following motives:

1. A lot of the Company's soldiers and seamen were getting sick which could be attributed mostly to lack of lodging.
2. There were a great many European Soldiers in the Garrison who if they lodge about the town as usual will create sickness and other inconvenience to themselves and others.

The earliest mofussil hospitals in the Madras Presidency seem to have been established in the thirties of the nineteenth century. By 1842, it is reported, there were only six civil hospitals in the presidency outside Madras.

Contribution of Nursing & Management to Evolution of the Hospital:

Though the number of hospitals were increasing, the manner of their operation did not improve. As the felt need of the society got expressed through more number of hospitals, the inadequacy of nursing facilities managerial and technological know how became evident. The state of hospitals in 18th century were very poor in all respects. William Nolan described in 1789, that the condition of many hospitals in England were horrible. The treatment meted out to patients by hospital staff of all categories was inhuman. Nolan urged the formation of a

Humanistic committee to visit hospitals and exert a restraining influence. John Howard in 1770 started his famous investigations of the prisons and hospitals all over Europe. His investigations exposed the sorry state of affairs in many European hospitals and reported a few well run ones also (Howard John, 1784). His work on hospitals were published in 1789. From Howard's description one can distinguish broadly the well run hospitals and badly maintained ones. The commonest and significant attributes of a well run hospital, in Howard's eyes was cleanliness, neatness, absence of offensive odour, ventilation and cleanliness of air, the tradition of washing patients hand and feet. The practice of allotting one bed per patient. Segregation of patients suffering from different diseases, particularly those known to be contagious, were also among the attributes of a good hospital that Howard looked for. It also becomes evident that the better run hospitals were generally the ones run by religious order of nursing or charity. He is reported to have written "the great attention of the nuns distinguish the hospitals in Roman Catholic Countries". The implication of Howard's observation was that hospitals were better run where nursing services was better organised. The Paris Academy of physicians in 1777 made a report upon the appalling death rate. This report exposed frightful conditions in the hospitals and made many suggestions for reform. In Germany towards the close of the eighteenth century medical professors who were in teaching positions in the universities began to agitate for nursing reform (Nutting and Dock, 1907). The wish to mitigate the sufferings of the sick was the whole impulse of the nursing of the middle Ages (Salzwedel). But now for the first time the idea that nursing was one of the means of cure received consideration. Hitherto drugs had been relied on entirely in the cure of disease, with the exception of some few surgical procedures. Now nursing came to be regarded as important as drugs".

The development of professional nursing, like the discovery of antisepsis and asepsis at a later date played a significant role in development of the hospitals. Contribution of nursing to development of hospitals is evident from three distinct forms of association. Simultaneous growth of hospitals and nursing services. In many cases, hospitals were set up by nursing orders, to be able to nurse the sick. And then there are the cases where nursing services were introduced or reintroduced to improve hospital conditions and reduce hospital mortality.

When the Hotel dieu of Paris was first founded a small group of Parisian ladies volunteered to take care of altar decorations and embroider cloths. Subsequently after the hospital moved into its

new location, the group of volunteer ladies were ordered into a regulated society of sisterhood called the Augustinian sisters (Risley, 1962). Throughout the active hospital building career of the Beguines, nursing remained an important branch of their work. Their hospital at Malines was an important centre for training of nurses. Beguine nurses from Malines managed the nursing services of two famous hospitals, the Hotel dieu at Beaune and Chalon-Sur-Saone. Some of the Beguine sisters formed a nursing order called the sisters of St. Martha of Burgundy. The oblates of Florence (Italy) grew into existence almost contemporaneously with the Santa Maria Nova hospital.

St. Vincent de Paul founded the Sister (daughters) of charity in 1617 at France. It started as an association of charity. St. Vincent's directions emphasised among other things separating the sick from healthy paupers and entrusting the sick to the charge of women who would visit and comfort them. The society was otherwise referred to as Ladies of Charity and was set up to channelise charity in an organised manner, to visit the homes of the poor and assist the sick (Dolan 1958). In 1633, the Sisters of charity were organised on more secular lines. Gradually, the sisters of charity grew into a group of professional nurses, and were managing the nursing services of many hospitals right from 1639 (the hospital at Angers) up to end of nineteenth century. In 1808, they supplied nursing to 250 hospitals in France. Subsequently, of course their contribution reduced due to their conservatism (Nutting & Dock 1907). Many other religious orders of nursing existed during the time.

The deaconess of Kaiserswerth (1836 - 96) in Germany contributed significantly towards hospital hygiene, and set a new standard in hospital work, construction as well as nursing (Nutting & Dock 1907). Theodor Fleidner, founder of the Kaiserswerth "Mother house" noticed during his travels in the eighteen thirties and forties that most hospitals had good buildings but the nursing was wretched (Fleidner, 1886-92). Fleidner was impressed by the Mennonite deaconess, in Holland. The deaconess were chosen by church officers, lived in their own homes, but busy in parish work with the poor and the sick (Nutting & Dock, 1907). The Kaiserswerth deaconess' institution was formally incorporated in 1846. The Deaconess movement included within it both hospital nursing as well as parish or district nursing i.e. Visiting nursing.

Bulloughs (1964) on the basis of records of the lying in hospitals in eighteenth century observed a progressive reduction in maternal mortality rate. In Great Britain between 1749 to

1759, the maternal mortality for institutional deliveries was one in forty two i.e. 2.4% and the neonatal mortality was 1 in 15. By 1799 - 1800 the maternal deaths had been reduced to 1 in 913 i.e., 0.11 % and neonatal mortality was 1 in 115. Bulloughs attributed part of this drop to better techniques in nursing.

The climax in demonstration of the contribution of nursing to functioning of hospitals came in the work of Florence Nightingale in the barrack hospital at Scutary during the Crimean war (Bulloughs, 1964). William Howard Russel, the war correspondent of London times pointed out, apart from others, mismanagement of the hospital and lack of nursing services. He compared the arrangements for British troops with French, who had the Sisters of Charity, to do the nursing for wounded soldiers. The Russian soldiers were also attended by Sisters of Mercy. Miss Nightingale along with 38 nurses drawn from various orders and institutions arrived at Scutari on November 4, 1854. She attended to the following important areas of hospital service:

1. Setting up of a diet kitchen to supply wholesome and nutritious food to the patients.
2. Cleaning of the lavatories and scrubbing of floors.
3. Setting up of a laundry and adequate supply of linen.
4. Extensive sanitary engineering works to provide for drainage, disposal of sewage, and plumbing i.e. Water supply.
5. The gradual setting up of a parallel administration with the primary objective of patient care rather than observance of military rules of discipline.

Miss Nightingale had to set up a parallel administration in order to demonstrate to the complacent doctors and heartless army regimentalists, the true spirit behind a hospital must be based on the sole objective of patient care. In her subsequent writings and practices she emphasised that a nurse derives her legitimacy directly from this ultimate objective and not through the physicians. Thus she insisted that nurses, in disciplinary matters, are subordinate to their matron, who in turn is directly answerable to the management. Florence Nightingale's work establishes three important processes in development of hospitals. The most commonly recognised one is of course the nursing. But equally important are the role of management input as well as sanitation technology in efficient running of a hospital.

As a result of all these actions, the mortality in the barrack hospital came down from 33 to 40% before arrival of Miss Nightingale's team of nurses to about 2% by January, 1855 (Nutting

& Dock, 1907). Miss Nightingale's work, catalysed, stimulated and was responsible in many ways for a world wide movement in hospital nursing. The Nightingale School of Nursing was established in St. Thomas Hospital, London. Its alumnae, commonly referred to as, Nightingale nurses, spread out to different countries and conducted nursing training as well as organisation of services.

The potentiality of nursing towards reduction of hospital mortality was gradually recognised in America. Training of nurses was first started in the New York Infirmary by Elizabeth Blackwell around 1858 (Bulloughs, 1964). Marie Zakrzewska started a nursing school at New England in 1860. This was subsequently attached to the New England Hospital for Women and Children in 1862, specially founded for this purpose. In 1872 this School was reorganised when the hospital moved to a new building in Roxbury, Massachusetts. The training of nurses and evolution of nursing profession was influenced by Florence Nightingale. There were a lot of resistance from the doctors in America to development of nursing as well as lady physicians. Development of nursing was naturally linked with the women's liberation movement. Prior to 1870, hospital nursing was considered as an unskilled work done by women of lower classes. The movement for reform originated, not with doctors, but among upper-class women, who had taken on the role of guardians of a new hygienic order (Starr, 1949). Gradually the contribution of nursing to functioning of the hospital came to be recognised. Dr. S.D. Gross, President of the American Medical Association proposed in 1868, that well trained nurses are as much important as physicians, for care of the sick. Based on his proposal, the American Medical Association constituted a special committee, which in 1869 stated that "there is marked diminution of mortality in hospitals where nursing is done by trained women, a decided decrease in expenditures and a great improvement in the moral character of the inmates". One of the reasons for sudden expansion of nursing schools towards late nineteenth century in United States, was due to the demonstrable reduction in hospital mortality as well as costs.

Evidently the nursing profession has evolved and is there in the hospitals not because the doctors wanted them there, but because the society has put them there. Doctors first tolerated and then understood their indispensable contribution. Evolution of nursing services as a component of hospital services is more of a social phenomenon than a technological phenomenon. Nursing

services have played a definite role in reduction of hospital mortality and have made equally significant contributions to hospital management.

Contribution of Technology to Evolution of Hospitals:

We have examined the reason why hospitals were set up at different times and the purpose for which they were set up. We have also seen that during the eighteenth century the number of hospitals increased, despite the absence of any demonstrable advantage of hospitals in reducing morbidity. The basic reason and motive to set up so many hospitals continued to be care of the sick poor. Based on the history of development of hospitals till the 18th century it is possible to arrive at certain general attributes of hospitals.

1. They evolved to house the sick poor and hence as a social security institution. The hospitals were a symbol of spontaneous social response to the need for taking care of the sick poor. The church and the monasteries were the medium through which the society expressed itself. When they became less active the society threw up various hospital orders and finally it became a responsibility of the municipal and local bodies.
2. The hospital was a economic means of dealing with large number of sick. The church and charitable institutions set them up to house large number of sick poor.
3. To some extent the hospital played the role of preventing over indulgence among the sick soldiers. Nursing and general supervision were the major contributors to reduction in morbidity.
4. The growth of hospitals was a function of the population, particularly the poor and the morbidity.
5. The Arabs demonstrated their utility as source fo clinical material for medical teaching, apart from care of sick poor. This was to become the primary motive to set up hospitals in some instances.

In nutshell hospitals were to start with very much social institutions. The social basis of hospitals continues to be valid today. However it would be interesting to study to what extent technological advances have stabilised the hospital and to what extent it has affected it's character.

Discovery of antisepsis and aseptic techniques played a great role in development of hospitals. Prior to their discovery hospitals used to add to the problem of patient by way of cross infection.

Because of proximity to patients with other disease, the chances of cross infection were more in a hospital than in a home. Higher rates of case fatality in the hospitals compared to the home has already been mentioned.

Philip Semmelweis observed in the Viennese lying in hospital that the incidence of puerperal fever and mortality was less in the ward where the nurses were in sole charge of the ward, compared to another, where medical students used to examine patients, mostly after post mortem classes and without washing their hands. He insisted on the doctors and medical students to wash their hands in chlorine before entering the maternity ward. The mortality reduced dramatically. But the doctors resisted and reacted so much that Semmelweis was driven mad and out of the hospital, to ultimately die an early death. Subsequent to Pasteur's discovery of the role of micro organisms in fermentation of alcohol, Dr. Joseph Lister of the Glasgow infirmary introduced carbolic acid spray of the operating room and the operation area. He used carbolic acid to disinfect the surgical instruments (Risley, 1962). This brought about a marked reduction in post operative mortality. Though Joseph Lister developed antiseptic technique in 1860, it took some time for this to be General Hospital during 1870. The Boston City hospital performed its first completely anti septic surgery in 1879. The Massachusetts General Hospital started construction of an aseptic operation theatre in 1888. The children's hospital, Boston, renovated its operation theatre with aseptic furniture and sterilisation system.

With introduction of steam sterilisation by Bergamann in 1886, the concept of aseptic technique began. In 18900-91, Halsted introduced rubber gloves, which contributed further to aseptic techniques. Vogel observes that "neither antisepsis nor asepsis made hospitalisation necessary for surgery. In many cases, these precautions could be observed just as easily in the home. But these procedures did combat hospital germ concentrations and made hospital surgery relatively safe". More and more scientific discoveries in the medical field also improved the prestige of hospitals. Newer diagnostic equipment like X-rays etc. Could not be carried to the patient's home. Dr. Fredrick C. Shattuck (1906) defined a hospital as "a collection of the sick, which concentrates means and appliances for their care and cure, which in private practice must be scattered and thus difficult or impossible of full use, even by the rich".

Continuing advances in medical technology during the twentieth century has changed the character of modern hospitals. Two broad sets of technological changes can be recognised.

Firstly increasing specialisation by physicians and consequent development of specialities and sub specialities. Secondly increasing sophistication of biomedical equipment (both diagnostic and therapeutic). Economies of scope (by putting different types of specialists under the same roof) and economies of scale (to achieve higher utilisation of biomedical equipment) were sought to be achieved through larger hospitals. However technological changes alone can not explain the extent of changes that hospitals have undergone during this century. For example considerations of economies of scale and scope can explain larger hospitals up to certain size but not the very large ones with more than 500 to 700 beds. Social factors were equally responsible. The development of specialities and sub specialities was itself greatly driven by social processes within the medical profession. In addition hospitals came to be perceived as symbols of prestige. They are also subtle but effective means of widening the influence for the trustees and managers.

The rapid technological changes of the present times has, affected all types of hospitals. In a sense it has been a great leveller. Many hospitals originally set up with very distinct goals gradually transformed into a facility mainly selling biomedical-technology. The hospitals today give many satisfactions to patients and staff. But the almost exclusively physical approach to disease, both in the care of the patients and the training of staff, the stratified administrative structure, the increasing pressure and fragmentation of clinical work have produced technology dominant impersonal climate (Elizabeth Barmes, 1961).

Summary & Conclusion:

Technological advances in the nineteenth century (for e.g. Antisepsis, asepsis, anaesthesia) made the hospital a viable institution from the medical technological point of view. The modern day hospital is widely perceived as a technological institution. All hospitals tend to be fitted according to a single stereotype. However we have seen that altruism, civic sense, charity (mainly as a tool of social control), production of medical manpower, physicians plant facility, care of the military, service for profit have all been primary motives behind setting up of hospitals. Development of nursing profession, and medical technology have been two very significant factors in making hospitals a viable proposition. No wonder that there are different type of hospitals today, each deriving its lineage from different primary goals. For example there is subtle but distinct difference in the goals and mission between the following kinds of hospital. The

differences are in the relative emphasis on technology and care on the one hand and equity and social justice on the other.

1. Public and municipal hospitals are a secular expression of society's desire to provide for the care of its members, particularly the poorer one.
2. Hospitals set up by the religious charities are an expression of the desire to take care of others. Such groups of persons usually work with altruistic motive. The hospital can be considered their plant facility. Here again there is greater emphasis on the poor and the destitute.
3. Teaching hospitals with primary emphasis on research and training. Hospital is the plant facility for teaching and research. Service delivery is incidental to it.
4. Military or veterans hospitals.'
5. Private corporate or proprietary hospitals and nursing homes. Service delivery is largely driven by the market forces. Medical care needs of those who can afford to pay more drives the development of services by these hospitals.
6. Nursing homes attached to doctors practice.

Hence it would be wrong to consider hospitals as a single entity for purposes of health policy dealing with them. The concept of hospital actually involves a group of different type of health care institutions. The common denomination being housing of inpatients for medical care. Hence national health policies should clearly address to each of the broad type of hospitals, for example public hospitals, private hospitals, teaching hospitals etc. Such policy should encourage those complimentary to the over all health service. Hospital managers also need to recognise the contribution of the primary social motive, nursing profession and technology to every kind of hospitals. Administrative stewardship of hospitals by doctors is of recent origin. Historically stewardship of hospitals by nursing orders, hospitallers and such other people representing the primary social intention has resulted in more efficient running of hospitals than its management by medical technologists.

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