Chapter-3
Change in Healthcare and Implication on E-Healthcare
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3.1 Socio-Economic and Demographic Shift

The aging of the population is the most prominent outcome of the process that can be termed as demographic transition. A decline in the fertility rate of a nation brings down the population of youngsters in the country and the advancement of medical sciences leads to reduction in mortality rate which increases the population of the aged in the nation as people tend to live longer or have a longer life span. This drastic demographic transition is a phase from which India is passing at the moment as it means a transition from a situation of high mortality/high fertility to a situation of low mortality/low fertility. This leads to an increased percentage of older people in the population. This demographic transformation has altered the healthcare demands of the nation to a large extent and the government has modified and increases the focus towards the healthcare facilities. (Chahana & Talwar, 1987)

During the time of Indian independence, in the year 1947, India was in a miserable state from all quarters. At that time the life expectancy was approximately 32 years (Dandekar, 1986). Over the years a lot of betterment in public health and the medical services have facilitated control of specific diseases that are infectious in nature and thus the mortality rate has come down. The life expectancy ratio at birth went up consistently over the decades and by the year 1990; it had reached to 60 years (Dandekar, 1986). A lot of factors contributed in this shift towards betterment;
better sanitation facilities, more focus towards the maternal health of the mother and more advanced facilities for infant care significantly brought down infant mortality rate. The government took various initiatives to sponsor family planning measures and it certainly showed results in the urban areas where people understood the concept of family planning. Total fertility rates were brought down. The total fertility rates which mean the average number of children a woman would have by the end of her reproductive cycle came down to 3.96 in the year 1990 from the figure of 5.97 in the year 1950. By the end of the millennium the crude birth rate was approximately 25 and the crude death rate was less than 9% per 1000 population (Dandekar, 1986). It is estimated that the shape of the pyramid would modify from a conventional pyramid with a wide base and narrow top to a distinct barrel shape.

The composition of aged persons in the Indian population at present is the second highest in the world. The figure of people above the age of 60 years in India will shoot up from a figure of 76 million in the year 2001 to a great figure of 137 million by 2021. There has been a gradual rise in the population of the elderly in India. From a percentage of 5.4% in the year 1951 it shifted to an 8.1% in 2001. These changes are of course not without the impact on the living conditions and basic needs and wellbeing of the sub group of the population. The dependency ratio of the old age population was found to be a lilt over 12.6% in the year 2001 in comparison to a 9.8% in the year 1051 (Dandekar, 1986).

India is a land of the rural. Approximately 75% of its population lives in the rural set up of the country. There is a very string contrast in the living conditions of the rural and the urban population. The access to the many resources, infrastructure
and facilities are far better and improved in the urban set up. Though a lot of variation can be found in the set of the villages from region to region, the larger picture depicts a very poor hygiene, sanitation, and education and healthcare facilities for them. The past fifty years have witnessed a lot of growth and transformation in the healthcare sector. However this development has not been uniform throughout the country as the urban population has been more fortunate to get the most advanced medical facilities and the advantages of modern technology (Government of India, 1986-87).

A lot of emphasis in healthcare delivery system has been laid on the mother and child programme and on controlling the population. The older population in India has a reasonable access to family care however they do not get covered by the economic and the health security provided by the government. The government has shortage of resources and has various other problems that need urgent care. Various organizations have been recommending the government to bring forth a national policy for welfare of the citizens by having been given a lot of draft proposals. It is imperative that the information has to be accurate for good planning, policy making and the correct action. Quality research is required to be undertaken in healthcare sector to ensure uniformity in healthcare services throughout the country. What is missing in the policy framework of Indian healthcare service is the baseline data on health, morbidity, psychological status, socio economic conditions and the living arrangements. The need of the hour is to take up a deep study of the relevant strategies for enhancing and improving the wellbeing of the people. Working in very close connection with a lot of international agencies is a technique to pick up the models that have been used in many other countries and making sure to adopt the
ones that would match best with the socio cultural set up on the Indian sub-continent (Kumar, 1997).

A lot of economic development and the urbanization have crept up those changes that have shifted the lifestyle of the Indians from healthy to the unhealthy alternative. Indians have been reported to adopt a high rate of smoking (approximately 26%) and a low rate of physical activity (18%) in the current lifestyle patterns. These kind of behavioural patterns are likely to shoot up the rate of ill health in the country in the years to come. Approximately half of the older Indian population has one or the other chronic problem ranging from asthma, angina, depression, diabetes or arthritis. These are the problems that occur because of faulty lifestyle patterns and negligence of health care (Paul, Sharon, Yong, Wu Fan, & Chatterji, 2012).

The proposed demographic transition of the Indian economy where by the percentage of aged people in the population will shoot up; it is quite evident that the prevalence of chronic diseases such as diabetes and hypertension will also increase. The disease burden of the country will be borne by the older population of the country. According to research conducted by Bhattacharjiya & Sapra(2008) by the year 2030 the older adults will comprise a major chunk of the population. In such a dismal scenario, less than 10% of the Indians have health insurance of any sorts, either from public or private sources. Approximately 72% of expenditure on treatment or maintenance of health is borne out of the pocket of the patient or his family.
An increasing count of older population in the country will put more burdens on the healthcare system of the country. It will be required that the resources and focus of the healthcare services is diverted towards more and more care for the aging population (Chatterjji et al., 2008). However, the health insurance scheme for the Indian poor unfortunately is only applicable for those whose age is below 65 years. This puts the senior citizens of the country in an all the more vulnerable situation. In the older population, the women are in a more risky situation. In the first place women tend to be more sensitive towards health issues and on top of it, in the rural or economically backward scenario; their health is often neglected all the more as compared to men (Roy & Chaudhuri, 2008).

In light of the above mentioned concerns, a lot of programs have been initiated by the Indian government so that maximum health care facilities are provided to the ones who lack access and apart from that the awareness about health insurance is maximized so that more and more people can reap benefits from it (Bloom, 2011).

Farahani, Subramanian, & D. (2010) related that the spending on public health has increased because the survival of the more vulnerable groups has increased and the elderly have a higher life expectancy. It also states that a 10% increase in the amount of money spent on public health brings down the percentage of death due to chronic ailments or infectious diseases by 3%, particularly in women and children. A lot of public funds have been diverted towards the provision of health care systems.
The developed nations have already found a solution to the existing and forthcoming problems in a relatively newer concept, e-health. However, the developing countries are still at the nascent stage in developing and adopting e-health. Research has often contradicted that e health may not be a wise investment for the developing nations where there basic needs are a more urgent call, mainly like food, clothing and shelter, sanitation, hygiene. It is more advisable that the developing or the low income countries should better divert their funds towards necessary investments and should invest moderately in high end and state of the art equipment. The community that is ardently promoting e health needs to focus on in what way the information and communication technology can be used to enhance the efficiency in the delivery of healthcare services. It is important that e health is taken forward by a push in the technology rather than a push created by need or a technology based pull. For instance: e-health has a lot of potential in the developing world. In the attempt to exploit the potential to its best capacity the world health organization has designed and initiated the concept of a health academy which offers internet and CD ROM based access to trustworthy and contemporary knowledge and information on health related issues with the use text, audio visual aids, pictures and illustrations, photographs and animations. There is still a lot of scope in the developing countries where the entire potential of information and communication technology has not been realized. This is more specific in the case of disease prevention. It has been proved by evidence that a better exploitation of information and communication technology could bring in a better utilization of health resources and more efficiency (World Health Organization, 2008)
3.2 Role Shifts and Raise of Transparency

The advent and acceptance of e-healthcare represents a transfer from a power-oriented relationship in the hands of the medical practitioners towards a more collective and collaborative relationship whereby patients take up a larger responsibility and play a more involved role in taking care of their own health and wellbeing. These changes have brought in the shift of role and responsibility of the practitioner to a co-owned responsibility of the patient as well. In order to get prepared for this new role, it is important that the user understands the possibilities of the various e-health tools and also at the same time realize the control that they have over how they interact or communicate with this kind of a new technology. In this new scenario where individuals deal with their own data, the management of the scenario has to be done in a different way. One accepted method to do the same is the shared ownership of the data between the health system and the patient. The restrictions on the access to the data may depend upon the use of the data. The patients who are the primary owners of the information give permission to the health system to use or depersonalize the limited data that they have for medical purpose without needing any further sanctions or permissions.

The technological advent has brought in a lot of difference in the conventional healthcare system. In the first place, these changes have brought in developments in roles and responsibilities of both the practitioners and the consumers. Apart from this with more and more technology involved in the system the access and control of the customer would maximize. This would increase the level of transparency in the interaction and the information that is available to the consumers. Changes will indeed bring in challenges also, the challenge of funding and monetary concerns
apart from the issue of acceptance and resistance to change are major concerns before the ultimate potential of e-health is realized. The electronic health record has the commitment to enrich one’s understanding of the human biology and the phenomenon of disease. The electronic Health Database when interlinked with genomics and proteomics is made available to the researcher, it could be advantageous to the individual as he would be able to figure out the personal risk factors and also understand the many preventive methodologies. It would keep nothing hidden from him and increase the level of transparency to the maximum level. For these kinds of techniques to go forward and prove results, it is very important that ethical, legal and confidential issues are taken care of (Venkat Raman, 2009).

A lot has been achieved by the countries who have been gearing up to implement the go power and the advantages of e-healthcare by its incorporation in the systems. A lot of countries are keen and eager to go forth on this path. The learnings from the more experienced countries can certainly serve as stepping stones for the developing or new developed countries as these experiences can help them to implement information and communication technology in their country in a wiser manner. A lot of challenges will be faced by the less developed countries. The main few challenges are:

- Infrastructural requirements
- Resistance to change by the medical practitioners and the customers.

Going forward in a way that not just makes the capacity more but also ensure that the cultural sensitivity is preserved and enhances the access of these
technologies to the most needy has to be the ultimate goal. The main gain of e health should go to the poor, under privileged and needy in the society who needs to gain the most from this kind of a development. Unfortunately what happens is the reverse and though e health will play a central role in any development that takes place in healthcare in times to come. E health has a phenomenal potential to serve all sections of the society in different capacity. It is imperative that sound policies are developed so that the concept of e health is followed on the framework of equity (Sheikh & George, 2009).

Collaboration between countries and openness towards learning from each other in the process of implementation of e healthcare would result in greater chances of success. WHO in its guiding principles has addressed the e-health agenda. It encourages various international and national bodies to collaborate with each other, along with the NGO’s, the private sector and with the other stake holders for a greater degree of success. A healthier world can be achieved through collective efforts and along with that the information and communication technologies aid the healthcare services for one and all. India has reported to the WHO community that all that has been done towards development of E healthcare with the incorporation of Information and communication technology has been found to be less to average effective in context to results achieved from the same.

Various national mechanisms in India, ranging from information policy to strategy for technology or e-strategy and e-policy have been synchronized together in the first few years of the new century in order to bring in the best possible outcome of e health. Specific sectors in the health industry such as partnership of
private and public sector, policies for procurement, funding for private and public causes and e health standards have been brought in successfully within the country, starting from year 1998. A lot of effective initiatives have been taken by India to enable its environment to respond positively to use and implement ICT in healthcare industry. The information technology act 2000 gives a legal groundwork for all the actions that are digitally related and deal with the various privacy issues. One of the major challenges faced by India in this process of bringing in E health in the country is coordination between the inter-ministerial and the department of Information and communication technology. Another policy that is in pipeline is to bring down the cost of the ICT infrastructure for the health sector in the coming few years.

The healthcare providers have primarily focused to make use of E-health systems that take care of the information and the communication technologies to ensure that the access is broadened and the quality and efficiency is augmented. However, there has been a lack amongst the policy makers and the medical practitioners to accept and adopt this technology and utilize it in practice. This professional resistance has been found to be a major barrier in this progress. Implementation and incorporation if new technology calls for a very complicated process at the grass root level, not only for the medical professionals but also for the consumers or patients. It has been recently accepted by the European Union that the implementation of E health strategies has been a far more complicated initiative than it was anticipated in the initial stages (Wong, 2010).