CHAPTER – III

HEALTHCARE INDUSTRY
AN OVERVIEW
3.1 INTRODUCTION

Healthcare industry at present is considered to be among the most dynamic industry with ample number of job opportunities. Among the rapid growing sectors in India, Health Care sector has immense potential! Several studies disclose the fact that the Health Care industry in India has witnessed a growth of about 30% in the year 2008-2009, which accounts to about 1.3 million jobs opportunities, the maximum increase in any kind of industry. Today, India is known for offering top class health care facilities to all through its world class health institutes and hospitals.

Excellence in healthcare is a major imperative for any country to sustain and develop. The health care sector in India is in need of skilled and efficient personnel who are excellent in medical science and also technologically sound. At present more than 100,000 people are there at various levels of the health care industry.

The Indian healthcare industry is growing rapidly at a rate of around 15% every year. Owing to this rapid and diverse growth in the scope for a prosperous career in the healthcare industry in India has also grown considerably and significantly! The major aspect about the healthcare management jobs in a country like India happens to be the fact that in recent times, opportunities in the health care industry is not limited to doctors any more. There has been a diverse growth in the sector with other health care areas opening up as well. The rate of growth in the health care jobs is expected to increase by double in the next few years to come. This will, for sure, result in making the sector a core sector for employment in India.

March 24, 2010- The healthcare industry in India is growing at a rate of about 15% per year. As such, the scope for healthcare careers in India has grown
significantly. The most important aspect of healthcare management jobs in India seen in the recent years is that the healthcare sector now is not only limited to the opportunities for doctors but the other areas in healthcare management are also growing. It is expected that the growth rate of healthcare management jobs will almost double in the next 1-2 years’ time which will make it a core sector in the employment arena.

3.2. HEALTH CARE MANAGEMENT ORIGIN AND GROWTH

Healthcare Management is one of the most rapidly evolving sectors in the marketplace in the current scenario. New hospitals are coming across the country and several corporate are also venturing into healthcare and hospital industry. In many ways, healthcare management is a “hidden” career. When we think of a hospital or a clinic, we tend to think of physicians, nurses, and other caregivers. The myriad of people who work in the organizations that support health services delivery organizations, like insurance and managed care companies and government policy-making and regulatory agencies, are even more invisible and are not who we think of when we hear the phrase “health services.”

Health systems management ensures that specific outcomes are attained, that departments within a health facility are running smoothly, that the right people are in the right jobs that people know what is expected of them, that resources are used efficiently and that all departments are working towards a common goal.

HISTORY

Early hospital administrators were called patient directors or superintendents. At the time, many were nurses who had taken on administrative responsibilities. Over half of the members of the American Hospital Association were graduate nurses in 1916.
Other superintendents were medical doctors, laymen and members of the clergy. In the United States, the first degree granting program in the United States was established at Marquette University in Milwaukee, Wisconsin. By 1927, the first two students received their degrees. The original idea is credited to Father Moulinier, associated with the Catholic Hospital Association. The first modern health systems management program was established in 1934 at the University of Chicago. At the time, programs were completed in two years – one year of formal graduate study and one year of practicing internship. In 1958, the Sloan program at Cornell University began offering a special program requiring two years of formal study, which remains the dominant structure in the United States and Canada today (see also "Academic Preparation").

Health systems management has been described as a "hidden" health profession because of the relatively low-profile role managers take in health systems, in comparison to direct-care professions such as nursing and medicine. However the visibility of the management profession within healthcare has been rising in recent years, due largely to the widespread problems developed countries are having in balancing cost, access, and quality in their hospitals and health systems.

3.3. SCOPE FOR HEALTHCARE MANAGEMENT IN INDIA

There is a huge requirement of professionals who are specially trained in health care Management.

India is gradually gathering popularity as a health tourist destination.

- Healthcare Tourism is expected to grow at an annual rate of 50% in the period 2012-2020.
- Biggest driver for growth in healthcare tourism is differentiation in medical expenses as compared to the western countries.
• India ranks second in the world in the medical tourism after Thailand.

• 100 per cent foreign direct investment (FDI) is permitted for health and medical services under the automatic route.

• India’s healthcare insurance sector is also expected to grow at an annual rate of 40%.

• To meet the manpower shortages Indian government is investing 20 billion dollars over the next five years.

• Job Profiles: - Quality Assurance manager, Hospital Administrator, Corporate Health Manager.

• Top Companies: - Medanta Medicity, Columbia Asia, Fortis, Sri Ganga Ram Hospitals, Apollo Hospitals, Max Healthcare.

**Healthcare Management Degree and Career Scope**

A healthcare management programme teaches management principles in finance, operations, and communications and in other areas specific to health care industry. Any graduate or post graduate from such backgrounds as medicine, life sciences, micro biology, pharmacy, biotechnology, nursing, physiotherapy, veterinary science, paramedics etc. can apply for getting a healthcare management degree. The degree 'MBA Healthcare Management' can, apart from jobs in hospitals can make one eligible for getting jobs in pharmaceutical companies, credit rating firms, NGOs, health insurance companies, e-health ventures etc. Students with a degree in healthcare management can also have job opportunities in medical tourism industry.

At present, about 40 lakh people are employed for health management jobs and this sector is growing at a 15% rate per year. This tells us the wide scope that healthcare management industry presents in India in the near future.
Among the direct jobs in the sector of healthcare sector, are the professions of the doctors and nurses. Other jobs in this sector includes openings as team managers who can supervise marketing, health information, HR, medical billing and other departments. An amazingly prosperous career in health care management is awaiting you, if you are compassionate, innovative, responsible and highly motivated besides having the ability to work for long hours and under pressure.

Several factors have contributed to the growth of the healthcare management industry in India

The corporate world has made its presence felt at the healthcare industry owing to liberalization. This has in turn resulted in many career opportunities in this sector. Currently every city in India is witnessing a growth in the hospitals. This has resulted in a significant gap between the need that is the demand for trained and efficient health care personnel and the supply of the same! For instance, in NCR, over 15 new hospitals will be coming up shortly that will definitely create healthcare jobs for thousands.

In a study by the Ernst & Young and KPMG it has been stated that in next twenty years to come, India will have to add up at least 1 lakh beds each year in order to meet the needs of the healthcare industry. Further, it is estimated that every bed will account for about five direct and twenty five indirect job opportunities in the healthcare sector. The growth and development of India's medical tourism has greatly contributed towards the creation of new careers in healthcare such as-
• Clinics
• Health insurance organizations
• Consulting firms
• Healthcare associations
• Nursing homes
• Hospitals
• Physician practices
• Mental health organizations
• Rehabilitation centers
• Public health departments
• Skilled nursing facilities
• Universities and research institutions

**Health Career Management Institutes in India**

• The Institute of Health Management Research- IHMR Jaipur
• TATA Institute of Social Sciences, TISS, Mumbai
• All India Institute of Medical Research- AIIMS, Delhi
• IMS, Devi Ahilya Vishwavidyalaya University, Indore
• Apollo Institute of Hospital Administration, Hyderabad
• DMS, Madurai Kamarajar University, Madurai
• Christian Medical College, Vellore
• Institute of Pharmaceutical and Healthcare Management and Research – IPHMR
• Calcutta
• ASCI Hinduja Institute of Healthcare Management, Hyderabad
KEM Healthcare Management Institute, Pune

National Institute of Pharmaceutical Education and Research, Chandadhp

Institute of Clinical Research India, New Delhi

Creama Health Care Institute, Bangalore

Jawaharlal Nehru Institute of Medical Education and Research, Pandichery

Srirama Chandra Medical University, Chennai

3.4. EVOLUTION OF HEALTHCARE MANAGEMENT IN INDIA

After independence India has made considerable progress in economic and social development. India has invested huge sums of money in the development of extensive health care system which caters to a population of 1000 million residing in 6,00,000 villages. India, compared to other developing nations spends slightly higher amount in the health sector. It spends 6% of the GDP or $13 per capita in the health sector. However, many of the key health indicators are very low, communicable diseases continue to be a major problem; maternal mortality is high; and morbidity especially among the poor exacts high toll. Even these indicators vary from region to region significantly.

The WHO Constitution defines health as a state of complete physical, mental and social wellbeing and not merely the absence or infirmity". "Life is not mere living but living in health" with this words, the Honorable Mrs. Indira Gandhi the Prime Minister of India, opened her address on 6th May 1981 to the Thirty-fourth World Health Assembly, meeting in Geneva. She further stated that "the health of the individual, as of nations, is of primary concern to us all. Health is not the absence of
illness but a glowing vitality, a feeling of wholeness with a capacity for continuous
intellectual and spiritual growth. Life means Living in Health.

The evolution of Health care Management System in India was a mixed one. Medicine and Medical records go parallel to each other, hence to know more about the medicine, one has to witness the progress with medical records. The India has glorious period wherein the history of Medical record parallels the history of medicine. Primitive medical records carved in wood and chipped in stone date back to the approximately 25000 B.C. Throughout the millennia, medical records have evolved in conjunction with the advances in the art and science of medicine.

The 20th century brought India a mixed experience; such as struggle for independence coupled with First and Second World War that was a dark era for India. However, later half of the century, gave India the freedom that allowed moving forward. During the last decade, India has accomplished tremendous progress in integrating healthcare system supported by ICT and Electronic Health Records.

**Historical Background of Healthcare Management**

The history of medical record parallels the history of medicine. Primitive medical records carved in wood and chipped in stone date back to approximately 25000 B.C. In subsequent centuries, hieroglyphics found on parchments recorded scientific progress. Although, these chronicles preserve medical achievement of those eras for later generations.

**Flourishing of medical practice in India**

Ample evidence exists to substantiate the flourishing of medical practice in India many centuries before the birth of Christ. Art forms such as the icons, friezes, and frescoes in the caves and temples of Ajanta and Ellore and on the Buddhist Stupas
of Amaravathi and Nagarjuna Konda portray medical concepts. There are innumerable references to the science of medicine and surgery in Indian epics like Mahabharata and Ramayana. The earliest documentation of medical practice in India is found in Athervaveda. The first Indian textbook of medicine Atreya Samhita was written by the sage Atreya during the Sutra period following the Vedic ages; this book united previously scattered medical care details into a comprehensive compendium. Agnivesa Samhita also documents the art of healing in a textbook containing about twelve thousand verses.

First Indian Textbook of Surgery

Charka Samhita represents the view of points of numerous scholars through many centuries, beginning with practices during the period of Agnivesa and ending with those propounded by Dridhabala fifteen centuries later. This Samhita excellently records a glorious period of creative Indian medicine. Susruta Samhita became the first Indian textbook of surgery, describing twenty sharp and one-hundred-and-one blunt surgical instruments, methods of preparation for major surgery, and native methods for anesthesia administration. Ashtanga Hridaya by Vegabhatta described surgical procedures and discussed innovative drugs for medical care. The translation of this work form Sanskrit to Persian by Ali Mohammed Ben Ali Ismail Asavali Asseli as Tibb Shifa Mohammed Sahi is considered an outstanding masterpiece.

Unani Tibba System of Medicine

Unani Tibba System of Medicine with origins tracing to ancient Greek medicine, was introduced into India by Muslim rulers by the Thirteenth Century A.D., this system of medicine was firmly entrenched in places like Delhi, Aligarh, Lucknow and Hyderabad. The Hakims who practiced this system quite willingly also utilized
the effective drugs of the Ayurveda system and included them in their Pharmacopoeia.

Decline in the indigenous system of medicine

The successive invasions of India and eventual British Colonial Rule of India evoked a decline in the indigenous system of medicine. Allopathic medical missionaries arrived from other countries to establish hospitals and dispensaries. Modern medicine was introduced into India by the Portuguese in the Sixteenth Century. In 1510, Albuquerque founded the first Indian hospital, the Royal Hospital in Goa. This hospital highly touted as one of the finest worldwide, was transferred to Jesuit control in 1591.

Rudimentary medical teaching began there in 1703 and by 1842 a complete school of medicine and surgery was extant. The Ecole de Pondicherry was a school of medicine established in India by the French government in 1823. The Medical Department of the East India Company was created in 1740. This unit was comprised of British military surgeons and their local assistants. A committee appointed by Lord William Bent nick drafted the principles of a medical curriculum in 1833. This effort culminated with the establishment of Madras Military Medical School in 1835. A medical college was opened in Calcutta in January 1836, and the Grant Medical College in Bombay was opened in November 1845 under the auspices of Sir Robert Grant, the then Governor of Bombay. Homeopathy, which Samuel Heinemann (1755-1843) of Germany propounded, gained a foothold in India between 1819 and 1839. This system of pharmacodynamics is based on natural laws of cure. Homeopathy is practiced in numerous countries worldwide, but India claims to have the largest number of practitioners of this system.
Many hospitals had no medical record departments; records were bundled and kept in wards, store rooms only for a short duration. The basic forms required for a complete record and vital laboratory, x-ray and other tests necessary for establishing a correct diagnoses, were absent. The International Classification of Diseases was not known to many medical people. As for statistics, there was no insight as to what type of statistics were important and why, and need for standardized procedures on collecting, compiling and reporting was also absent.

Primary Health Care Center

Earlier during the sixties and seventies the medical record system in PHCs was very poor, majority of the health centers i.e. 90 to 95% of them depended much upon the registers maintained for administrative and other purposes and patient information was disintegrated. Very few teaching hospitals especially mission hospitals had special record forms. Majority of the population in India sought healthcare mainly through primary healthcare centers or sub-centers specially people living in rural areas.

Outpatient Record System

The people in urban and cities used primarily, the outpatient services and the medical record systems utilized in these outpatient services can be broadly classified into two categories namely the:

i. Outpatient slip/chit system

ii. Departmental record system

Outpatient Slip/Chit System: More than 90 -95% both large and small hospitals in India employed Outpatient slip/chit system. Although a simple, economical, and time saving procedure, the slip/chit system is inadequate from the
stand point of comprehensive patient care. Clinicians, administrators, and even patients were convinced of the deficiencies of this method. The outpatient chit supplies the patient with an identity card and also served as a treatment chart. Frequently, patients lose or misplace the outpatient slip and then register as a new case on subsequent episode of care.

**Departmental Record System:** Although superior to the outpatient slip system, this departmental record system used in outpatient of hospitals also lacked effectiveness. The system consists of departmental outpatient cards designed to meet the needs of each clinical specialty (cardiology, neurology, obstetrics, psychiatry and so forth...) The unit record is not achieved with this system because each specialty department registered patients directly and maintained its own record system. Patients do not have custody of their records. If a patient visits four separate clinical departments for treatment, that patient will have four separate health records. Records from a particular department are generally not available to other clinical departments; as a result, a composition health history of an individual patient is not readily available.

**Post Independence**

India attained independence in the year 1947 and became Sovereign Republic in the year 1950, since then the Government of India has been making all efforts to develop simultaneously many national programs such as agriculture, industry, communication and healthcare service for its large population.

Establishment of Central Bureau of Health Intelligence (CBHI): In 1958, on the recommendation of Douglas Burdick, Health Division of Planning Commission to improve the teaching hospital records. Then the Government of India (GOI) established the Central Bureau of Health Intelligence (CBHI) in the year 1961 to
function as the National Nodal Institute of the Director General of Health Services (Dte. GHS), Ministry of Health and Family Welfare (MOHFW), GOI. Its objectives include providing ready information on National Health Profile of India envisaging demography, healthcare, morbidity and mortality indicators, as well as medical/paramedical education and infrastructure in the country.

**Appointment of A. L. Mudaliar's Committee**

The Government appointed "A. L. Mudaliar's Committee" in the year 1964, which recommended "Provision made in the 4th 5 year plan to establish MRDs in Teaching Hospitals". In accordance with the committee's proposal, the Central Council of Health in its Srinagar Session in October 1964 passed the following resolutions:

"The Central Council of Health Recognizing the important role played by Medical Records in efficient hospital care and Teaching and Research recommend that the available training facilities in medical records may be fully utilized and adequate provision made in the 4th Five year plan for proper medical records department (MRD) in all teaching and major hospitals in the country". The Christian Medical College Hospital (CMCH) and Jawaharlal Postgraduate Medical Education and Research hospitals (JIPMER) were the only two institutes had comprehensive medical records system at par with international standards that were able to meet excellent patient care, medical education and research programs.

Since the early beginning in the 1960s, hospital information system (HISs) has been developed to cover both administrative and medical functions. However, it must be recognized that the first systems often focused on the billing and are reimbursement aspects of hospital activities. These systems were designed to provide a money-oriented return on investment and streamline patient admissions. The system included managed appointments and provided (stand-alone) ancillary services for
hospital laboratories, the pharmacy and radiology departments to support existing manual procedures without adding value, and they functioned as a bonding element among the many disparate systems inside and outside the hospital.

The 1980s saw the implementation of two nearly worldwide changes with a significant impact on the way computer applications were used in hospitals. On one hand, reimbursement systems gradually evolved from a free-for-service basis to a fixed budget system where figures on resource consumption played a central role. On the other hand, medical systems initially developed to simply automate existing processes became systems supporting physicians, nurses, and other healthcare providers in their daily patient care activities. The aim was to attempt to guarantee standards of care and lead to improved levels of decision making.

**Telemedicine**

Telemedicine is distance consultation among health professionals or between health professionals and patients by use of telecommunications technology such as real-time audio or visual systems, most notably video conferencing. The potential advantages are obvious in dispersed communities (rural areas) where expertise is thinly spread, and when traveling is difficult or inconvenient for doctor or patient. Uses are wide and varied and include direct interview and history taking, observation of physical signs, and distance reporting of imaging procedures.

**Internet and Web-based Medical Communication**

The Internet is a means to improve health and health care delivery, its full utilization is not clear. Nevertheless, an increasing proportion of the public is using the Internet for health information. The advantages of the Internet as a source of health information include convenient access to a massive volume of information,
ease of updating information, and the potential for interactive formats that promote understanding and retention of information. Health information on the Internet may make patients better informed, leading to better health outcomes, more appropriate use of health service resources, and a stronger physician-patient relationship.

The Healthcare Delivery System in India

India is one of the few countries in the world that have well established primary healthcare delivery and health information system interlinking with all different types of centers. The current health information system by and large was paper based on the MOHFW had already launched the integrated Disease Surveillance Project (IDSP) in the country with weekly health information flow through computerized and satellite-based system from each district up to the national level.

Transformation from manual to electronic system

To be more precise, the entire hospital system that is being practiced with the manual or hybrid system has to be completely transformed into electronic by using the latest information technology for example; HIS which contains the domain functionality; flowcharts, screens, database that are developed, tested and produced as application software for implementation in order to convert a hospital into a computerized format.

Signal processing

(EEG, EMG, and ECG): Computers are useful devices for processing electrical signals from various sources, such as ECG for detection of heart and EEG for analysis and detection of spike and sharp waves that can sometimes be missed by the neurologist.
**Image Processing:** Image processing (radiography, US, CT scanning, MRI/MRA, SPECT/PET scanning, cerebral angiography)

**Decision Support System:** Decision support systems are real-time computerized algorithms that help physicians in their clinical practice - specific information.

**Provider Order Entry Systems:** Computer-based provider order entry (CPOE) systems are potential benefits in terms of improving the quality of patient care and reducing the costs.

**The Hub of Clinical Information Systems**

The transition from handwritten paper medical records to electronic health records is essentially linked to the following challenging issues. The development of a (standard) healthcare record structure within healthcare organization merging the EHR component with other health information system components. A common medical terminology; to avoid incompatibilities and to guarantee the consistency, reusability, and sharable of the different components of a larger system. The increased availability of communication facilities to internal and external healthcare providers (e.g., GPs, other healthcare organizations). An adequate formalization of medical knowledge to accommodate users with more intelligent features. The availability of an audit train to facilitate the detection of data alteration and to address potential security violations Scalability: Multidisciplinary institutions require an HER system that can readily scale as the institution grows while maintaining local ownership of data.
Future of Health Records

The future of the Health Records is said to be the Personal Health Records (PHR) PHR is an electronic repository in which a person can store his or her health-related information securely and privately and also share that information with multiple health care providers or others are the patient's discretion. PHRs will give patients access to tools for managing this information, some of which patients will enter themselves and some which will come from their clinical care provider, pharmacy, a public health authority, or other sources.

Organization of Health Care Administration in the Country

Ministry of health and Family Welfare is the apex executive organization dealing with the issues of Health and Family Welfare health and in the country as per the guidelines enshrined in the constitution of India and depicted in the national health policy and in accordance with the policy decisions of the cabinet. Health is the state subject in India and the Ministry of Health and Family welfare acts as a Coordinator between the state Health departments, Planning commission, central council of Health etc. besides implementing various national programs and items under unions list and concurrent list. In the process it is aided by the Directorate General of Health Services.

3.5. HEALTH CARE SERVICE PROVIDERS

3.5.1. HOSPITALS

A hospital is a health care institution providing patient treatment with specialized staff and equipment. The best-known type of hospital is the general hospital, which has an emergency department. A district hospital typically is the major health care facility in its region, with large numbers of beds for intensive
care and long-term care. Specialised hospitals include trauma centres, rehabilitation hospitals, children's hospitals, seniors' (geriatric) hospitals, and hospitals for dealing with specific medical needs such as psychiatric problems (see psychiatric hospital), certain disease categories. Specialised hospitals can help reduce health care costs compared to general hospitals. A teaching combines assistance to people with teaching to medical students and nurses.

The medical facility smaller than a hospital is generally called a clinic. Hospitals have a range of departments (e.g., surgery, and urgent care) and specialist units such as cardiology. Some hospitals will have outpatient departments and some will have chronic treatment units. Common support units include a pharmacy, pathology, and radiology.

Hospitals are usually funded by the public sector, by health organizations (for profit or nonprofit), health insurance companies, or charities, including direct charitable donations. Historically, hospitals were often founded and funded by religious orders or charitable individuals and leaders. Today, hospitals are largely staffed by professional physicians, surgeons, and nurses, whereas in the past, this work was usually performed by the founding religious orders or by volunteers. However, there are various Catholic religious orders, such as the Alexians and the Bon Secours Sisters, which still focus on hospital ministry today, as well as several Christian denominations, including the Methodists and Lutherans, which run hospitals. In accord with the original meaning of the word, hospitals were originally "places of hospitality", and this meaning is still preserved in the names of some institutions such as the Royal Hospital Chelsea, established in 1681 as a retirement and nursing home for veteran soldiers.
Multi Specialty Hospitals

The rapid advance of information technology in health settings has accentuated the importance of addressing the shortcomings of current health information system practices. Hospital Information Systems (HIS) play a significant role in providing quality healthcare services. However, HIS lag behind their industrial counterparts in providing quality (i.e., timely, accurate, complete) information and have been the target of many criticisms for alleged shortcomings.

The aim of this research is to identify the requirements for HIS to assist in providing quality healthcare service. To this end, questionnaires were designed to assess the level of satisfaction of different HIS users.

In addition, this research introduces the concept of loss function and relates it to repercussions of HIS customer dissatisfaction. There has been a major paradigm shift in healthcare information processing, corresponding to changes in the goals of the organization has now given way to emphasis on information. Central control has now evolved to empowerment.

Healthcare organizations are now much more concerned with each other and how they can exchange services, and necessarily patient information. This has forced information systems to leave the traditional Healthcare institutions’ physical boundaries. Now, more than ever, healthcare enterprises wield HIS to provide strategic, connected information to reduce costs, improve patient care, and increase service levels to their customers.
With the changes occurring in the context of the health sector reform processes information systems must have the ability to:

- Capture and deliver data at the point of service
- Support concurrent and multi-centric clinical and administrative information utilization and exchange
- Support intensive data manipulation
- Provide facilities to support synchronous, as opposed to retrospective, decision making

Health information systems (HIS) comprise the entire infrastructure, organization, workforce and components for the collection, processing, storage, transmission, display, dissemination and disposition of information in the healthcare industry1. In many clinical and hospitals settings, HIS tend to consist of enormous silos of paper-based or electronic data that are fragmented or of poor quality, exposing systems to risk of infraction. Rapid advances in information technology (IT) enablers and mobile devices such as personal digital assistants (PDA), or combination personal computer (PC)/phone devices, has done little to diminish these threats. Hospital Information System (HIS) has evolved as an integration system of order entry systems, an administrative system, and departmental subsystems within a hospital.

It has become more and more necessary for every health care staff in a hospital to use a computer terminal at almost everyday's works. Under this circumstances, HIS is expected to provide the staffs with various, world-wide information for decision making and better communication environment which can be used just on the computer terminals for everyday's works.

Furthermore, tele-communication between a central hospital and a satellite clinic/hospital has become more and more necessary especially when physician consult with domain experts in other hospitals.
Super Specialty Hospitals

Hospital or a super specialty hospital is an institution for health care providing patient treatment by specialized staff and equipment, and often, but not always providing for longer-term patient stays. Health is a primary human right and has been accorded due importance by the Constitution. Today, hospitals usually are funded by the public sector, by health organizations, (for profit or nonprofit), health insurance companies or charities, including by direct charitable donations. In history, however, hospitals often were founded and funded by religious orders or charitable individuals and leaders. Similarly, modern-day hospitals are largely staffed by professional physicians, surgeons, and nurses, whereas in history, this work usually was performed by the founding religious orders or by volunteers.

Types of specialized hospitals include trauma centers, rehabilitation hospitals, children's hospitals, seniors' (geriatric) hospitals, and hospitals for dealing with specific medical needs such as psychiatric problems (see psychiatric hospital), certain disease categories, and so forth. A hospital may be a single building or a number of buildings on a campus. A teaching hospital combines assistance to patients with teaching to medical students and nurses and often is linked to a medical school, nursing school or university. Hospitals vary widely in the services they offer and therefore, in the departments they have.

Some of the top hospitals in India includes All India Institute Of Medical Science, Delhi, Post Graduate Institute Of Medical Education And Research, Chandigarh, Apollo Hospital, Chennai, Christian Medical College, Vellore, National Institute Of Mental Health And Neuro Sciences, Bangalore, Bombay Hospital, Mumbai etc.

To name a few, Health is a primary human right and has been accorded due importance by the Constitution through Article 21. Though Article 21 stresses upon
state governments to safeguard the health and nutritional well being of the people, the central government also plays an active role in the sector.

Recognizing the critical role played by the Health Industry, the industry has been conferred with the infrastructure status under section 10(23G) of the Income Act. The healthcare sector is one of the most challenging and fastest growing sectors in India. Revenues from the healthcare sector account for 5.2 per cent of the GDP, making it the third largest growth segment in India. The healthcare industry in the country, which comprises hospital and allied sectors, is projected to grow 23 per cent per annum.

According to McKinsey & Co, a leading industrial and management consulting organization, the Indian healthcare sector, including pharmaceutical, diagnostics and hospital services, is expected to more than double its revenues to Rs 2000 billion by 2010. Expenditure on healthcare services, including diagnostics, hospital occupancy and outpatient consulting, the largest component of this spend is expected to grow more than 125% to Rs 1560 billion by 2012 from Rs. 690 billion now.

The sector has registered a growth of 9.3 per cent between 2000-2009, comparable to the sectorial growth rate of other emerging economies such as China, Brazil and Mexico. According to the report, the growth in the sector would be driven by healthcare facilities, private and public sector, medical diagnostic and pathology labs and the medical insurance sector. Healthcare facilities, inclusive of public and private hospitals, the core sector, around which the healthcare sector is centered, would continue to contribute over 70 per cent of the total sector and touch a figure of US$ 54.7 billion by 2012. Adds a FICCI-Ernst and Young report, India needs an investment of US$ 14.4 billion in the healthcare sector by 2025, to increase its bed density to at least two per thousand populations. In India, the emergence of private Medicare services, especially through commercialization and corporatization, has contributed to the transformation.
The rapid commercialization of the medical practices with the establishment of multi-million rupee hospitals, nursing homes and diagnostic centres, specialized and general, the demand has registered a very high growth rate in the recent years.

3.5.2. Diagnostic Center

Health care is gaining increasing importance in recent years. The concept of health care is emerging from providing treatment to the diseased for improvement of overall health status and also maintenance of good health. In order to achieve the target of improving the health status of people in the country, tremendous efforts are required to be made not only by the government but also by the people. It is in this perspective that development of health care assumes significant importance. New challenges and new opportunities for investing in health care i.e. in hospitals, diagnostic centers and nursing homes etc. have arisen. Diagnostic centers have very good potential in upcoming cities, and towns of the North East.

A full-fledged diagnostic center will provide a comprehensive range of services. The ranges of services are stated below:

- Ultrasound
- X-Ray
- EMG
- ECG, EEG Simple X-Ray
- Special X-Ray
- Ultrasonography
- Pathological Tests

For the institution desiring a high-field MR system that’s comprehensive, affordable, and intuitive but doesn’t compromise on anatomical capabilities or image quality, the Brivo MR355* 1.5T is here. GE Healthcare’s new system, capable of outstanding brain, neck, spine, abdominal, MSK and vascular exams, aims to make advanced technology accessible and affordable worldwide—maintaining the company’s
commitment to healthy imagination. Jupiter Scan Centre in India is an excellent example. The multispecialty diagnostic centre is located in Thane, a city with a population of over 1.3 million in the Mumbai Metropolitan Region, which is the commercial hub of India. The Centre bought the new Brivo MR355 in October of 2010, and in the four months since installation, it has performed over 1,700 exams. This represents a 25% increase over what was previously possible with the Centre’s 0.5T system.

The Centre made the decision to buy the 1.5T Brivo system because they wanted to transition to a high-field platform with more advanced applications. Moreover, with the higher throughput capabilities, they can now conduct 30 patient exams per day, keeping the team of three radiologists and two MRI technicians working on Brivo MR355 very busy during a 12 to 13 hour schedule. “The Brivo MR355 uses the proven and highly homogenous magnet that is based on the high-end HDxt 1.5T platform, which enables broad field-of-view body, spine, and vascular exams in a single acquisition,” says V Raja, President and CEO of GE Healthcare, South Asia. “The Express Coil adds to the simplicity and functionality of the machine. Embedded just below the surface of the table, the patient’s anatomy is in an ideal location relative to the coil elements-only 8 mm-to preserve and maintain high signal-to-noise ratio.” These features have enabled the Centre to generate over 1,000 high-quality body (including spine and joint) exams. Additionally, new workflow automation features significantly reduce the number of inputs operators need to adjust before scanning—improving consistency and reducing overall examination times. The system’s intuitive user interface, Ready Interface, enables operators to consistently generate quality images.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the Diagnostic Center</th>
<th>Address and Contact no.</th>
<th>Speciality services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CLUMAX DIAGNOSTIC CENTER</td>
<td>No 68/150/3, Sri Lakshmi Tower, Jayanagar 3RD Block, Bangalore – 560011 Ph No.+(91)-8066495586</td>
<td>Diagnostic Centres, MRI Scan Centres, Blood Testing Centres</td>
</tr>
<tr>
<td>2</td>
<td>CENTER DIAGNOSTIC AFFAIR</td>
<td>No 68/150/3, Sri Lakshmi Tower, Bangalore – 560011, Ph No.+(91)-80-66495586</td>
<td>Diagnostic Centres, MRI Scan Centres, Blood Testing Centres</td>
</tr>
<tr>
<td>3</td>
<td>SS LABS</td>
<td>No.54/2, Shivaganga Cmplx, New Thippasandra, Bangalore – 560075 Ph No.+(91)-80-66498661</td>
<td>Diagnostic Centres, Blood Testing Centres, Ultrasound Scan</td>
</tr>
<tr>
<td>4</td>
<td>NOVA MEDICAL CENTRE</td>
<td>No.222/14, Opp To Palace Ground, Mekhri Circle, Sadashivanagar, Bangalore – 560080+(91)-80-66493833</td>
<td>Diagnostic Centres, Dermatologist Doctors, ENT Doctors</td>
</tr>
<tr>
<td>5</td>
<td>DOCTORS DIAGNOSTIC CENTRE</td>
<td>No 83 NK Complex, Kammanahalli MN RD, Kammanahalli, Bangalore – 560084</td>
<td>Diagnostic Centres, Blood Testing Centres, Ultrasound Scan</td>
</tr>
<tr>
<td>6</td>
<td>DAYA LABORATORIES</td>
<td>No.31,Ground Floor, Ashwath Nagar, Marathahalli, Bangalore – 560037 +(91)-80-66534473</td>
<td>Diagnostic Centres, Blood Testing Centres, Pathology Labs</td>
</tr>
<tr>
<td>7</td>
<td>ASIAN DIAGNOSTICS</td>
<td>No.28, Opp Vani Villas Hospital, Bangalore – 560002 Ph No.+ (91)-80-66495562</td>
<td>Diagnostic Centres, MRI Scan Centres, Blood Testing Centres</td>
</tr>
<tr>
<td>8</td>
<td>KANYA SHREE DIAGNOSTIC SERVICES</td>
<td>No.90/1,Chamundi Mahal, Book Store, Bommanahalli, Bangalore – 560068 Ph No. +(91)-80-66534155</td>
<td>Diagnostic Centres, Ultrasound Scan, X Ray Centres</td>
</tr>
<tr>
<td>9</td>
<td>SHRI KANAVI SIDDHESWARA POLY CLINIC</td>
<td>No.1585/5, Corporation Office, Jayanthi Nagar Bangalore – 56004Ph No.+ (91)-80-66536756</td>
<td>Diagnostic Centres, Paediatricians, General Physician Doctors</td>
</tr>
<tr>
<td>10</td>
<td>NISARGA DIAGNOSTICS</td>
<td>No.6B,1ST FLR, Bangalore – 560094 Ph No.+(91)-80-66497369</td>
<td>Diagnostic Centres, Blood Testing Centres, Medical Practitioners</td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Address</td>
<td>Contact Number</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>11</td>
<td>SHREYAA\n DIAGNOSTICS:</td>
<td>No.79, Opp Lakshmi Narasimha Temple, 16th A, Bangalore – 560011 Ph. No.:+(91)-80-66816638</td>
<td>Diagnostic Centres, Computerised Diagnostic Centres</td>
</tr>
<tr>
<td>12</td>
<td>CENTRAL LAB</td>
<td>No.F-3. Shivashankar Plaza, Rich mond Road, Bangalore – 560025 Ph. No.:+(91)-80-66816251</td>
<td>Diagnostic Centres, Blood Testing Centres, Pathology Labs</td>
</tr>
<tr>
<td>13</td>
<td>POORNA HEALTHCARE AND RESEARCH CENTRE PVT LTD</td>
<td>No.62, NR Basaveshwara School, 19th MN, Bangalore – 560010 Ph. No.:+(91)-80-66490465</td>
<td>Diagnostic Centres, MRI Scanning Centres</td>
</tr>
<tr>
<td>14</td>
<td>PEBBLES N PEARLS CHILD AND ADOLESCENT:</td>
<td>1795,9TH Main, HAL 3RD Stage, Jeevan Bima Nagar, Bangalore – 560075 Ph. No.:+(91)-80-66508223</td>
<td>Diagnostic Centres, Paediatrician Doctors, Medical Practitioners</td>
</tr>
<tr>
<td>15</td>
<td>PRUTHVI POLYCLINIC AND DIAGNOSTIC LAB:</td>
<td>Bellandur, Bangalore – 560103Ph. No.:+(91)-80-66389353</td>
<td>Diagnostic Centres, Blood Testing Centres, Diagnostic Centres For Health Check Up Package</td>
</tr>
<tr>
<td>16</td>
<td>KANVA DIAGNOSTIC SERVICES PVT LTD:</td>
<td>No. 2/10, Rajkumar Road, 4TH N Block, Rajajinagar, Bangalore – 560010 Ph. No.:+(91)-80-66495910</td>
<td>Diagnostic Centres, General Physician Doctors, Blood Testing Centres</td>
</tr>
<tr>
<td>17</td>
<td>VIJAY DIAGNOSTIC CENTRES</td>
<td>Sanjaynagar Main Road, Malleswaram, Bangalore – 560003 Ph. No.:+(91)-80-66379137</td>
<td>Diagnostic Centres, Blood Testing Centres, Pathology Labs</td>
</tr>
<tr>
<td>18</td>
<td>SURE FERTILITY INDIA PVT LTD</td>
<td>No.250, 24th Main Rd, J P Nagar, J P Nagar, Bangalore – 560078 Ph. No.:+(91)-80-66536580</td>
<td>Diagnostic Centres, Gynaecologist &amp; Obstetrician Doctors, Paediatricians</td>
</tr>
<tr>
<td>19</td>
<td>SAPTHAGIRI CENTRAL LABORATORY AND BLOOD BANK</td>
<td>No.15, Saphagiri Hospital, Chikasandara, Bangalore - 560090 08066496058 +(91)-80-66496058</td>
<td>Diagnostic Centres, 24 Hours Blood Banks, Blood Testing Centres</td>
</tr>
<tr>
<td>20</td>
<td>FOCUS DIAGNOSTIC CENTERS &amp; SPECIALITY CLINICS:</td>
<td>No 1213, Variar Bakery On Service Road, Rajajinagar, Bangalore - 560010 Ph. No.:+(91)-80-66499166</td>
<td>Diagnostic Centres, Orthopaedic Doctors, Neurologists</td>
</tr>
</tbody>
</table>

Source: GET IT yellow pages buying guide 2010-11, Bangalore
3.5.3. HEALTH INSURANCE

Health insurance is insurance against the risk of incurring medical expenses among individuals. By estimating the overall risk of health care and health system expenses, among a targeted group, an insurer can develop a routine finance structure, such as a monthly premium or payroll tax, to ensure that money is available to pay for the health care benefits specified in the insurance agreement. The benefit is administered by a central organization such as a government agency, private business, or not-for-profit entity. According to the Health Insurance Association of America, health insurance is defined as "coverage that provides for the payments of benefits as a result of sickness or injury. Includes insurance for losses from accident, medical expense, disability, or accidental death and dismemberment"

A contract between an insurance provider (e.g. an insurance company or a government) and an individual or his/her sponsor (e.g. an employer or a community organization). The contract can be renewable (e.g. annually, monthly) or lifelong in the case of private insurance, or be mandatory for all citizens in the case of national plans. The type and amount of health care costs that will be covered by the health insurance provider are specified in writing, in a member contract or "Evidence of Coverage" booklet for private insurance, or in a national health policy for public insurance.

In a country where less than 15 per cent of population has some form of health insurance coverage, the potential for the health insurance segment remains high. It seems that there is an urgent need to ramp up the health insurance coverage in the country as out-of-pocket payments are still among the highest in the world.

Furthermore, according to the statistics of the World Health Organization (WHO), in 2011, India has spent only 3.9 per cent of gross domestic product (GDP) on the health sector which is the lowest amongst the BRICS (Brazil, Russia, India, China, South Africa) member countries pack.
There are many reasons for poor health insurance penetration

- Poor awareness of need for insurance
- Lack of innovative products in medical insurance
- Lack of distribution channels
- Inadequate provider network
- Poor perception of consumers with regard to claims settlement and to a large extent the insurance companies are responsible for this perception.

The situation is however, changing slowly. People are realizing the benefit of health insurance; especially with the increase in lifestyle diseases such as diabetes, hypertension, asthma etc. and the insurance industry is likely see a 25 to 30 per cent growth over the next five years.

Moreover, amongst the BRICS nations, in 2011, Russia’s out-of-pocket expenses stood highest at 87.9 per cent closely followed by India (86 per cent), China (78.8 per cent), Brazil (57.8 per cent), and South Africa (13.8 per cent).

On the other hand, these expenses in developed economies of US and UK were comfortably poised at 20.9 per cent and 53.1 per cent respectively.

High out-of-pocket expense is exactly the reflection of low health insurance coverage in India. Sudip Bandyopadhyay, President, Destimoney Securities, opined, “We don’t have the insurance to cover and thus we end up paying from our own pockets. Once the penetration of health insurance increases, out of pocket payments will come down. In US and all, health insurance coverage is around 80 per cent”.

Reasoning out the low health insurance coverage in India, Antony Jacob, CEO, Apollo Munich Health Insurance, said, “Only about 12-13 per cent of population has some form of health insurance coverage, including those who are covered through some form of government schemes. People are yet to accept health
insurance as a financial tool for medical emergencies. They usually procrastinate when it comes to buying health insurance unless they are faced by a challenging situation.” Although the Indian health insurance market still lags behind other countries in terms of penetration yet the health insurance segment is rising. It continues to be one of the most rapidly growing sectors in the Indian insurance industry with gross written premiums for health insurance increased by 16 per cent from Rs 13,212 crore in 2011-12 to Rs 15,341 crore in 2012-13.

Health insurance segment still remains an unexplored territory in India. Jacob at Apollo Munich Health Insurance asserted, “Health insurance has become one of the most prominent segments in the insurance space today and is expected to grow significantly in the next few years. As spending on healthcare in India is expected to double in a couple of years, we believe that health insurance will eventually become the biggest contributor in the non-life segment.”

Furthermore, in the present scenario, the health insurance industry is dominated by four public sector entities (National, New India, Oriental, and United India) that together have 60 per cent market share. The rest of the share is with 17 private sector players, of which four are standalone health insurance players (Star Health, Apollo Munich, Max Bupa, and Religare Health). ICICI Lombard continued to be the largest private sector non-life insurance company, with market share of 9.74 per cent. Standalone health insurers have got a boost by the move taken by Insurance Regulatory and Development Authority (IRDA) in early 2013. All the four exclusive health insurance companies will be tying with the banks across the country and that will help them to move to the next level. The penetration of health insurance is now expected to increase with banks pushing for it through banc assurance tie up.”
### TABLE NO.: 3.2
HEALTH INSURANCE PENETRATION

<table>
<thead>
<tr>
<th>Country</th>
<th>Out of Pocket expenditure as a percentage of private expenditure on health (2011)</th>
<th>Total expenditure on Health as percentage of GDP (2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>87.9</td>
<td>6.2</td>
</tr>
<tr>
<td>India</td>
<td>86</td>
<td>3.9</td>
</tr>
<tr>
<td>China</td>
<td>78.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Brazil</td>
<td>57.8</td>
<td>8.9</td>
</tr>
<tr>
<td>United kingdom</td>
<td>53.1</td>
<td>9.3</td>
</tr>
<tr>
<td>USA</td>
<td>20.9</td>
<td>17.9</td>
</tr>
<tr>
<td>South Africa</td>
<td>13.8</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Source: WHO Report 2011

Health insurance is an emerging important financial tool in meeting health care needs of the people of INDIA. Role in Community-based health initiative (CBHI) is to be further explored so that the disadvantaged section gets maximum benefit. In India at present no Pan-India Model of Health integrity. All different forms need to be explored.

#### 3.5.4. PHARMA SECTOR

The Indian pharmaceutical industry, now a $17 billion (over Rs 68,000 crore) Industry, has shown tremendous progress in terms of infrastructure development, technology base creation and a wide range of products. It has established its presence and determination to flourish in the changing environment. The industry now produces bulk drugs belonging to all major therapeutic groups requiring complicated manufacturing technologies. Formulations in various dosage forms are being produced in GMP compliant facilities. Strong scientific and technical manpower and pioneering work done in process development have made these possible. The country now ranks 4th worldwide accounting for 8% of world's production by volume and
1.5% by value. It ranks 17th in terms of export value of bulk actives and dosage forms. Indian exports are destined to more than 200 countries around the globe including highly regulated markets of US, Europe, Japan and Australia.

There are 20,000 laboratories in India's pharmaceutical industry and the scale of the pharmaceutical market amounts to Euro 5.3 billion. The leading 250 pharmaceutical companies control 70% of the market with market leader holding nearly 7% of the market share.

The following attributes constitute the basis of the technological strengths of the Indian Pharmaceutical Industry:-

- Self-reliance displayed by the production of 70% of bulk drugs and almost the entire requirement of formulations within the country
- Low cost of production
- Low R&D costs
- Innovative Scientific manpower
- Excellent and world-class national laboratories specialising in process development and development of cost effective technologies.
- Increasing balance of trade in Pharma sector
- An efficient and cost effective source for procuring generic drugs especially the drugs going off patent in the next few years.
- An excellent centre for clinical trials in view of the diversity in population

The Indian pharmaceutical market (IPM) is currently valued at 72,069 crore INR as against 65,654 crore INR in 2012. Though the market value has seen an increase, the sector overall has experienced a slowdown with its growth going down to 9.8% from 16.6% in 2012. This slowdown can be attributed to the new drug pricing policy and the regulatory interventions over the last year,
The industry is witnessing additional challenges like delays in clinical trial approvals, uncertainties over the FDI policy, a uniform code for sales and marketing practices and compulsory licensing. The slowdown is also evident from the number of new product launches, which has gone down from approximately 1900 in year 2010 to 1700 in year 2012. The contribution of chronic therapies to the IPM has gone up from 27% in 2010 to 30% in 2013. Chronic therapies (cardio, gastro, CNS and anti-diabetic) have outperformed the market for the past four years and are growing at a rate of 14%, faster than the acute therapies (anti-infectives, respiratory, pain and gynaec) which grew at 9.6%.

According to Brand India Equity Foundation, the Indian pharmaceutical market is likely to grow at a compound annual growth rate (CAGR) of 14-17 per cent in between 2012-16. India is now among the top five pharmaceutical emerging markets of the world. Exports of pharmaceuticals products from India increased from US$6.23 billion in 2006-07 to US$8.7 billion in 2008-09 a combined annual growth rate of 21.25%. (Source: PricewaterhouseCoopers (PWC) in 2010, India joined among the league of top 10 global pharmaceuticals markets in terms of sales by 2020 with value reaching US$50 billion.

**RETAIL PHARMACY SERVICES**

Getting the right IT system for hospital pharmacy or retail pharmacy chain can be quite a challenge. Such IT systems need to be interoperable with Hospital Information System (HIS), third-party pharmacy benefit networks, and payer systems, among others. They also need to have an efficient inventory management and supply chain management system to ensure that the inventory is stocked at appropriate levels. All these systems coupled with Point of Sale (POS) systems need to be tightly integrated to ensure operational efficiency.
Cybage understands the IT needs of hospital pharmacy and retail pharmacy chains. With expertise in implementing solutions cutting across business processes, Cybage is rightly placed to help you take your operational efficiency to the next level.

**EXHIBIT NO: 3.1 RATAIL PHARMACY CHAIN**

![Retail Pharmacy Chain Diagram]

3.5.5. **NURSING SERVICE**

**INTRODUCTION:**

Nursing profession is considered a caring profession in those days it was an art and a vocation. Now it is considered as a scientific profession. Nursing care is defined as the care of the patient with regard to nursing needs, with the ever increasing dimension of medical sciences quantitatively and qualitatively Nursing care is becoming more and more complex with its management services.

**Nursing Services:**

WHO expert committee on nursing defines the nursing services as the part of the total health organization which aims to satisfy major objective of the nursing services is to provide prevention of disease and promotion of health. Nursing service is the part of the total health organization which aims at satisfying the nursing needs of the patients/community. In nursing services, the nurse works with the members of
allied disciples such as dietetics, medical social service, pharmacy etc. in supplying a comprehensive program of patient care in the hospital.

**NURSING OBJECTIVES**

- Maximum comfort and happiness by way of pleasant surroundings.
- Qualitative/comprehensive care to the patient.
- Care based on the patient’s needs.
- Accurate assessment of illness.
- Adequate material resources at all times.
- Health education to the patient and attendants.
- Managerial skills as and when required.
- Privacy at all levels

**EFFECTIVE NURSING:-**

An effective nursing is always based on nursing process which is an organized and systematic approach to nursing care that prioritizes patient assessment and management.

Entire nursing process consists of following phases:

- **ASSESSMENT**- This is intended to ascertain the whole nursing process.
- **PLANNING AND IMPLEMENTATION**- The nurse formulates plans and implements the care.
- **EVALUATION**- Decides whether the action taken has met the identified requirements. This is the final step of care. Also, review of the whole care plan. Without this no quality care or comprehensive care is possible to patients.
FACTORS TO BE CONSIDERED IN PLANNING HOSPITAL NURSING SERVICES:

- Number and type of patient.
- Number of beds and type of ward.
- The services required.
- Procedures/techniques necessary for care.
- Number and type of personal needed to perform care effectively.
- Physical facilities.
- Provisional of equipment and supplies.

3.5.6. MEDICAL TOURISM

Medical tourism or health tourism is the travel of people to another country for the purpose of obtaining medical treatment in that country. Traditionally, people would travel from less developed countries to major medical centers in highly developed countries for medical treatment that was unavailable in their own communities. The recent trend is for people to travel from developed countries to third world countries for medical treatments because of cost consideration, though the traditional pattern still continues. Another reason for travel for medical treatment is because some treatments may not be legal in the home country, such as some fertility procedures.

Some people travel to obtain medical surgeries or other treatments. Some people go abroad for dental tourism or fertility tourism. People with rare genetic disorders may travel to another country where treatment of these conditions is better understood. However, virtually every type of health care, including psychiatry, alternative treatments, convalescent care and even burial services are available. Medical tourists are subject to a variety of risks, which may include deep vein
thrombosis, tuberculosis, amoebic dysentery, paratyphoid, poor post-operative care, and/or others.

INTERNATIONAL HEALTHCARE ACCREDITATION

International healthcare accreditation is the process of certifying a level of quality for healthcare providers and programs across multiple countries. International healthcare accreditation organizations certify a wide range of healthcare programs such as hospitals, primary care centers, medical transport, and ambulatory care services.

The oldest international accrediting body is Accreditation Canada, formerly known as the Canadian Council on Health Services Accreditation, which accredited the Bermuda Hospital Board as soon as 1968. Since then, it has accredited hospitals and health service organizations in ten other countries.

In the United States, the accreditation group Joint Commission International (JCI) was formed in 1994 to provide international clients education and consulting services. Many international hospitals today see obtaining international accreditation as a way to attract American patients.

Joint Commission International is a relative of the Joint Commission in the United States. Both are US-style independent private sector not-for-profit organizations that develop nationally and internationally recognized procedures and standards to help improve patient care and safety. They work with hospitals to help them meet Joint Commission standards for patient care and then accredit those hospitals meeting the standards.

The different international healthcare accreditation schemes vary in quality, size, cost, intent and the skill and intensity of their marketing. They also vary in terms of cost to hospitals and healthcare institutions making use of them.
Increasingly, some hospitals are looking towards dual international accreditation, perhaps having both JCI to cover potential US clientele, and Accreditation Canada. As a result of competition between clinics for American medical tourists, there have been initiatives to rank hospitals based on patient-reported metrics.

**Other organizations providing contributions to quality practices include:**

The United Kingdom Accreditation Forum (UKAF) is an established network of accreditation organisations with the intention of sharing experience good practice and new ideas around the methodology for accreditation programmes, covering issues such as developing healthcare quality standards, implementation of standards within healthcare organisations, assessment by peer review and exploration of the peer review techniques to include the recruitment, training, monitoring and evaluation of peer reviewers and the mechanisms for awards of accredited status to organisations.

**Employer-sponsored health care in the US:**

Some US employers have begun exploring medical travel programs as a way to cut employee health care costs. Such proposals have raised stormy debates between employers and trade unions representing workers, with one union stating that it deplored the "shocking new approach" of offering employees overseas treatment in return for a share of the company's savings. The unions also raise the issues of legal liability should something go wrong, and potential job losses in the US health care industry if treatment is outsourced.

Employers may offer incentives such as paying for air travel and waiving out-of-pocket expenses for care outside of the US. For example, in January 2008, Hannaford Bros., a supermarket chain based in Maine, began paying the entire
medical bill for employees to travel to Singapore for hip and knee replacements, including travel for the patient and companion. Medical travel packages can integrate with all types of health insurance, including limited benefit plans, preferred provider organizations and high deductible health plans.

In 2000, Blue Shield of California began the United States' first cross border health plan. Patients in California could travel to one of the three certified hospitals in Mexico for treatment under California Blue Shield. In 2007, a subsidiary of BlueCross BlueShield of South Carolina, Companion Global Healthcare, teamed up with hospitals in Thailand, Singapore, Turkey, Ireland, Costa Rica and India. A 2008 article in Fast Company discusses the globalization of healthcare and describes how various players in the US healthcare market have begun to explore it.

3.6. CHALLENGES FOR HEALTH CARE MANAGEMENT

1) Diabetes Capital of the World

According to the International Diabetes Federation (IDF), India is expected to be the diabetes capital of the world, with the number of diabetes cases expected to increase from nearly 60 million in 2011 to 100 million by 2030.

2) Rising Costs & Increased Customer Expectation

Reason being the health facilities are increasingly run by corporate and funded through private equity, which demands better management practices.

3) Dual disease Burden

Changes in the lifestyle of the people is the result of dual disease burden.
4) Private Partnerships

The Public Sector is keen to continue to encourage private investment in the healthcare sector and is now developing Public – Private Partnerships i.e. PPP models to improve availability of healthcare services and provide healthcare financing.

India has witnessed an increase in the number of patients from Africa, CIS countries, Gulf and SAARC nations, Pakistan, Bangladesh and Myanmar, who mainly come for organ transplant, orthopedic, cardiac and oncology problems.

The country's healthcare system is developing rapidly and it will continue to expand in terms of services and spending in both the public as well as private sectors. This is creating a large market for hospital information systems and other healthcare-related IT solutions. India, thus offers favorable demographic virtues which are an attractive market for healthcare providers and investors in India.

3.7. GLOBAL PERSPECTIVE OF HEALTH CARE INDUSTRY

ASIA PACIFIC

Healthcare System – HONG KONG

Hong Kong has 43 public hospitals and 12 private hospitals that serve a population of 6.83 million people with 25 million visitors to the country per year. It boasts one of the world’s lowest infant mortality rates and longest life expectancies.

Hong Kong spends five and a half percent of its GDP on healthcare: 57 percent in the public sector and 43 percent in the private sector. Public funding is governed by the Food and Health Bureau (FHB), one of 11 public bureaus responsible for public policies. Within the FHB, the Department of Health oversees public health measures and the Hospital Authority (HA) manages all public hospitals and government outpatient clinics.
The HA was formed in 1990 to manage all public healthcare services including 43 public hospitals/institutions, 47 specialty outpatient clinics and 74 general outpatient clinics. The public sector has a total of 27,742 hospital beds and 29,000 clinical staff delivering over one million inpatient visits, two million emergency visits and 13 million outpatient visits annually. One hundred percent of long-term care, 93 percent of inpatient and tertiary care and 24 percent of primary care are provided by the HA with the balance provided by the private sector.

Healthcare System – INDIA

At a world-class hospital in New Delhi, a cardiovascular surgeon performs endoscopic cardiac surgery using the world’s most advanced tele robotic surgical system. Less than 40 kms away, a traditional (non-qualified and untrained) birth attendant manages a child birth at a home in the capital’s slum.

This case in point reflects one of the numerous stark realities pertaining to the delivery of healthcare services in India. With a population of approximately 1.13 billion, the world’s largest democracy has a varied healthcare landscape.

When it comes to healthcare, Price water house Coopers has suggested that there are two Indians: one that provides high-quality medical care to middle-class Indians and medical tourists and the other (in which the majority of the population lives) in which limited or no access to safe, quality care is available.

Medical tourism is exploding in India. The country’s private health sector attracts a continuous influx of patients from overseas and “corporate hospitals” that offer world-class medical treatment at fees that are 10-15 times lower than anywhere else in the world.
The rest of India suffers from historically poor public health infrastructure and grapples with intransigent healthcare issues such as burgeoning HIV-AIDS cases and other chronic and degenerative diseases.

Healthcare in India is governed by the Ministry of Health and Family Welfare through its three departments: the Department of Health, the Department of Family Welfare and the Department of AYUSH (Ayurveda Unani, Siddha and Homeopathy). Healthcare services are provided through both the public (state and federal) and fee-levying private sectors.

The Indian healthcare infrastructure consists of:

- 15,000+ hospitals (two-thirds of which are public owned);
- 875,000 hospital beds (40 percent of which are private);
- 500,000 doctors (18,000 new doctors are admitted into the delivery system annually);
- 737,000 nurses;
- 170 medical colleges;
- 23,000 primary health centers; and
- 132,000 sub-centers.

The private sector accounts for approximately 80 percent of healthcare expenditure of the remaining 20 percent; more than three-fourth is funded by respective state governments. Today, the Indian Healthcare sector is valued at approximately $34 billion and comprises six percent of GDP. At present, medical tourism and health insurance markets are the key growth opportunities within the Indian healthcare sector. There has been significant growth in the medical tourism sector with the corporate hospitals focusing on this sector. The health insurance market has been slow to get traction.
The challenges faced in the Indian healthcare sector include a weak and inadequate physical infrastructure, inability to provide health insurance to all who need it, a lack of availability of trained medical and paramedical personnel, and limited geographic availability of public health facilities who suffer from operational inefficiency.

Healthcare System – JAPAN

Japan, the world's second largest economy, claims to some of the best health statistics internationally. “Japanese citizens go to the doctor three times as often as Americans, have more than twice as many MRIs, use more drugs, and spend more days in the hospital, yet Japan spends about half as much per capita as the US. By law, everyone must buy health insurance – either through an employer or a community plan – and unlike in the US, insurers cannot turn down a patient for a pre-existing illness, nor are they allowed to make a profit.”

Healthcare System - REPUBLIC OF KOREA (SOUTH KOREA)

The following facts will display the status of healthcare system exist in South Korea.

- Population (July, 2009 estimate): 48,379,392
- GDP per capita (2009 estimate): US $25,000
- General Government Expenditures on Health (% of GDP – 2006): 11.9 percent
- Internet Users (2009): 55.59 million
Healthcare System - MALAYSIA

As of 2006, the population of Malaysia was approximately 27 million. Approximately five million Malaysians live in East Malaysia and 21 million live in the Malaysian Peninsula. The annual growth rate is 2.4 percent and approximately one third of the population is under the age of 15. Sixty-three percent of the population is between the ages of 15 – 64, while only five percent are over the age of 65. Malays comprise more than half of the population; Chinese account for approximately 24 percent; Indians, seven percent; indigenous peoples, 11 percent; and all others, 8 percent. The unemployment rate in Malaysia is three percent of its labor force and the literacy rate is almost 90 percent.

Malaysia enjoys a comparatively high standard of health, the result of long-established healthcare and medical services. There are only three large hospitals in Malaysia that are capable of supporting an HIE system: Subang Jaya Hospital, General Hospital and Penang Adventist Hospital. They are all located in the capital of Kuala Lumpur.

Healthcare System - NEW ZEALAND

New Zealand and its larger neighbor, Australia, developed their healthcare system on the centralized model of universal healthcare found in England; it includes a public sector healthcare system funded by the central government and a much small number of private healthcare systems.

The public healthcare system provides services to 77 percent of New Zealand’s population of more than four million residents. 92 Twelve and a half percent of New Zealand’s population is 65 years or older and the majority of the population is of European ethnicity (78.5 percent), followed by Maori (14 percent), Asian (9 percent) and Pacific Island peoples (6.6 percent).
Public healthcare funding is managed through the New Zealand Ministry of Health who directs national funding to District Health Boards (DHBs). Twenty-one DHBs have been created since January 2001 when the New Zealand Health and Disability Act was enacted. On a local basis, the DHBs are responsible for healthcare spending and management for the population within each district. Regionally, the 21 DHBs are represented by four large geographical regions: North, Midland, Central and South.

New Zealand consists of two major islands – the North Island and the South Island. The majority of New Zealand’s population (76 percent) resides in the North Island with approximately one third living in New Zealand’s largest city, Auckland. More than half of the South Island’s population lives in the Canterbury region, of which Christchurch is the largest city.

More than 50 percent of all New Zealanders live in urban areas represented by the five largest DHBs: Auckland (North DHB region), Hamilton (Midland DHB region), Napier-Hastings (Central DHB region), Wellington (Central DHB region) and Christchurch (South DHB region).

The Ministry of Health has set priority objectives for the population’s health, all of which can be implemented by using electronic records.

These include:

- Reduced smoking;
- Improved nutrition, reduced obesity and an increased level of physical activity;
- Reduced rate of suicide/suicide attempts;
- Minimizing harm caused by alcohol, illicit and other drug use to individuals and the community;
• Reducing the incidence and impact of cancer;

• Reducing the incidence and impact of cardiovascular disease;

• Reducing the incidence and impact of diabetes; and,

• Ensuring access to appropriate child healthcare services including well child, family healthcare and immunizations.

Based on statistics from the New Zealand Health Information Service, there were 445 hospitals in New Zealand in 2002 – 85 publicly funded and 360 private. The total number of hospital beds was 23,825, with 12,484 in public hospitals and 11,341 in private care. There were 572,232 inpatient discharges (with an average length of stay of 8.3 days) and 250,154 day patient discharges (a person admitted and discharged on the same day) from public hospitals.

Healthcare System - PHILIPPINES

Over recent decades, the Philippines has made steady progress in improving life expectancy at birth (70 years in 2003) and child and infant mortality (40 and 29 deaths per 1,000 live births in 2003, respectively).

Poverty and economic inequality remain high in the country and are major determinants of unequal health outcomes – under-5 mortality of the poorest 20 percent of households is 2.7 times higher than the richest 20 percent and persistent high child malnutrition rates exist. Philippines remains a high prevalence country for tuberculosis (TB), but has made very good progress in TB control. HIV/AIDS prevalence is low (adult 15-49 prevalence of 0.03 percent), but the epidemic is now thought to be “hidden and growing” due to evidence of increased rates of risk associated behavior. Maternal mortality is high (180 deaths per 100,000 live births in 1998) and is a priority concern of the Government as demonstrated by the fact that it
was the focus of the World Bank-financed Second Women’s Health and Safe Motherhood Project approved in 2005.

Access to health services is inequitable because of financial barriers to care for the poor and unequal distribution of healthcare capacity. There is substantial private financing for healthcare at 54.9 percent, most of which (44.9 percent of total health expenditure) is from out-of-pocket. Even for the insured, there is substantial extra-billing by private healthcare providers. A little more than half of doctors are in private practice and a little under half of hospitals are private. Though public healthcare facilities provide a more affordable service for the poor, in public hospitals patients typically face additional costs due to lack of availability of drugs and supplies, as well as long waits and over-crowding in many public facilities.

The above situation can in part be attributed to low public expenditure on health relative to other low-middle income countries (US $10 per capita per year, or 1.1 percent of GDP, in 2003). Private health insurance serves a relatively small, higher income segment of the population and has grown gradually to account for around 11 percent of health expenditure by 2003.

Prices of drugs in the Philippines is known to be one of the most expensive in Asia. Drugs sold in the Philippines, according to Secretary Pagdanganan, are 40 percent to as high as 200 percent more expensive than those sold in other countries. This is despite that the fact the country was the first to pass a Generic Drugs Act.

Healthcare System – SINGAPORE

Singapore is an island economy with a population of 4.8 million in 2008. Its multi-racial society comprises of three major ethnic groups—the Chinese, Malay and Indians. Singapore boasts one of the world’s lowest infant mortality rates and longest life expectancies.
The top-ranked healthcare system (ranked 6th overall in WHO World Health Report 2000) comes at a relatively low cost. Over the past decade, the total expenditure on healthcare averages between three to four percent of GDP. In 2007, the government expenditure on healthcare was 6.6 percent of total government expenditures.

On the primary care front, private practitioners provide 80 percent of primary healthcare services while government clinics (called “polyclinics”) provide the remaining 20 percent. For secondary and tertiary care, the public hospitals provide 80 percent of the more costly hospital care, with the remaining 20 percent provided by private hospitals.

The public healthcare delivery system comprises of seven acute care hospitals, nine specialty centers and 17 primary care polyclinics. In 1999, these institutions were restructured into two vertically integrated clusters: National Healthcare Group (NHG) and Singapore Health Services (Sing Health). Both are owned by the government and partially funded through subsidies.

The private healthcare sector comprises 16 private hospitals and approximately 1,600 primary care clinics. A vibrant charity sector includes four community hospitals that provide intermediate care, and more than fifty nursing homes and hospices that provide long-term step down care.

SOUTH AMERICA
Healthcare System – BRAZIL

With a total area of 8.5 million km², the Federal Republic of Brazil includes 26 states, the Federal District, and 5,560 municipalities. Each level of government has political, fiscal, and administrative autonomy, with exclusive and concurrent competencies as well as joint responsibilities. The government has a presidential
system. The Brazilian population is about 190 million with an average population density of 21.9 inhabitants per km², with values ranging from a high of 86.1 in the Southeast region to a low of 3.9 in the North.

Healthcare System - CHILE

Chile is situated in the extreme southwest of South America, bordering Peru, Bolivia and Argentina. Its continental and insular surface area is 756,626 km², and its Antarctic territory covers 1,250,000 km². In June of 2008, Chile’s population was 16,454,143 with a growth rate of 0.905 percent per year. The GDP (official exchange rate) is $181.5 billion with real growth rate about four percent in 2008.

Chile’s medical sector is small but extremely competitive. Currently, the country spends approximately seven percent of its GDP on healthcare.

NORTH AMERICA:
Healthcare System - CANADA:

Canada has a predominantly publicly financed and administered healthcare system with 13 interlocking provincial and territorial health insurance plans. The system is designed to ensure that all eligible residents have universal access to medically necessary hospital and physician services, regardless of age or income and without direct charges at the point of service. Adopted in 1984, the Canada Health Act (CHA) defines the national principles, symbolic of the underlying values of equality and solidarity that govern the healthcare system.

These principles call for a system that is:

- Publicly administered
- Comprehensive
- Universal
- Portable
- Accessible
Many other organizations and groups, including health professional associations and accreditation, education, research and voluntary organizations, contribute to healthcare in Canada. Few Canadian industries compare in size and complexity to Canada's public healthcare sector. More than 100 health regions, 900 hospitals, thousands of clinics and physician offices and a healthcare workforce of approximately 400,000 coordinate care delivery for a population of just over 33 million. Healthcare is also one of the country's most information-intensive industries with approximately 2,000 healthcare transactions per minute, all requiring documentation and information sharing.

**Each year, the system generates:**

- 440 million laboratory tests
- 382 million prescriptions
- 322 million office-based physician visits
- 35 million diagnostic images
- 2.8 million In-patient hospitalizations

While healthcare is often defined as a core value of Canadian society, the system has come stress in recent years due to various factors, including

- Aging population: one Canadian in five will be 65 years old by 2026;
- Shortage of physicians, in particular general practitioners and some specialists such as radiologists and oncologists: creating a sporadic pattern of care across channels;
- Care settings: continue to shift from acute to home care and other alternatives; and rising costs: healthcare costs were expected to exceed $160 billion CAD in 2007.
3.8 TECHNOLOGY AND HEALTH CARE FUNCTION

Technology will be a game changer in the manner in which healthcare services will be delivered in India. The private sector will be the major driving force behind technology adoption in the Indian healthcare segment. To optimize costs and effectively manage operations, IT solutions will become an integral part of process management, patient care and the management information system (MIS) in hospitals. With the health insurance sector poised for major growth in the coming decade, increasing demand from this sector for more efficient systems for storage and retrieval of information will put pressure on hospitals and other healthcare providers to imbibe technology to modernize existing infrastructure.

The convergence of healthcare with upcoming technologies such as cloud computing and wireless technologies will play a key role in improving accessibility and meeting the challenge of manpower shortage. The coming years are expected to witness greater deployment of tools such as telemedicine, tele radiology, hospital information systems (HIS)/hospital management information systems (HMIS), online or electronic medical records (EMR) etc.

The healthcare sector is poised to embrace cloud computing in a big way in the coming decade. Cost-effective cloud-based solutions are expected to drive increased adoption of HMIS and EMRs. The various benefits that can be derived, such as easy accessibility irrespective of geographical location, fewer errors, and fast response in times of emergencies, patient convenience, among others, will drive increased adoption.

To drive improved efficiencies, more hospitals are likely to seek automation for their workforce management, administration, finance, billing, patient records and pharmacies. Along with the growing popularity of digitization in hospitals, market
penetration of picture archiving and communication systems (PACS) is likely to increase further in the coming years.

The exhibit below indicates the factors that will drive demand for increased technology adoption going forward.

**EXHIBIT NO : 3.2 – FACTORS INFLUENCING THE DEMAND**

![Diagram showing factors influencing the demand for technology adoption in healthcare.]

Source: Computed Secondary data

Read more about the emerging trends in the Indian healthcare sector in the article, 'Foreseeing the Future of Healthcare.'

However, the road to greater technology adoption is not going to be without its share of challenges. Currently, the IT budget for Indian hospitals does not exceed 10% of their revenues, substantially lower than allocation on IT in hospitals in the West. Moreover, despite the long-term gains in efficiencies and costs that can be achieved, the initial high capital investments may act as impediments for organizations looking to invest in advanced technology products/services. Further, lack of in-house IT expertise, lack of standards, reluctance/resistance of staff, inadequate support from the IT vendors, etc are some of the bottlenecks that will have to be effectively dealt with in this direction.
3.9 RESEARCH AND DEVELOPMENT

Indian Council for Medical Research (a Government of India agency) conducts research in areas related to healthcare. The quality of research being done represents a mixed picture—while research in some institutes is on par with those being conducted in other parts of the world—the research on use of stem cells for movement disorders being a case in point, the research output on respiratory infections, diarrheal diseases, cardio vascular diseases, is insignificant compared to the burden of disease due to these conditions in India. India is also a big destination for clinical trials given our population size and ethnic diversity. Government of India has given incentives for research and development in health, pharma etc—expenses incurred on pharma R&D are tax deductible.

There is an immediate need for strategic planning to improve the level of research and also to collate and disseminate findings from various small scale community-based research projects that are being performed across the country. Creating a network of research and innovation centres-'knowledge clusters' will help improve the efficacy of research.

Institutions such as Public Health Foundation of India are a timely introduction in the field of public health and would go a long way in addressing the gap in Public Health Research appropriately.

The National Rural Health Mission has given a thrust on the rural healthcare system in India. For the first time in the country, infrastructure standards have been introduced for all public health facilities—primary, secondary and tertiary. The Indian Public Health Standards specify the infrastructural requirements for all facilities with the aim of standardising the quality of care imparted in all facilities. However,
implementation is still an issue—while the new facilities are being built as per IPHS, the existing facilities across the country need upgradation.

There is no mandated quality and patient safety standards which private hospitals are required to adhere to—the current standards are more voluntary in nature. National Accreditation Board for Hospitals and Healthcare providers has set up some standards on quality and patient safety but accreditation is a voluntary process. Similar standards exist for diagnostic laboratories, blood banks and wellness centres etc. All large hospitals, however, have internal clinical audit processes through which they review events within the hospitals and institute appropriate corrective measures. Since the standards are voluntary in nature and not mandatory, acceptability by providers is slow. However, the situation may improve if the purchasers of healthcare (insurance companies, corporate, government agencies) insist on adherence to standards before empanelling providers.

Current trends that are shaping the Indian healthcare sector

Some of the current trends are:

- Higher economic growth and higher disposable income leading to higher per capita health Spend.
- Changing profile of disease from more infectious diseases to more lifestyle diseases which are chronic in nature.
- Health status of the urban poor is a growing concern, owing to the increase in migration to cities, and congested and unhygienic living conditions.
- Increased role of private sector in a completely unregulated manner is creating several qualities of service issues.
- Emergence of public private partnerships.
• Increased penetration of private health insurance, but the share of out-of-pocket purchases continues to be an overwhelming proportion of total healthcare spend.

• Better government schemes for healthcare delivery and health insurance for the poor.

• Increased interest by private equity players in investments in healthcare delivery.

Private Sector now provides more than 70 per cent of the healthcare in India.

The growth of private healthcare has had many positive impacts on the healthcare scenario in India:

• Availability of services has improved tremendously with all services available under one roof for example people do not need to travel abroad for any medical condition

• Cost of services is lower in relation to rest of the world

• Quality of healthcare has improved: Success rates of Indian healthcare providers is equal to or better than their counterparts in developed countries.

• Employment opportunities have increased. Healthcare sector now employs more than 5 million people and is now the second largest employer in the services sector after education

• Growth and establishment of medical tourism to India. High quality medical services at corporate hospitals have positioned India on the global map as a preferred destination for high end medical / surgical care.
The health industry is now receiving its due attention from financial investors. Tie ups with foreign universities and medical institutions are common place now with most upcoming hospitals. This has led to a significant improvement in quality of care being imparted.

However, most of the current investments in private healthcare are taking place in the large metropolitan cities and in the tertiary care space. There is a crying need for investments in Tier II cities where there is demand for healthcare services and incentives from government for setting up health infrastructure.

The government health services, though, need much more focus than is being currently meted out. Health sector budget is less than 1 per cent of GDP and with a billion plus population, and significant proportion being below poverty line, the requirement is much more. The overall public health spend must go up.
3.10. TOP MULTI SPECIALITY HOSPITALS IN INDIA
BRIEF PROFILE OF THE MULTI-SPECIALITY HOSPITALS

1. ALL INDIA INSTITUTE OF MEDICAL SCIENCES

All-India Institute of Medical Sciences was build as an institution of national importance by an Act of Parliament with the objects to develop patterns of teaching in Undergraduate and Post Graduate Medical Education in all its branches so as to demonstrate a high standard of Medical Education in India; to bring together in one place educational facilities of the highest order for the training of personnel in all important branches of health activity.

The Institute has comprehensive facilities for teaching, research and patient-care. As provided in the Act, AIIMS conducts teaching programs in medical and paramedical courses both at undergraduate and postgraduate levels and awards its own degrees. Teaching and research are conducted in 42 disciplines. In the field of medical research AIIMS is the lead, having more than 600 research publications by its faculty and researchers in a year. AIIMS also runs a College of Nursing and trains students for B.Sc. (Hons.) Nursing post-certificate) degrees.

Location: Delhi

2. APOLLO HOSPITALS

Today, with over 8500 beds across 54 hospitals, and a significant presence at every touch-point of the medical value chain, Apollo Hospitals is one of Asia’s
largest healthcare groups. Commenced as a 150 bed hospital, today the group has grown exponentially both in India and overseas. Its growth is often said to be synonymous with India emerging as a major hub in global healthcare.

Apollo Hospitals is driven by a single thrust, to provide the best standards of patient care. It is this passion that has lead to the development of unique centers of excellence across medical disciplines, within the Apollo Hospitals network. Apollo Hospitals has JCI accreditations for 7 of its hospitals, the largest by any hospital group in the region.

Location: Delhi

3. APOLLO HOSPITALS

The dream nurtured and grew within Dr. Prathap C Reddy, the founder Chairman of Apollo Hospitals, until the point of inflection happened in 1983. Dr. Reddy's vision into a reality - a vision where quality healthcare was given, where the pursuit of clinical excellence was daily endeavor, India a hub in the medical tourism map and where the Apollo family touches and enriches lives every minute, every day. The Apollo hospitals group achieved the unique distinction of achieving accreditation for its hospitals at Delhi, Chennai, Hyderabad, Ludhiana, Bangalore, Kolkata and Dhaka, Indraprastha Apollo Hospitals, Delhi, became the first hospital in India, while Apollo Hospitals, Chennai, became the first hospital in South India to achieve this unique and coveted accreditation. Apollo Hospitals Bangalore, Indraprastha, Apollo Hospitals Delhi and Dhaka were re-accredited in August 2011.

Location: Chennai
4. NIMHANS HOSPITAL

The National Institute of Mental Health and Neuro Sciences is a multidisciplinary Institute for patient care & academic pursuit in the frontier area of Mental Health and Neurology.

The Lunatic Asylum which came into being in the latter part of the 19th Century was renamed as Mental Hospital in 1925 by the erstwhile Government of Mysore.

This hospital and All India Institute of Mental Health established in 1954 by Government of India were amalgamated on 27th December 1974, and thus was formed the autonomous National Institute of Mental Health and Neuro Sciences (NIMHANS). Multidisciplinary integrated approach is the mainstay of this institute, paving the way to translate the results from the bench to the bedside. On November 14, 1994, NIMHANS has been declared a Deemed University by the University Grants Commission, with academic autonomy. The Institute functions under the direction of Ministry of Health and Family Welfare, Govt. of India and Ministry of Health and Family Welfare, Government of Karnataka. Several National and International funding organisations provide resources for research.

Location : Bangalore
5. CHRISTIAN MEDICAL COLLEGE

The Christian Medical College, Vellore has its desire in research from the work started by Dr. Ida Sophia Scudder, its founder. Over the past century, CMC has contributed significantly not only to the provision of health care and body to the poor and needy but also in generating and advancing knowledge to improve the provision of curative and preventive services to the people we serve directly and to the nation as well as whole world. This is such a great center for medicine and a great hospital.

Location: Vellore

6. POST GRADUATE INSTITUTE CHANDIGARH

The Postgraduate Institute of Medical Education and Research (PGIMER) Chandigarh was established in 1960 as a hub of excellence which would endeavour to create patterns of teaching in postgraduate medical education in as many branches as possible and take to produce specialists in several disciplines of medicine. It was also envisaged that these specialists would spread out in the country in various medical colleges and medical institutions and impart medical education of highest standard to the students and set up numerous of excellence in their own institutions. The PGIMER was also given the responsibility to broaden the horizons of medical knowledge by intensive research in the field of health and body.

Location: Chandigarh
7. TATA Memorial Hospital

The Tata Memorial Centre is the national comprehensive cancer hospital for the prevention, treatment, education and research in Cancer and is known as one of the great cancer centres in this part of the world. This achievement has been possible due to the divine think, bill power and total support of the Department of Atomic Energy, responsible for managing this Institution since 1962. This is the greatest cancer hospital in the world.

Location: Mumbai

8. LILAVATI HOSPITAL

The Lilavati Hospital is development of the Lilavati Kirtilal Mehta Medical Trust. Established in 1978, the Lilavati Kirtilal Mehta Medical Trust has engaged in charitable endeavors across India. The combination of research and education with outpatient and hospital care distinguishes the Lilavati Hospital as a concerned non-profit healthcare organisation. The Lilavati Kirtilal Mehta Medical Trust is helping to create a new joy in India’s ability to deliver a humane and affordable health care system.

Location: Mumbai
9. SANKARA NETHRALAYA

It was established in 1976, His Holiness Sri Jayendra Saraswathi, the Sankaracharya of the Kanchi Kamakoti Peetam spoke of the need to create an eye hospital with a missionary spirit. This is really a gift for eye patients. It was named Sankara Nethralaya, which means "The Temple of the Eye". The long journey for vision with a mission began. On average, 1300 patients walk through our doors and 100 surgeries are done every day. In our journey for excellence, we have received many awards and appreciation of our efforts. And we still have a long way to go...

Location: Chennai

10. BOMBAY HOSPITAL

Bombay Hospital Mumbai is featuring regularly amongst the TOP 10 Multi-specialty Hospitals in India Since 2004 to present year (2012) by the yearly survey done by “THE WEEK” magazine.

Location: Mumbai
3.11. CONTROLLING AUTHORITY

3.11.1. MEDICAL COUNCIL OF INDIA

An Act to provide for the Reconstitution of the Medical Council of India and the maintenance of a Medical Register or India and for Matters Connected therewith.

The Medical Council of India (MCI) is the statutory body for establishing uniform and high standards of medical education in India. The Council grants recognition of medical qualifications, gives accreditation to medical colleges, grants registration to medical practitioners, and monitors medical practice in India. The current chairman of Board of Governors of MCI is Dr. R K Srivastava. The Medical Council of India was first established in 1934 under the Indian Medical Council Act, 1933. The Council was later reconstituted under the Indian Medical Council Act, 1956 that replaced the earlier Act.

The main functions of the Medical Council of India are the following:

- Establishment and maintenance of uniform standards for undergraduate medical education.
- Regulation of postgraduate medical education in medical colleges accredited by it. (The National Board of Examinations is another statutory body for postgraduate medical education in India).
- Recognition of medical qualifications granted by medical institutions in India.
- Recognition of foreign medical qualifications in India.
- Accreditation of medical colleges.
- Registration of doctors with recognized medical qualifications.
• Keeping a directory of all registered doctors (called the Indian Medical Register).

CONSTITUTION & COMPOSITION OF THE COUNCIL

1. The Central Government shall cause to be constituted a council consisting of the following members, namely:-

A. One member from each State other than a Union Territory to be nominated by the Central Government in consultation with the State Government concerned.

B. One member from each University to be elected from amongst the members of the medical faculty of the University by members of the Senate of the University or in case the University has no Senate, by members of the Court.

C. One member from each State in which a State Medical Register is maintained, to be elected from amongst themselves by persons enrolled on such register who possess the medical qualifications included in the First or the Second Schedule or in Part II of the Third Schedule.

D. Seven members to be elected from amongst themselves by persons enrolled on any of the State Medical Registers who possess the medical qualifications included in Part-I of the Third Schedule.

E. Eight members to be nominated by the Central Govt.

2. The President and Vice-President of the Council shall be elected by the members of the Council from amongst themselves.

3. No act done by the Council shall be questioned on the ground merely of the existence of any vacancy in, or any defect in the constitution of the Council.
3.11.2. PHARMACY COUNCIL OF INDIA

The Pharmacy Council of India (PCI) is the statutory body of government of India constituted under the Pharmacy Act, 1948. The Council was first constituted on 4 March 1948. The Pharmacy Council of India is constituted by central government every five years. They are based in New Delhi. There are three types of members collectively forms a frame of PCI,

1. Elected members
2. Nominated members
3. Ex-officio members

The main functions of the PCI are

- To prescribe minimum standard of education required for qualifying as a pharmacist. (Ref.: section 10 of the Pharmacy Act)

- Framing of Education Regulations prescribing the conditions to be fulfilled by the institutions seeking approval of the PCI for imparting education in pharmacy. (Ref.: section 10 of the Pharmacy Act)

- To ensure uniform implementation of the educational standards throughout the country. (Ref.: section 10 of the Pharmacy Act)

- Inspection of Pharmacy Institutions seeking approval under the Pharmacy Act to verify availability of the prescribed norms. (Ref.: section 16 of the Pharmacy Act)

- To approve the course of study and examination for pharmacists i.e. approval of the academic training institutions providing pharmacy courses. (Ref.: section 12 of the Pharmacy Act)
• To withdraw approval, if the approved course of study or an approved examination does not continue to be in conformity with the educational standards prescribed by the PCI. (Ref.: section 13 of the Pharmacy Act)

• To approve qualifications granted outside the territories to which the Pharmacy Act extends i.e. the approval of foreign qualification. (Ref.: section 14 of the Pharmacy Act)

• To maintain Central Register of Pharmacists. (Ref.: section 15 A of the Pharmacy Act)

3.11.3. NURSING COUNCIL OF INDIA

• Nursing Council Act came to existence in 1948 to constitute a council of nurses to safeguard the quality of nursing education in the country.

• The mandate was to establish and maintain uniform standards of nursing education.

• Indian Nursing Council (INC) is a statutory body that regulates nursing education in the country through prescription, inspection, examination, certification and maintaining its stands for a uniform syllabus at each level of nursing education.

The Indian Nursing Council believes that the basic course in nursing is a formal educational preparation which should be based on sound education principles. The council recognizes that the program as the foundation on which the practice of nursing is built and on which depends further professional education. It also recognizes its responsibility to the society for the continued development of student as individual nurse and citizens.
3.11.4 DRUGS CONTROL AUTHORITY OF INDIA

The Drugs Control Department of Delhi is a Regulatory Department. It regulates manufacture of drugs & cosmetics and sales of drugs. For the enforcement of various Drug Laws, Delhi State has been divided into two Divisions. Each Division is comprised of two Zones and is headed by one Dy. Drugs Controller. North-West Zones comprises one Division and south-East Zones comprises of the other Division. The Drugs Control Organisation was functioning, as a subordinate office under Directorate of Health Services till January 1986 and Director Health Services was the Ex-officio Drugs Controller. Thereafter, The Drugs Control Organisation became an independent Department with Drugs Controller as Head of Department.

The Drugs Control Department of Delhi State is enforcing the provisions of following statutes, enacted by Government of India:

1) Drugs & Cosmetics Act, 1940 and Rules made there under.

Licensing and classification of medical devices are handled by the Central Licensing Approval Authority (CLAA). The CLAA is also responsible for setting and enforcing safety standards, appointing notified bodies to oversee conformity assessment, conducting post-market surveillance and issuing warnings and recalls for adverse events.

The CDSCO establishes safety, efficacy, and quality standards for pharmaceuticals and medical devices. It publishes and updates the Indian Pharmacopeia, a list of regulated pharmaceuticals and devices. For all drug and device applications, the CDSCO appoints notified bodies to perform conformity assessment procedures, including testing, in order to ensure compliance with their standards. The
CDSCO is also divided into several zonal offices which do pre-licensing and post-licensing inspections, post-market surveillance, and recalls when necessary.

In addition to its regulatory functions, the CDSCO offers technical guidance, trains regulatory officials and analysts, and monitors adverse events. The CDSCO works with the World Health Organization to promote Good Manufacturing Practice (GMP) and international regulatory harmony.

3.11.5 Dental Council of India

The Dental Council of India was incorporated under The Dentists Act, 1948 to regulate dental education and the profession throughout India. It is financed by the Ministry of Health and Family Welfare (India) and through the local state dental councils.

Dental Council of India is a Statutory Body incorporated under an Act of Parliament viz. The Dentists Act, 1948 (XVI of 1948) to regulate the Dental Education and the profession of Dentistry throughout India and it is financed by the govt.

Objectives of DCI

- Maintain uniform standards of dental education in India
- Regulate the curriculum in the training of dentists, dental hygienists, dental mechanics
- Regulate the level of examinations and qualifications

A Bill has been introduced in the Parliament of India to dissolve the Dental Council of India, along with other Regulatory Bodies such as Medical Council of India, Nursing Council of India, Pharmacy Council of India, etc. These Regulatory Bodies are proposed to be replaced with a common Statutory Body known as National Commission for Human Resources for Health. This is primarily due to widespread
allegations of corruption in the Dental Council of India, and raids conducted by Central Bureau of Investigation on Dr. Anil Kohli, tainted ex-President of Dental Council of India and Dr. Ketan Desai, tainted ex-President of Medical Council of India.

**Directorate of Medical Education**

The Directorate of Medical Education (Government of Tamil Nadu), Chennai as required by the Right to Information Act, 2005. The objective of this is to provide information to the citizens who desires to have such information as they about the functioning the directorate and institutions under its control.

- Rules, Regulations, Instructions for discharging functions
- Names, Designations and other particulars of Appellate Authorities and Public Information Officers.
- Facilities available to citizens for obtaining information under Right to Information act of India, right to the information act.

**Selection committee**

- The Selection Committee functions under the control of director of medical education as a chairperson with a secretary in the cadre of Additional Director of Medical Education in the rank of Dean to look after its activities exclusively.
The functions of Selection Committee are:-

- Drafting of proposal for policy G.O of prospectus for all the courses.
- Issue of Advertisements and Notifications regarding sale of applications, counseling and entrance examination.
- Issue of Applications
- Conduct of Entrance Examinations for Post Graduate degree/ Specialty Courses.
- Preparation of Question bank and updating.
- Evaluation of Answer Sheets.
- Process of application regarding eligibility criteria.
- Publication of Merit List.
- Arrangement for day to day information in websites for total transparency.
- Follow up of Court cases.

The Selection Committee carries out allotment for Under Graduate Courses (MBBS/BDS), Post Graduates, pharmacy, M.Sc.(Nursing) Courses and Higher Specialty Courses.

**Higher Specialty Courses:** As followed in Post Graduate Degree Course all the applied candidates have to appear for an Entrance Examination. The total marks in the Entrance Examination will be calculated for 90 and the service mark (up to a maximum of 10) will be calculated from the date of completion of Post Graduate Degree up to date of Entrance Examination. Thus the general merit list for 100 is arrived for private and service candidates in common. Further for service candidates, rural marks are added (1 mark / year up to a maximum of 10) to those candidates who served in Primary Health Centres alone and service candidate 0:50 basis of merit. Revised time schedule by Supreme Court of India is 30th September of every year.
3.11.6 CONSUMER PROTECTION ACT

Consumer protection is a group of laws and organizations designed to ensure the rights of consumers as well as fair trade competition and the free flow of truthful information in the marketplace. The laws are designed to prevent businesses that engage in fraud or specified unfair practices from gaining an advantage over competitors; they may also provide additional protection for the weak and those unable to take care of themselves. Consumer protection laws are a form of government regulation, which aim to protect the rights of consumers. For example, a government may require businesses to disclose detailed information about products particularly in areas where safety or public health is an issue, such as food. Consumer protection is linked to the idea of consumer rights, and to the formation of consumer organizations, which help consumers make better choices in the marketplace and get help with consumer complaints.

Other organizations that promote consumer protection include government organizations and self-regulating business organizations such as consumer protection agencies and organizations, the Federal Trade Commission, ombudsmen, Better Business Bureaus, etc.

A consumer is defined as someone who acquires goods or services for direct use or ownership rather than for resale or use in production and manufacturing. Consumer interests can also be protected by promoting competition in the markets which directly and indirectly serve consumers, consistent with economic efficiency, but this topic is treated in competition law. Consumer protection can also be asserted via non-government organizations and individuals as consumer activism.
Consumer law

Consumer protection law or consumer law is considered an area of law that regulates private law relationships between individual consumers and the businesses that sell those goods and services. Consumer protection covers a wide range of topics, including but not necessarily limited to product liability, privacy rights, unfair business fraud, misrepresentation, and other consumer/business interactions. It's a way of preventing fraud and scams from service and sales contracts, bill collector regulation, pricing, utility turnoffs, consolidation, personal loans that may lead to bankruptcy.

Australia

In Australia, the corresponding agency is the Australian Competition and Consumer Commission or the individual State Consumer Affairs agencies. The Australian Securities and Investments Commission has responsibility for consumer protection regulation of financial services and products.

Germany

A minister of the federal cabinet is responsible for consumer rights and protection. In the current cabinet of Angela Merkel, this is Heiko Maas. When issuing public warnings about products and services, the issuing authority has to take into account that this affects the supplier's constitutionally protected economic liberty.
India

In India, the Consumer Protection Act of 1986 is the law governing consumer protection. Under this law, Separate Consumer Dispute Redressal Fora have been set up throughout India in each and every district in which a consumer [complaint can be filed by both the consumer of a goods as well as of the services] can file his complaint on a simple paper with nominal court fees and his complaint will be decided by the Presiding Officer of the District Level. Appeal could be filed to the State Consumer Disputes Redressal Commissions and after that to the National Consumer Disputes Redressal Commission (NCDRC). The procedures in these tribunals are relatively less formal and more people friendly and they also take less time to decide upon a consumer dispute[2] when compared to the years long time taken by the traditional Indian Judiciary. In recent years, many effective judgments have been passed by some state and National Consumer Forums.