The economic and management planning aspects of healthcare access in rural areas of Gujarat state with special reference to lack of adequate healthcare facilities in rural areas of Surat district

A Thesis submitted to

TILAK MAHARASHTRA VIDYAPEETH, PUNE

For the degree of Doctor of Philosophy (Ph.D)

In Economics Subject

Under the Board of Moral, Social Sciences

Submitted By

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Under the Guidance of

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June, 2017

UNDERTAKING

1. I **ANIL KUMAR CHILLIMUNTHA** have registered my name for the Ph.D course in **ECONOMICS** in the year **2010**.
2. The undertaken research is entitled as: **"The Economic And Management Planning Aspects Of Healthcare Access In Rural Areas Of Gujarat State With Special Reference To Lack Of Adequate Healthcare Facilities In Rural Areas Of Surat District."**
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DECLARATION

I hereby declare that the work presented in this thesis entitled "The Economic And Management Planning Aspects Of Healthcare Access In Rural Areas Of Gujarat State With Special Reference To Lack Of Adequate Healthcare Facilities In Rural Areas Of Surat District." has been carried out by me at METAS Adventist College of Seventh day Adventists, Surat, India, under the guidance of Prof. Dr. Kumudini R. Thakor, Professor, METAS Adventist College, Surat, India. The present work has not formed the basis for the award of any other degree, diploma or fellowship from any other university previously. The particulars given in this thesis are true to the best of my knowledge and belief.

Anil Kumar Chillimuntha

Place: Surat

Date:

CERTIFICATE

This is to certify that this thesis entitled "**The Economic And Managerial Aspects Of Healthcare Facilities In Rural Areas Of Gujarat With Special Reference To Surat District.**" is a bonafide research work carried out and completed by Anil Kumar Chillimuntha, under my guidance. This is an original piece of work, done as per the regulations of Tilak Maharashtra Vidyapeeth, Pune and the contents of this thesis, in full or in parts have not been submitted to any other institution or university for the award of any degree or diploma.

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ACKNOWLEDGEMENT

This research work has been very exciting and interesting, and at times a daunting task, too. Nevertheless, I am fortunate enough to have had many of my friends coming to my help in different ways and wish to thank all of them.

At the very outset, let me thank God Almighty for providing and infusing me with indefinite strength to carry out this work and for being with me in all my endeavors.

I am extremely grateful to Dr. Kumudini R. Thakor, my teacher and guide, who was kind enough to take me as her doctoral student and provide me with her valuable guidance. Her wise counsel, generous help and encouragement have helped me to shape my ideas in a coherent fashion.

I would like to thank my beloved teacher and mentor Dr. M.S. Jeremiah, Founder President & CEO of METAS, Surat for his constant encouragement, support and helpful suggestions. I also would like to thank Dr.Eliah Srikakolli, President & CEO of Metas Group of Institutions. I also take this opportunity to thank Prof. Kiran Pandya and Ms. Neha Raval for giving me the clarity on research statistical techniques.

I also wish to thank Tilak Maharashtra Vidyapeeth, Pune for providing me a platform to undertake my doctoral studies.

I appreciate and sincerely acknowledge all my colleagues who have stood by me, gave me constant encouragement and helpful suggestions during my research.

I would like to express my appreciation and heartfelt thanks to the hospital personnel, and patients of all the hospitals in different rural areas, who have been the respondents to this research.

Finally I would be failing in my duty if I do not remember the prayers of my mother Sugandha Rao, wife Sabita, daughter Ria, son Chinnu, family, friends and all my well-wishers.

Anil Kumar Chillimuntha

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CHAPTER – 1

INTRODUCTION AND RESEARCH METHODOLOGY ADOPTED FOR THE PRESENT STUDY

1.1 INTRODUCTION

The governments across the world identify health as an important thrust area. Healthcare is an important sector so as to attain a healthy productive workforce, general welfare and for population stabilization. Many initiatives were taken by the Indian government to improve the funding for healthcare, with the objective of providing affordable, accessible and effective healthcare facilities to its citizens.

Around the globe many admirable achievements in health have been observed in the past decades. It is evidenced by increased life expectancy, reduced mortality rates of children in many countries. It can be justified that these improvements will attribute them for better living standards of life, improvements in pollution levels, availability of clean water, good sanitation conditions and improvements in the medical services (World Health Report. 1999); (Michael A.J. et.al. 2004). In the recent years everyone has seen some reversal effects too such as average life expectancy has significantly gone down since 1990 in some countries such as Sub-Saharan Africa. The adult male mortality rates have increased in parts of former USSR and Russia (Andreev E.M. et.al. 2003). These things happened this way because of economic decline and increased HIV incidence in Africa. Some of the reverses in Russia can be attributed to alcohol abuse and other chronic diseases associated with them (Andoh S.Y. et.al. 2006). However, around the world non communicable diseases are increasing thereby dragging the poor countries into a double burden of financing the infectious diseases and tackling same time

cardiovascular diseases, cancer, diabetes, road traffic accidental injuries, etc. (World Health Organization, 2006).

1.2 OBJECTIVES OF STUDY

The following are the objectives of the study:

i. To study the healthcare facilities available in Surat district.
ii. To study about the relationship between rural healthcare facilities and satisfaction levels.
iii. To analyze the impact of inadequate rural healthcare facilities in Surat district.
iv. To study the impact of manpower planning and vacant posts in rural healthcare facilities in Surat district.
v. To study the Economic aspects like funding and financing of rural healthcare facilities in Surat district.
vi. To study the Managerial aspects like Decentralized Planning, Execution, and Monitoring of rural healthcare facilities in Surat district.

1.3 RESEARCH METHODOLOGY

The study is exploratory and descriptive in nature. This research is based on the primary sources of information obtained from respondents belonging to different categories of the society and secondary sources which enriched our theoretical base as well.

Secondary Data

The secondary data is collected by researcher at the time of conducting research. This data is already known to all the public. The researcher used various resources from Economics books, Journals, Public healthcare books and journals, magazines, newspapers, bulletins, etc. The secondary data is also collected from different libraries. Further, the data has been collected from the secondary data, both from published and

unpublished documents from District Health Office, Rural Healthcare office reports, SMC reports, NHRM Progress Reports, etc.

Primary Data

Primary data will be collected from different respondents of Surat District. Some of the selected respondents are selected patients, employees and officers. Such selection is based on random sampling method.

Sample Frame for Selection of Consumers

The Surat district has 394 Sub Centers, 53 PHC's, 14 CHC's, 42 UHC's which is totaling to 503. The selection is done of 400 respondents from each of these centers which constitute more than 2/3rds of the district rural healthcare infrastructure.

Four of the respondents are taken from each of the 53 PHC Employees which constitutes 100 percent of total PHC's in Surat District. Two respondents are chosen from each of the total 14 CHC Employee which constitutes 100% of total CHC's in Surat District. One respondent is selected from 42 UHU's which constitutes 100% of total UHU's in Surat District. One respondent is chosen from each of the total 394 Sub Center Employees which constitutes 30% of total SC's in Surat District. The researcher has taken adequate representation from all the categories. This selection is based on Random sampling method. The purpose behind selection of these consumers was to cover all the rural and urban areas. The consumers include general population, students, teachers, house wives, farmers, daily wage workers, businessmen, etc. The total number of consumers (respondents) selected for the study are 400. The rationale of sample selection is shown in Table 1.1.

Table 1.1 RATIONALE FOR SAMPLING PATIENTS OF SURAT DISTRICT				
Primary/Tertiary Care Centers	**Total Infrastructure/ Bed Strength**	**Purposive Sampling Ratio**	**Sample Per Center**	**Total Sample Size**
Sub Centers	394	30 Percent of Sample	1 Patient from 30 Percent of SC's	118
PHC	53	100 Percent of Sample	4 Patients Per PHC	212
CHC	14	100 Percent of Sample	2 Patients Per CHC	28
UHC	42	100 Percent of Sample	1 Patient per UHC	42
Total	**503**			**400**

Sample Frame for Selection of Employees of Rural Hospital

There are total 53 Primary Health Centers (PHC), 14 Community Health Centers (CHC), 42 Urban Health Unit (UHU) and 394 Sub Centers (SC's) in Surat District.

Four respondents are taken from each of the 53 PHC Employees which constitutes 100 percent of total PHC's in Surat District. Two respondents are chosen from each of the total 14 CHC Employee which constitutes 100% of total CHC's in Surat District. One respondent is selected from 42 UHU's which constitutes 100% of total UHU's in Surat District. One respondent is taken from each of the total 394 Sub Center Employees which constitutes 30% of total SC's in Surat District. The researcher has taken adequate representation from all the categories. This selection is based on Random sampling method. The rationale of sample selection is shown in Table 1.2.

Table 1.2 RATIONALE FOR SAMPLING EMPLOYEES OF SURAT DISTRICT				
Primary/ Tertiary Care Centers	**Total Infrastructure/ Bed Strength**	**Purposive Sampling Ratio**	**Sample Per Center**	**Total Sample Size**
Sub Centers	394	30 Percent of Sample	1 Employee from 30 Percent of SC's	118
PHC	53	100 Percent of Sample	4 Employees Per PHC	212
CHC	14	100 Percent of Sample	2 Employees Per CHC	28
UHC	42	100 Percent of Sample	1 Employee per UHC	42
Total	**503**			**400**

Sample Frame for Selection of Bureaucrats/Officers

This category includes Government officials, Municipality personnel, District Health Officials, Surat Urban Development Authority Officials, Panchayati Officers, Taluqa Officers and all Zonal Health Department employees in Surat District. The total number of Bureaucrats (respondents) selected for the study comes to 100, giving equal representation to different sections/departments. This selection is based on Random sampling method.

Question Schedules

The researcher prepared 3 sets of questionnaires for the purpose of collecting primary data. The first questionnaire is administered to patients who are consumers of rural healthcare of Surat district. The second questionnaire is given to the employees working in the rural healthcare system. The third set of question schedule was circulated among the selected bureaucrats or officers.

Pilot Testing

In order to check the consistency of the questionnaire, pilot testing was conducted for a group of 50 consumers, employees and officers who are either availing or delivering the public healthcare services. Based on the results of the pilot study, suitable modifications were done in the questionnaires.

Statistical Methods and Techniques used

Various statistical tools are used for the purpose of data analysis. The researcher has used SPSS software version 20 for entering the field data and has used

- Percentages
- Frequency tables
- Cross Tabulation
- Descriptive Statistics
- Hypothesis Testing Chi Square and t-test

Percentages are computed for the purpose of comparative picture for e.g. percentages of consumers, employees and officer's response. Cross tabulation is used for comparing respondents across two variables. Descriptive statistics such as mean and standard deviation are computed for continuous variable. In order to test the hypothesis, Chi Square and t-test are employed.

1.4 SCOPE OF THE STUDY

The present research work focuses on the causes and consequences of inadequate healthcare facilities for rural population of Surat District. Due to the constraints of time and resources, not all the factors leading to inadequate healthcare facilities for rural population of Surat District are considered. Emphasis is laid on relationship between number of rural hospitals and healthcare status of the consumers, and relationship between Equipment, Manpower and Financial Infrastructure and satisfaction of Consumers, Employees and Officers in the rural healthcare facilities of Surat District.

1.5 HYPOTHESES

The following hypotheses will be tested in this research:

i. There's a significant relationship between the equipment infrastructure availability and the satisfaction of patients, officers and employees.

ii. There's a close relationship between the manpower infrastructure availability and the satisfaction of the patients, employees and officers.

iii. There's a significant relationship between the financial infrastructure availability and the satisfaction of the patients, employees and officers.

1.6 PRESENTATION OF THE STUDY

The total study is divided into six chapters.

Chapter 1: Introduction and Research Methodology adopted for the present study.

Chapter 2: A Review of related studies on the lack of adequate rural healthcare infrastructure and services is done.

Chapter 3: Indian Healthcare System

Chapter 4: The Rural Health status of Gujarat and Surat District is explained.

Chapter 5: Analysis of the Primary Data.

Chapter 6: Findings of the Study, Conclusion and Suggestions.

1.7 LIMITATIONS OF THE STUDY

In the present research, emphasis is laid on the causes, relationship and consequences of inadequate healthcare facilities of Surat District in Gujarat. The researcher has not considered any comparisons of rural programs implemented in other parts of the nation.

CHAPTER – 2

REVIEW OF LITTERATURE

Feldman, Roger; Deitz, David M.; Brooks, Edward F., (1978)[1], viewed that the Primary health care centers have been proposed to meet the health care needs of rural America. Some centers become financially "self-sufficient", receiving their entire budgets from direct patient or third-party payments; others shut down when external funding is withdrawn. An explanation for this difference is important, because funding agencies may not wish to subsidize centers whose financial futures appear bleak. This study identifies the correlates of financial self-sufficiency. A survey conducted in late 1976 of 164 rural clinics provided 101 usable responses. Multiple regression analysis of the data shows that the longer a center has been in operation, the more self-sufficient it will become. Hospital control of the center and provision of laboratory tests increase self-sufficiency; outreach services and nonprofit status reduce it. Two variables related to financial self-sufficiency are separately examined. Clinics with a faster growth rate of patient visits are more self-sufficient, and smaller clinics tend to grow faster. More self-sufficient clinics experience less difficulty in keeping professional staff. The presence of a state Area Health Education Center (AHEC) program also eases the problem of staff retention.

Preston, Samuel et. al. (1978)**[2]** in their study have pointed out that more the disparity the greater are the chances of disharmony and displeasure about the governance. The rural urban disparity was also studied by him and brought about need to deal with these issues at large.

Scheffler, Richard M.; Kushman, John E. (1978)[3], has provided lot of information on health care practitioners in the rural areas of USA. Details on the programs of Medex and

Physician Assistants is done. They play a vital role in handling the rural healthcare in USA.

McLaughlin, Curtis P.; Ricketts, Thomas C.; Freund, Deborah A.; Sheps, Cecil G. (1985)[4], viewed that subsidized rural clinics and providers, have long depended on the rural hospital for the care of some of their patients; the hospital has also been a source of revenue for these providers and programs. The dependence of these rural subsidized clinics on hospital indicates that the subsidized rural clinics would be decreased with more availability of hospitals.

Kearns (1988)**[5]**, in his study has observed that this rural urban difference is noted since the industrial revolution when urban living brought hazards owing to communicable diseases that were spread easily due to living in proximity to each other. The epidemiological transition from communicable to degenerative diseases has literally benefited the urbanites mostly due to public health, political factors and social dynamics of the society.

Mann JM. , Gostin L. et.al. (1994)**[6]**, have opined that for ensuring a social well being the World Health Organization (WHO) recognizes health as a human right. There exists a correlation between economic growth and improvement in health indicators. However, such trend has not been seen in the Indian context despite a high economic growth rate of 7 percent even during the recent world economic slowdown. In order for capital to translate to into positive healthcare outcomes there's a need to be clear policy goals and healthcare needs to be given priority in the budget.

Mosvovice, Ira; Christianson, Jon. (1995)[7], summarizes the perspectives gained by a four year program. The Benefit of increased collaboration among rural providers; Potential

benefits of multihospital system affiliations; Description of the Rural Hospital Network Program have improved the services.

Beggs, Haines, Hurlbert (1996)[8] has said that urban have better healthcare infrastructure than rural therefore the studies are paradoxical. Its explained with reference to social support. Rural areas have greater cohesion and more frequent exchange and contact with family members even different generations. This in turn has brought about social support characteristics which is a determinant of health which was found by House, Landis, Umberson in 1988.

Drummond M. et.al. (1997)[9] has pointed out that economic considerations have assumed an increasingly prominent role in the planning, management and evaluation of health systems, ranging from the design of ways to pay providers or to improve access to care for households, to the definition of essential packages for insurance, to decisions about whether or not to include new medicines on hospital, state or national formularies.

Szreter (1997)[10] viewed about the differences in rural and urban healthcare. He has mentioned that the growth of the nation will be compromised with these disparities in play. These rural urban divide will bring about inequality of healthcare and will further drag the nation into health chaos.

Voluntary Health Association (1997)[11], in their study pointed out that India which has a large geographical area with soo many states warrant more control of state government agencies in delivering public health and little role is attributed to central government agencies. The central government's role is just to facilitate the overall functioning through stewardship, advocacy and support.

Duggal R. (1997)[12] has pointed out that since the 1980's the process of liberalization and opening of Indian economy began receiving lesser support to healthcare. Medical care

and controlling the communicable disease are crucial areas of concern. The overall spending on public health show a declining trend in the 1980's and 1990's as observed in the Table 2.1.

Table 2.1: Selected public health expenditure ratios, all India

Details	1980–1981	1985–1986	1991–1992	1994–1995
Health expenditure as % to total				
government expenditure	3.29	3.29	3.11	2.63
Expenditure on medical care as %				
of total health expenditure	43.30	37.82	26.78	25.75
Expenditure on disease programs as %				
of total health expenditure	12.96	11.69	10.59	9.51

Source: Duggal R. Health Care Budgets in a Changing Political Economy. Economic and Political Weekly May 1997: 17–24.

LaFleur, Elizabeth K.; Taylor, Susan Lee; Sumrall, Delia A. (1997)[13], in their article presents a discussion of the methods used to complete a community health needs assessment in a rural area. The authors also examine how the results of such a study can be used to strategically market various services to the broader community. The authors note the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) have made changes to the accreditation process of health care organizations that call for an enhanced need for consumer-oriented community health needs assessments. The authors examine how to deal with these new standards and discuss the importance in leadership in conducting needs assessments.

House et.al (2000)**[14]** in their study proved about a landmark study which was conducted by Kitagawa, Hauser in 1973 who reported that the mortality rates of non metro areas of USA were 5 percent below those in metropolitan areas. The advantage is recently confirmed by him after adjusting for social, demographic, economic and behavioral characteristics. The older adults situation is more complex. There are many studies done on the rural advantage in mortality and other indicators of health such as studies done

by Clifford, Brannon in 1985, Hayward, Pienta, Mc Laughlin studied the same in 1997 and Smith et.al. in 1995 have proved the same.

Government of India. Bulletin on Rural health Statistics of India. (2000)[15] in their report said the public health investment is far too inadequate to meet the requirements of the poor and needy people of India. There's a meager 0.9 percent of GDP spent on public healthcare.

Krasovec and Shaw (2000)[16] has told health and socio-economic development follow each other. In Table 2.2 given below gives a comparison of the economic status, expenditure on health, and health outcomes in high income, middle income, and low-income countries. Over and above availability, access, and affordability concerns, a fourth determinant of the quality of healthcare services focuses on equity of services. While inequality exists between low-high performing states, as well as between populations with different socio-economic status, inequality concerns between the rural and urban areas are of a different nature. The dimensions of equity assume larger proportions in urban areas because of socio-economic and cultural diversity of urban population. Indian population growth is characterized by the 2-3-4-5 syndrome: overall population growth at 2 percent, urban population growth at 3 percent, mega cities growth at 4 percent, and slum population growth at 5 percent. Equity concerns in urban health have to address these realities as well.

Health insurance, mentioned earlier, can also address equity concerns. With greater coverage through insurance, equity in healthcare will improve through effective cross subsidization. Health sector is complex involving several stakeholders, multiple goals, multiple products and different beneficiaries. Health sector reforms have to be carefully designed and implemented. Health System change is political and calls for behavioral changes.

Table 2.2: Economic status, Expenditure on health outcomes

Country	Economic status: GNP per capita $ (2002)	Population Mill (2002)	GNP Bill $ (2002)	GDP Growth % 2001-02	Expenditure on health: Public % GDP (2000)	Private % GDP (2000)	Total per capita $ (2000)	Health outcomes: CMR per 1,000 live births (2001)	MMR per 100,000 live births (1995)
High income countries (sample)									
Switzerland	37,930	7	274	−0.2	5.9	4.8	3,573	6	8
The USA	35,060	288	10,110	2.3	5.8	7.2	4,499	8	12
Japan	33,550	127	4,266	−0.7	6.0	1.8	2,908	5	12
The UK	25,250	59	1,486	1.5	5.9	1.4	1,747	7	10
Germany	22,670	82	1,870	0.2	8.0	2.6	2,422	5	12
Canada	22,300	31	701	3.3	6.6	2.5	2,058	7	6
France	22,010	59	1,343	1.0	7.2	2.3	2,057	6	20
Australia	19,740	20	387	3.5	6.0	2.3	1,698	6	6
Italy	18,960	58	1,098	0.4	6.0	2.1	1,498	6	11
Middle income countries (sample)									
Mexico	5,910	101	597	0.7	2.5	2.9	311	29	65
Malaysia	3,540	24	86	4.2	1.5	1.0	101	8	39
Brazil	2,850	174	498	1.5	3.4	4.9	267	36	260
South Africa	2,600	44	114	3.0	3.7	5.1	255	71	340
Thailand	1,980	62	122	5.2	2.1	1.6	71	28	44
China	940	1,281	1,210	8,0	1.9	3.4	45	39	60
Sri Lanka	840	19	16	3.0	1.8	1.8	31	19	60
Low income countries (sample)									
Indonesia	710	212	150	3.7	0.6	2.1	19	45	470
India	480	1,048	502	4.4	0.9	4.3	23	93	440
Pakistan	410	145	59	4.4	0.9	3.2	18	109	200
Bangladesh	360	136	49	4.4	1.4	2.4	14	77	600

Table I. Economic status, expenditure on health, and health outcomes

Source: World Development Report, 2004, The World Bank

Mahoney, M.; Mahoney, Mary; Townsend, Mardie; Hallebone, Erica; Nesbitt, Pat. (2001)[17], viewed that access to high quality healthcare is of prime importance in rural populations of Australia. The governments improve quality of services through targeting funds and concentrates on managing the services. Attracting and retaining the doctors in rural areas is a challenge due to which There's higher levels of morbidity and mortality in rural areas. The cohesion between the community and the healthcare center is diminishing. Proving quality services and adequate infrastructure is not sufficient but collaborating with the community and creating cohesion will give success to rural healthcare in Australia.

Kinsella. 2001**[18]**; Langmore (2001)**[19]** summarized that there's very less attention given to health in the developing world. Most of the things are summarized by the National Research Council's Panel on urban population dynamics in USA which was studied by Montgomery et.al. in 2003. This panel came up with findings of urban population of

modern day live longer than rural residents. With exception to HIV rest of others exhibited health care indicators better than rural areas. Some of the factors thought about are environmental such as better equipped and greater density of health facilities. Other factors also such as better remuneration and education levels.

Health Issues in the Parliament. Rajya Sabha Starred Question No. 489, (27 August 2001)[20] discussed that the successive 5 year plans allocated less and lesser to the health budget A major share of the health budget is spent on family welfare. While 75 percent of India's population lives in the rural areas there's just less than 10 percent of budget allocated for these people. Most of the primary health programs are diverted to family planning, ancillary vertical national programs such as child survival and safe motherhood which are seen as statistical targets but not as health services. According to one study there's 85 percent PHC budget used for salaries.

CII-McKinsey & Company Report (2002)[21], has said huge investments are needed in healthcare sector in India. The next ten years if this investments are done then the healthcare scenario will drastically improve. But the money spent by the government is meager leading to a strain on the public health sector.

Table 2.3: Investment needed in the health sector for the next ten years

Investment	Amount (Rs. '000 crore)
Secondary beds	60-90
Tertiary beds	30-40
Medical colleges	2-3
Nursing schools	2-3
Other health professionals (*)	2-4
Total	100-140

Note: (*) Pharmacists, technicians, administrators, etc.

Table II.
Investments needed in health sector: next ten years

Source: CII-McKinsey and Company Report (2002), Healthcare in India: The Road Ahead.

Kawachi I., et.al. (2002)[22] has said that if someone's life expectancy is low because of the lack of medications, healthcare infrastructure, manpower and financing patterns then its healthcare inequity. There's a profound social and economic inequality in healthcare. In an overpopulated country such as India with its complex social architecture and economic extremes there will be an effect on health system which is multifold. There's an unequal distribution of resources is a reflection of inequality and it adversely affects the rural population which is mostly poor. The socially underprivileged are not able to access healthcare due to geographical social and economic or gender related distances. The burgeoning private healthcare makes the gap between rich and poor more apparent for inequality.

Ashok Vikhe Patil, K. V. Somasundaram, R. C. Goyal. (2002)[23] has said in the case of medical research, a meager sum is allotted for major killers due to rural urban disparities. While 20% of research grants are allocated to studies on cancer, which is responsible for 1% of deaths, less than 1% is provided for research in respiratory diseases, which accounts for 20% of deaths

United Nations Habitat. (2003)[24] in their report said there are not many studies conducted to compare the rural and urban poor. The data indicates that rural poor are at a greater disadvantage than the urban poor. The public services such as healthcare facilities, safe drinking water, sanitary waste disposal are often unequally distributed within regions despite their availability in cities. This type of infrastructure is extremely important in determining individual health risks.

Booysen, Frikkie le R. (2003)[25], said that Urban-rural disparities in healthcare access continue to persist in South Africa. There's discrimination of care for the poor. In case of the urban areas sometimes the disparity is more. Rural population is dependent on public health. There's limited evidence of the disparity. This article emphasizes the role

envisaged for future decentralization of selected health services to local government authorities. What is the role played in addressing these inequalities have to be seen.

Goldberg, J. et.al. (2004)[26] has pointed out that the healthcare inequities such as infrastructure, manpower and financing patterns are there but also can include differences in the presence of having the disease, health outcome or access to healthcare. Disparities in the quality of health across populations are well-documented globally in both developed and developing nations.

Peek-Asa, Corinne; Zwerling, Craig; Stallones, Lorann. (2004)[27], pointed out that in the United States, injuries are the leading cause of death among individuals aged 1 to 45 years and the fourth leading cause of death overall. Rural populations exhibit disproportionately high injury mortality rates. Deaths resulting from motor vehicle crashes, traumatic occupational injuries, drowning, residential fires, and suicide all increase with increasing rurality. He describes differences in rates and patterns of injury among rural and urban populations and discuss factors that contribute to these differences.

S.K. Mishra (2004)[28] opined that 75 percent doctors work in urban areas, 23 percent work in semi urban (towns) and only 2 percent work in rural areas. Where the 70 percent of Indian population lives. The north eastern areas are hilly regions and many tribal areas are spread across the country making it more difficult to reach. Telemedicine is the solution for these areas. Regarding the cost effectiveness of the Telemedicine, an Impact Study conducted on one thousand patients revealed that there was a cost saving of 81%. That is the patients spent only 19% of money which they would have otherwise spent in terms of expenses towards travel, stay & for treatment at the Hospitals in the cities. In case of off-shore Islands the cost saving is enormous both to the Govt. and the Patients.

Jutting, Johannes P. (2004)[29], points out that community-based health insurance is an emerging and promising concept, which addresses health care challenges faced in particular by the rural poor. The aim of this paper is to analyze whether rural Senegal members of a health insurance scheme are actually better-off than nonmembers. The results show that in poor environments, insurance programs can work: (mutual health organizations) have a higher probability of using hospitalization services than nonmembers and pay substantially less when they need care. Furthermore, the analysis revealed that while the schemes achieved to attract poor people, the poorest of the poor remained excluded.

Pathman et al. (2004)[30], has tested an assumption that average job retention duration is shorter for physicians in rural health. Poor recruitment is seen as a cause for this phenomenon.

Ponton, Kevin T. (2004)[31], looks into the program of the U.S. Department of Agriculture for hospitals and other healthcare facilities. Provision of capital to rural healthcare facilities through direct loans, loan guarantees, and outright grants; Discussion of how the three types of capital funding available under the programs work; Advantages of the program.

Reilley, Brigg et al. (2004)[32] opined that Afghanistan's health system is severely impaired in terms of preventive and curative services. There are limited human resources too. Most of them stay in the rural areas and a majority is served by the basic health units (BHU). Infectious disease and acute respiratory diseases are the primary concern. There's a clear need for increasing accessibility to health facilities. Women are more at risk than men for acquiring TB.

Olden, Peter C.; Szydlowski, Steven I. (2004)[33], opined that the rural health stake holders expect them to improve the health status of their community around them. They offer health promotion and disease prevention (HPDP) services but they confront huge barriers such as low reimbursement, low educational levels, community attitudes, personnel shortages, weak local economies and large older population.

Li, Jie et al. (2005)[34], in their article reports on a project that delivers distance training to rural health care professionals. Traveling to provide training on information-seeking skills to rural health professionals is time consuming and costly. In addition to face-to-face training, the University of South Alabama Biomedical Library's SAMNet project seeks to deliver multimedia training to rural health care professionals. The project uses information technology to package training courses combining PowerPoint slides and video instructions. This article describes the rationale, training module design and development, and the information technology and software used in the project. Multimedia packaged distance training courses provide a practical alternative to on-site training for rural health care professionals. It enables librarians to provide training without traveling tong distance, thus saving time and money. Additionally, rural health care professionals may access the modules at a time convenient to them and proceed at a pace suitable to their learning style.

Jugal Kishore. (2005)**[35]** have opined that the national health policy was formulated in 1983. Since then the determinant factors relating to health sector have been changing. Some policies and initiatives done in National Health plan – 1983 have yielded some significant results. Unfortunately in several other areas the outcomes are not as expected. The health policy was updated by the parliament of India in 2002.

Roh, Chul-Young; Moon, M. Jae. (2005)[36], in their study examine the underutilization of rural hospitals. The authors study hospital and the patient characteristics of bypassing

the rural hospitals despite the availability of comparable medical services there. The hospital characteristics of size, ownership and distance are studied. The patient characteristics of payment source, medical condition, age and race influence patient's decision to bypass local rural hospitals. This study can offer two suggestions such as a market centered approach and more effective governmental intervention for horizontal and vertical hospital integration is needed.

Sarah Atkinson; Luclia Fernandes; Andrea Caprara; Jasmine Gideon. (2005)[37], views that policies to reform health care provision often combine the organizational restructuring of decentralization with ideological restructuring through a new model of health care that gives greater weight to prevention and promotion. Decentralization provides a discretionary space to the local health system to define and develop its own activities. The central policy aim to shift the model of health care therefore must rely on incentives rather than directives and is likely to result in variation at local levels in the extent and mode of its implementation. The local processes affecting variation in local implementation of policies for prevention and promotion have not been studied in a developing country. This study does so by comparing two rural health systems with different levels of prevention and promotion activities in one of the poorest regions of Brazil, Cear State in the northeast. The health system with greater activities of prevention and promotion also has a more advanced stage of decentralization, but this is in combination with many other, interacting influences that differentiate the two health systems' ability to adopt and implement new approaches. While beyond the scope of this paper to detail options for regional and national managers to encourage the adoption of a greater focus on prevention and promotion, it is clear that strategies needs to target not only the vision and actions of local health system staff, but critically also the expectations of the local population and the attitudes of local government.

Gupta, Rajat K.; Kumra, Gautam; Maitra, Barnik C. (2005)[38], in their article focuses on public health in India. It states that the health of India's citizens have improved significantly since it gained independence from Great Britain in 1947 thanks largely to public-health efforts that have nearly doubled life expectancy while halving infant mortality rates. It mentions that India's public-health system eradicated smallpox and guinea worm, but that diseases such as diabetes and cancer are on the rise due to the increased lifespan of its citizens and changes in their lifestyle. It comments on the re-emergence of some communicable diseases which had been thought to be under control. It mentions that India has a strong public-health infrastructure but that public hospitals and clinics are understaffed.

Montgomery. Hewett (2005)**[39]** said that in the developing world there are huge regional disparities and the slum living in cities are a subset of extremely disadvantaged city dwellers.

Zimmer (2006)**[40]** opined that most of the research on developing nations rural urban differences in health have mostly considered issues that affect the elderly populations such as infant mortality, communicable diseases, reproductive health, traffic related injuries and deaths. The urban rural health of older people is totally ignored.

Chatterjee, Patralekha. (2006)[41], in their article looks at how the government is looking to improve rural healthcare. India has the best and the worst in healthcare services there's a poor public healthcare system and a state of the art private healthcare infrastructure. The articles postulates the gap between poor and rich regions of the country, the IMR, accredited social health activists, health programs in rural areas and the medical policy are a few things touched upon.

Nayak, Amar K. J. R. (2006)[42], in their article focuses on the development of mobile health units in Orissa. The accessibility issues prompted them to start these services. It

studies the benefits of its usage and how it contributes to serving tribal people and its ability to serve the patients effectively.

Weinstein MC. (2006)[43] has concluded that increased attention on cost and efficiency are prompted by scarcity of funds relative to health needs and demands which are driven by factors such as pandemics related to HIV, ageing people. There is development of expensive and innovative technologies and a heightened awareness and knowledge with higher expectations of healthcare consumers. These forces of supply and demand on healthcare market has given rise to need for sophisticated quantitative analysis, modeling and econometric modeling on the impact of ill health on wealth and vice versa which assess the technical efficiency of health interventions is considered.

Yuanli Liu; Keqin Rao. (2006)[44], says the focus of this case study is utilizing research to influence policy in a large developing country. Their experiences involve the lack of health insurance for China's rural populations and how this research helped shape China's recent policy attention and efforts on this issue. More than 80 percent of China's 700 million rural residents have no health insurance. This has been the case for the past thirty years, since the collapse of the once-successful Rural Cooperative Medical System after the economic reforms of the early 1980s. In 2002, the Chinese government announced a new rural health financing policy to provide health insurance for its rural populations, financed by a matching fund with contributions from central and local governments, as well as from individual households. This article documents the authors' experiences in addressing several critical questions for converting research results into policy actions.

K.V. Ramani, Dileep Mavalankar (2006)[45] has shown in Figure 2.5 and Table V the critical areas of management concerns, causes amenable to health sector reforms and relevant reform levers to address the managerial challenges in delivering quality health services at affordable cost. The differential in social group (Table 2.5 and Table IV) and health

differential in health status of rural and urban areas shown below is very startling (Figure 2.4 and Table III).

Table 2.4: Differential in health status in rural and urban areas

Sector	Population BPL (%)	IMR	Mortality	Percent children underweight	MMR*	Leprosy cases/10,000	Malaria cases
India	26.1	70	94.9	47	408	3.7	2200
Rural	22.09	75	103.7	49.6	–	–	–
Urban	23.62	44	63.1	38.4	–	–	–
Better performing states							
Kerala	12.72	14	18.8	27	87	0.9	5.1
Maharashtra	25.02	48	58.1	50	135	3.1	138
TN	21.12	52	63.3	37	79	4.1	56
Low performing states							
Orissa	47.15	97	104.4	54	498	7.05	483
Bihar	42.60	63	105.1	54	707	11.83	132
Rajasthan	15.28	81	114.9	51	607	0.8	53
UP	31.15	84	122.5	52	707	4.3	99
MP	37.43	90	137.6	55	498	3.83	528

Table III. Differentials in health status

Source: K.V. Ramani, Dileep Mavalankar (2006)[122], Health system in India: opportunities and challenges for improvements. Journal of Health Organization and Management. Volume 20 issue 6. pp. 560-572

Table 2.5: Differentials between social groups of India

Indicator	IMR/1,000	Mortality/1,000	Percent children underweight
India	70	94.9	47
Scheduled castes	83	119.3	53.5
Scheduled tribes	84.2	126.6	55.9
Other disadvantaged	76	103.1	47.3
Others	61.8	82.6	41

Table IV. Differentials between social groups

Source: K.V. Ramani, Dileep Mavalankar (2006), Health system in India: opportunities and challenges for improvements. Journal of Health Organization and Management. Volume 20 issue 6. pp. 560-572

Table 2.6: Areas of concern and relevant reform levers

Area of concern	Causes amenable to reforms	Relevant reform levers
Non-availability of staff	Outdated policies and incentive structure Role of paramedics limited Remote decision making	Organizational change and policy reforms Empowerment of nurses and paramedical staff Decentralization
Weak referral system	Lack of integration	Strengthen communication and transport infrastructure Behavioral change
	Ignorance of referral system	Health awareness
Poor service delivery	Weak logistics management	Data based management planning, monitoring, and control
	Under-utilization of resources	Granting autonomy
Funding shortfalls	Absolute shortfall Systemic inefficiencies	Public-private partnerships Increasing government health budgets Organizational change
Lack of accountability for quality of care	Obsession with FP targets Low staff motivation Lack of transparency	Overall performance of the health system e-governance

Table V. Areas of concern and relevant reform levers

Source: K.V. Ramani, Dileep Mavalankar (2006), Health system in India: opportunities and challenges for improvements. Journal of Health Organization and Management. Volume 20 issue 6. pp. 560-572

Ziller, Erika C.; Coburn, Andrew F.; Yousefian, Anush E. (2006)[46], opined that multiple studies have documented higher uninsurance rates among rural compared to urban residents, yet the relative adequacy of coverage among rural residents with private health insurance remains unclear. This study estimates underinsurance rates among privately insured rural residents (both adjacent and nonadjacent to urban areas) and the characteristics associated with rural underinsurance. It has been found that 6 percent of privately insured urban residents were underinsured; the rate increased to 10 percent for rural adjacent and 12 percent for rural nonadjacent residents. Multivariate analyses suggest that rural residents' underinsurance status is related to the design of the private plans through which they have coverage.

Chakrabarti, Anindita; Chaudhuri, Kausik. (2007)[47], in their article examines the role played by the various socio economic and community level factors which determines antenatal and maternal healthcare utilization pattern. It has used data from National Family Health Survey carried out in 1998/99. This analysis points out that availability of healthcare infrastructure will encourage its usage.

Mukherjee, Srabanti; Bandhopadhyay, N. R.; Bhattacharya, B. K. (2007)[48], as per their study which is based on an astonishing data found in the Budget 2004 of the State of West Bengal. Inspite of rising budgetary allocation to health it is still seen that 11 percent of population dies without any medical attention. Use of institutional medical services is very low which is just 14.75 percent. 74 percent of rural population dies after receiving non institutional health care services.

Das. Hammer (2007)[49] has concluded in their study that developing nations the urban health care system is increasingly privatized and monetized due to rising incomes. This monetization resulted in excellent quality of care for some still it's a limiting factor for the

urban and rural poor. Even the same study is done by Dussault. Franceschini. In 2006 which points to the same.

Neckerman., Torche (2007)[50] has showed that the evidence points out that intraregional disparities are widening due to inequalities due to the result of globalization, market transformation, growing returns of education and weakening of inequality reducing infrastructure.

FICCI-KPMG report (2007)[51], India's healthcare sector is expected to be $280 billion in size by 2020, growing at a compound annual growth rate of 16 per cent, but it is in "dire need" of right policy framework and infrastructure push.

Dummer, Trevor J.B.; Cook, Ian G. (2007)[52], opined that China is faced with the task of dealing with health problems such as TB, Schistosomiasis and high rates of IMR and MMR. These challenges merge with HIV, respiratory problems, Avian Flu, and other recently epidemics. This creates an extra burden on the Chinese healthcare system which will need a rethink of the health provision across China. It needs one policy that can focus on the rural poor and the remote parts of the nation. It should also ensure privatization is evenly balanced by increased state investment in basic health provision.

Sarosh Kuruvilla, Mingwei Liu. (2007)[53] did a case study on Yeshasvini Health Insurance Scheme for rural farmers and peasants of Karnataka. It's the world's largest health insurance scheme for the poor. Drawing huge response of this scheme which reached to 2.2 million in the second year is commendable and a model to replicate. Each farmer is charged approximately US $2. The most innovative aspect is the mobilizing these numbers who are largely dispersed peasants. The drawbacks are the self financing and free choice principles have not yet been implemented. The Yeshasvini scheme has creatively solved the first two problems through the use of the government Department

of Cooperatives, and has found a way to net work the relatively well developed system of private hospitals in Karnataka into an effective ma chine for healthcare delivery. From a public policy perspective, more attention needs to be paid to the first two preconditions. Clearly, the question of importance here is whether developing nations have the ability to create a "healthcare back bone", i.e., just as the Internet served as a key communication "back bone", there need to be parallels in the healthcare world to solve the administrative infrastructure problem. An interesting suggestion in this regard is for India's far flung net work of post offices to be used as part of this back bone, to register subscribers and collect their premiums (although it must be acknowledged that post offices in India are not modernized to take on the complex tasks of premium collection and issuing of identity cards). It is possible that addressing the first two preconditions requires diverse approaches in different localities. The third precondition, building a healthcare net work, is a problem that can be solved: given a large enough sub scriber base, it is possible that the healthcare infrastructure can be built. The more challenging issues are the first two preconditions, mobilizing a large sub scriber base and finding ways to enroll them, but the Yeshasvini case demonstrates the importance of using the law of large numbers to de sign an affordable health security system for the poor.

Bhandari L, Dutta S. (2007)[54]. It has been found that 45 percent in the surveyed 143 public facilities are having absenteeism of the doctors. In the regular hour time its found that 56 percent of the time there's an unpredictability pattern of closure and absenteeism of doctors that have put the patients through lot of difficulties. Rural healthcare facilities are therefore considered to be poorly managed by the government due to poor supervision and monitoring. Even though huge strides have taken place in improving rural healthcare infrastructure its still found that a huge gap is still there. The country needs more PHC's as per the norms of WHO.

Brown, Theodore M.; Fee, Elizabeth. (2008)[55], in their article focuses on the Bandoeng Conference of 1937. Particular attention is given to the affect the conference had on rural health and development. The author reports that the conference, increasingly regarded as a milestone event, unleashed a pouring of interwar interest in rural hygiene. Mainly due to the leadership of the League of Nations, rural hygiene became a key focus in international politics, as world leaders drew attention to the overwhelming health needs of poor rural populations in Europe and the world. These rural populations were dealing with disease and mortality, restricted access to modern medical providers and the benefits of public health practitioners, as well as struggling with the devastation of the worldwide economic depression.

Hua Li; Gene Hsin Chang.(2008)[56], opined that most of the research talks about urban rural disparity since the beginning of reform period in 1978. The gap is much smaller now than before. The better infrastructure in rural areas has reduced urban rural disparity and health conditions such as infant mortality has improved.

O'Toole, Kevin; Schoo, Adrian; Stagnitti, Karen; Cuss, Kate. (2008)[57], viewed that retaining manpower is a huge problem in rural healthcare of Australia. This research has three elements of doctor needs, community needs and organizational needs. There's a tendency that retention of allied health professionals in private rural healthcare is better of then public healthcare managed by government. They are locked into a bureaucratic model where the relationships are hierarchical and asymmetrically controlled.

Paslidis, Nick; Schlesier, Sarah; Collier, Steven. (2008)[58], in their article offers information on how to have a successful implementation of an electronic health records (EHR) to a rural community health network in the U.S. It illustrates the use of EHR system which should be applied to specific needs and environment of the community's health care center. It notes that specifying the needs and benefits would not only help build the case

for the transition, but would also help determine the features to recommend when selecting a system. Moreover, electronic record-keeping could also allow health centers to gather data on the degree and impact of implementation of performance measures.;

Purohit, Brijesh C. (2008)[59] in his research paper attempts to study the state of West Bengal which is a low income state of India. Overall efficiency of public health delivery remains low. This is owing to the factors such as differentials in availability and utilization of hospitals, beds, and manpower. This adversely affects life expectancy. A considerable resource mobilization to improve healthcare infrastructure is required. The rural sanitation can also be improved to create better health outcomes.

Walaiporn Patcharanarumol; Mills, Anne; Viroj Tangcharoensathien. (2009)[60], in their paper analyses household coping strategies for illness in four Lao villages. The villagers dealt with health expenditure themselves, using coping mechanisms which drew mainly on social networks within the community. They strongly believed in the principle of paying user fees and did not consider exemption from fees an option. A total of 12 households (6 per cent of households) faced catastrophic expenditure arising from healthcare payments. The national policy on exemptions did not protect the poor and the study demonstrates that there is an urgent need for the government to improve the design and implementation of exemptions or reform the policy on subsidizing health care.

Gnawali, Devendra Prasad et al. (2009)[61], in their study tried to quantify the impact of community-based health insurance (CBI) on utilization of health care services in rural Burkina Faso. Propensity score matching was used to minimize the observed baseline differences in the characteristics of insured and uninsured groups such that the observed difference in healthcare utilization could generally be attributed to the CBI. Compared with those who were not enrolled in the CBI, the overall increase in outpatient visits given illness in the insured group was about 40% higher, while the differential effect on

utilization of inpatient care between insured and non-insured groups was insignificant. Not only were the very poor less likely to enroll in CBI, but even once insured, they were less likely to utilize health services compared to their wealthier counterparts. The overall effect of CBI on health care utilization is significant and positive but the benefit of CBI is not equally enjoyed by all socioeconomic groups. The policy implications are: (a) there is a need to subsidize the premium to favor the enrolment of the very poor; and (b) various measures need to be placed in order to maximize the population's capacity to enjoy the benefits of insurance once insured.

Hudson, Sara. (2009)[62], in her article focuses on the role of community stores in determining the health outcomes of people living in the remote Australian communities. As stated the local stores are often the only source of food in remote areas without a range of healthy food options. The indigenous children have 30 times more probability of suffering from malnutrition than non indigenous. Therefore, subsidizing of outback stores by government from the community will only make it less economically attractive to them.;

Baleta, Adele.(2009)[63], in their article reports on the efforts of a team of doctors to reform Zithulele Hospital in South Africa. Zithulele Hospital was established by missionaries in 1956 and is run by the provincial health department. In 2009, the hospital has expanded into a multidisciplinary team consisting of 22 members, including doctors, physiotherapists, occupational therapists and pharmacists, among others. Despite the challenges they encounter, the team was able to manage and improve maternal and child health care in the hospital. The author argues that Zithulele Hospital offers a signal of hope to rural health**.**

AHA News (2009)[64] points out that the Shawano County Rural Health Initiative aims at providing healthcare for farmers in Shawano, Wisconsin. The initiative was spearheaded

by ThedaCare, a four-hospital community health system based in Appleton. ThedaCare organizes community plunges wherein health system, community and business leaders took a bus to visit farmers and hear their health problems.

Murawski, Lisa; Church, Richard L.(2009)[65], viewed that accessibility to health facilities is a major issue for many developing countries. There are poor all weather roads, poor transportation facilities and weather conditions play a role too. In Suhum District of Ghana a new model of Maximal covering network improvement problem (MC-NIP) is formulated and implemented. This saw an improvement in the all season access to health care services.

Goudge, Jane et al. (2009)[66], viewed that illness is a major risk to people's livelihoods in resource-poor settings, particularly where there are rising levels of chronic illness. Measures that improve access to treatment are increasingly seen as a vital form of social protection for vulnerable households, and central to the achievement of the Millennium Development Goals. International attention is also focused on cash transfers as a strand of social protection, and on the potential complementarities between free health care and cash transfers in assisting vulnerable people to cope with illness-related shocks. South Africa provides an interesting setting to examine how households are accessing social protection measures because the government has removed some user fees, implemented hospital-level exemptions and extended cash transfers including the non-contributory pension and child support grant. This paper presents findings from household research in rural South Africa. Qualitative and quantitative methods were used to assess the links between illness-related costs and impoverishment over time, the protection effects of free health services, cash transfers and social networks, and the factors influencing access to these three forms of social protection. Different degrees of success in drawing on these resources affected capacity to cope with illnesses and made a considerable difference to whether households sustained their livelihoods, struggled or

declined. Cash transfers combined well with free health care to build resilience among some households. However, households without access to at least two strands of the social protection net were impoverished by the direct and indirect costs of long-term illnesses. The implications for policies on improving the uptake and coverage of social protection measures are discussed.

Managed Care Outlook, (2009)[67] views that there's a huge significance of remote monitoring devices in addressing growing health disparities in rural areas in the U.S. It notes that the idea of these devices is to create an instrument that allows data to be captured and collected around the lifestyle of the consumer. Moreover, it mentions that, with such devices, chronically ill patients, particularly those at the greatest risk of developing complications from diabetes or heart disease, can be addressed. The same was studied before by Walker, Judi. In 1999.

Dongfu Qian et al. (2009)[68], in his paper examined the determinants that influence rural healthcare decisions in Gansu province of china. Price and distance play a significant role in the choice of rural health facilities. When they have issues of provider quality or reputation and if their health status is poor then they don't mind traveling long distances to avail healthcare. The insurance status also plays a significant role.

Kinra, Sanjay; Ben-Shlomo, Yoav. (2010)[69] have analyzed the Bachelor of Medicine and of Surgery (MMBS) rural degree in India. They state that the degree will be of shorter duration than the standard MMBS in the country and the graduates of the degree will be allowed to practice only in rural areas. They note the debate that emerges with regard to the short duration of the degree.

Chatterjee, Patralekha. (2010)[70], in their article looks at the benefits of the Lifeline Express train that was renovated into a hospital in India. India's Lifeline Express is the

world's first hospital train, created by Impact India Foundation in 1991 and is financed by various agencies and individuals. Its mission and concept has been adopted by other countries, such as China, Zimbabwe and Bangladesh. According to the author, the hospital train has been providing health services to Indians in rural areas. He adds that although the hospital train cannot solve all the problems in India's public health system, it is an effective means to bring about changes.

Yardim, Mahmut Saadi; Cilingiroglu, Nesrin; Yardim, Nazan. (2010)[71], in their study identified the level of catastrophic health expenditure (CHE) in Turkey and, to reveal household factors predicting this outcome. CHE is calculated from a national representative data derived from TurkStat, Household Budget Survey, Consumption Expenditures, 2006. The methods introduced by Ke Xu and colleagues are employed for calculations. The proportion of households with CHE is 0.6%. Impoverished households consist 0.4% of total. Average out-of-pocket health payment is 7.36 USD (PPP$-2006) in lowest fifth that is approximately one tenth of the highest fifth (70.18 PPP USD-2006). In the logistic model, probability of facing CHE increases by each unit rise of per capita expenditure. Household head's health insurance is closely related with catastrophe. Rural households face 2.5 times more catastrophe than the urban area residents. Having preschool child in the household is seen as a protective factor for catastrophic expenditure. On the other hand, elderly or disabled person increases risk of catastrophe. Results indicate that more people in Turkey benefited from risk pooling/health insurance by 2006 and were, therefore, on average, better protected from catastrophic medical expenses, than in many other countries with comparable income levels at that time.

Madon, Shirin; Krishna, S.; Michael, Edwin. (2010)[72], in their article presents a case study which discusses the aspects of decentralisation and the purpose of health information systems (HIS) in primary health care delivery under the health care reform in Karnataka, India. It states that HIS tends to present de facto accountability forms, wherein reporting

aims to account expenses. It also mentions latest and emergent procedures from projects commissioned by nongovernmental organizations (NGO) that would help enhance health condition in communities.

Zactiary Zimmer, Toshiko Kaneda, Zhe Tang (2010)[73], viewed that some older people have advantage over others by the virtue of where they live. In China and the Beijing municipality the rural areas are more monetized than the urban areas affecting the healthcare delivery there. The data has been collected from across China covering all the areas and found that the urban have advantage over the rural in provision of healthcare. This is attributed to better living conditions, increased income levels and higher socio economic status than the rural people. Therefore the rural areas need higher investment to create facilities.

Balfour, Frederik; Zhao, Yidi. (2010)[74], in their article discusses a 3-year, $125 billion health-care plan to be implemented in China and marketing by companies like GE Healthcare, Philips Electronics, Siemens, and others to garner associated business. The companies are said to be developing products applicable to China's rural population who lack adequate health care. Ultrasound and CT scanning equipment are among the products being marketed.

Hajizadeh, Mohammad; Connelly, Luke B. (2010)[75], in their paper examines the progressivity of health insurance premiums and consumer co-payments in Iran by calculating Kakwani Progressivity Indices using data from annual national household surveys between 1995/96 and 2006/07. During this period, the Urban Inpatient Insurance Scheme in 2000 and the Rural Health Insurance Scheme in 2005 extended health insurance coverage in urban and rural areas. Unexpectedly, the results suggest that both of these initiatives had regressive impacts on the distribution of health care financing in Iran, which could be explained by public sector activity having crowded out

private sector charitable activity. Although this study does not address changes in the distribution of health care utilization, these results for healthcare financing suggest the need for caution in the implementation of such programs in low-income and middle-income countries. If charitable activity already results in the provision of healthcare to the poor at zero or low prices, public intervention may not improve the progressivity of healthcare financing.

Vandemoortele, Milo. (2010)[76] in their study said that the importance and need for equitable access to healthcare is very crucial to achieve the millennium development goals made by the WHO.

Jat TR. Ng N. San Sebestian M. (2011)[77]. A survey in Madhya Pradesh found that majority of the doctors work in private healthcare due to lack of facilities in rural areas. The basic facilities are not provided to these people in the rural areas. By skill up gradation and training and government facilitating good healthcare infrastructure and prohibiting illicit and unqualified practitioners the government would do a favor for rural healthcare. Its observed that 70 percent of population has no access to specialist doctors as 80 percent of the specialists live in urban area. Poor quality of state run hospitals in the rural areas force them to go to the private clinics. The overall healthcare utilization is low only half of Indian mothers (52 percent) receive three or more ante natal checkups. Only 43.5 percent children receive vaccination. The peripheral centers are not utilized but the tertiary and secondary care facilities of the government are overcrowded and busy always lacking beds to care for the patients resulting in compromise of quality care. The underutilization of the peripheral centers is because of many reasons such as accessibility, quality, affordability, deficient human resource, poor monitoring, lack of community participation and ownership. Deep rooted corruption is pervading all areas of purchase of equipments and diagnostics.

Rural Health Statistics in India (2011)[78] has pointed out that public health made huge strides after independence. The IMR has dropped from 150 to 50 which is a threefold reduction. The MMR declined 10 folds from 2000 to 200 per 100,000 live births. Life expectancy has gone up from 31 to 65 years of age. Despite the explosion in population which is tripled, the overall doctor population is now 1:1800 which reflect a 3.5 fold improvement. PHC's are the cornerstone for delivering rural healthcare. The number of PHC's has increased from 77 in first plan (1955) to 23,887 in 2011 which is a 300 fold increase of rural infrastructure. The manpower specially doctors working in PHC's is not bad as thought about. The shortage of doctors is only 12 percent. Each year the government is recruiting an additional 1200 doctors per year. If this trend continues management of the shortage of doctors without increasing the number of medical colleges.

Planning Commission of India (2011)[79] in their report said that less than 1 percent of Gross Domestic Product (GDP) is allocated for healthcare which is grossly inadequate. Therefore the fundamental reason for poor functioning of Indian rural health system and ill health indicators is the low level of investment in rural healthcare. Due to this scenario India is saddled with high burden of preventable diseases that traps households into poverty. Public health financing is pivotal for providing financial entitlement in terms of purchase of healthcare services so that out of pocket expenses are taken care of. There's a need for creating better infrastructure, increasing the manpower, providing adequate essential drugs free of cost and an increased financial outlay for healthcare in the budget. In India the public spending on health is around 1.2 percent of the GDP which is among the lowest around the world.

Kumar R. (2012)[80] The present rural health scenario is a crisis unmatched to any other social sector where nearly 86 percent of all the medical visits are made by the rural

residents. Majority of them travel a long 100 km distance to avail the healthcare. Out of this its found that 70-80 percent of them pay for the services landing them in poverty.

Shukla S. (2012)[81]. Most of the problems in rural healthcare is because of poor management and a rampant corruption at every level. Even Uttar Pradesh government was accused of fraud to the tune of 10,000 Crores in the NRHM program.

MBBS a 6.5 year course. (2012)[82]. The doctors are reluctant to work in the rural areas but this is a global phenomenon. The students no doubt should be exposed to public healthcare management and problems. This can be done through including curriculum related to this instead of coercive tactics of extending 5.5 year course to 6.5 years and also by making postings in rural areas mandatory for a year and banning doctors not to go abroad.

Arogya Raksha Yojana. (2012)[83] India still spends only one percent of its GDP on health compared to 8.3 percent by USA and 3 percent by China. There sre wide gaps between rural and urban healthcare systems. There are a staggering 70 percent of population living in rural areas and have no adequate access to hospitals and clinics. The rural population mostly depends on alternative medicine and government programs for rural health. One such program is NRHM. The urban areas in contrast have numerous private hospitals and clinics providing quality healthcare and preventive medicine too. The not so profitable rural areas are deprived of these facilities.

Rural spending outpaces urban consumption. (2012)[84]. The allopathic private sector is nonexistent in villages some years ago. Today India is a flourishing economy and many rural residents have the capability and want to pay for private healthcare for acquiring quality services.

Iyengar S. Dholakia RH. (2012)[85]. The location of PHC's and CHC's are far from each village thereby a visit from their village to the health center causes a daily wage loss. This leads to accessing private healthcare by paying in the village itself. The government is reluctance is obvious with only 0.9 percent of GDP is spent on healthcare. They spend average 14 percent of household income on health care. People are reluctant to use public healthcare services.

Sharma RK. Dhawan S. (1986)[100]. There's a bypass of the first contact of rural healthcare. Many people visit the private practitioners, hermits, witch craft, etc due to the lack of faith in the rural health care providers. Healthcare personnel are also reluctant to work in rural areas due to poor living facilities created by government for them. Without electricity and water it becomes a challenge to stay in these places.

Nandan D. Agarwal (2012)[86], in their study found that though government brings about lot of policies and programs the success and effectiveness of these are questionable due to the gap in implementation of these programs. There are limited PHC's in rural areas. India today faces severe shortage of manpower for health. The public health infrastructure continues to face shortage of 85 percent specialist doctors, 75 percent doctors, 80 percent lab technicians, 53 percentages of nursing staff shortage and 52 percent of ANM posts are vacant across the states of India.

Madhav G. Deo. (2013)[87]. A high level expert group report on universal health coverage for indian planning commission in 2011 opined that the ideal situation is when health and education of its citizens are public sector programs. Even in advances countries those phenomenon is not seen as there are many private players. In urban India the private sector accounted for only 8 percent of healthcare in the past sixty years ago. The urban health has increased to 80 percent in the recent past.

WHO (2014)[88] in their report said it's not possible to have complete equality in health as there are many other factors that are beyond the influence of humans. One such factor is the genetic composition which can cause ill health and is beyond the control of humans. Because of it, if some die before the others it's not equality.

Ashok Panagariya. (2014)[89]. The apex administration and regulatory body of health in India lacks the expertise technically and needs overhauling. The middle level managers of rural healthcare which are CMHO's BMO's are unable to achieve anything. They are a weak link between the higher authority and peripheral centers of healthcare.

The negligible 0.9 percent spending on public healthcare has recently been increased to 2 percent but still remains to be very low. High out of pocket expenses which is almost 70 percent of per capita expenses is uncalled for there's a huge money spent on curative rather than on preventive health. Despite the available resources generated from higher economic growth yet nothing significant has been achieved in public health. Lack of clear vision, absence of strategies, lack of motivation zeal and enthusiasm combined with failure of the huge bureaucratic leadership are some reasons for the impairment of rural healthcare delivery.

Ministry of Health and Family Welfare (2015)[90], website has posted the national health policy which is being worked upon for 2017 and a draft for public consultation is released in 2015. It clearly demarcates the need to deal with rural urban disparities that exist in Indian public healthcare.

Zaidi S, Riaz A, et.al. (2015)[91]. An indepth study of this Contracting the maternal, newborn and child health (MNCH) services at a government hospital is studied as a case

study in Pakistan. A cross sectional study was conducted between the government run hospitals and the government contracted its hospitals to large NGO's. It demonstrates that it can improve the utilization of hospital facilities and can also bring about quality of the services delivered. But its insufficient to bring increase in the service access across the remote rural areas. It requires some accompanying measures for providing the demand enhancement, access, transportation and targeting the disadvantaged patients living in rural areas.

References

1. Feldman, Roger; Deitz, David M.; Brooks, Edward F. (1978), The Financial Viability of Rural Primary Health Care Centers. American Journal of Public Health, Oct78, Vol. 68 Issue 10, p981, 8p;
2. Preston, Samuel H., and Etienne van de Walle. 1978. "Urban French Mortality in the Nineteenth Century." Population Studies 32(2):275-97.
3. Scheffler, Richard M.; Kushman, John E. (1978), New Health Practitioners and Rural Health Care. American Journal of Agricultural Economics, Nov78, Vol. 60 Issue 4, p691, 4p;
4. McLaughlin, Curtis P.; Ricketts, Thomas C.; Freund, Deborah A.; Sheps, Cecil G. (1985), An Evaluation of Subsidized Rural Primary Care Programs: IV. Impact of the Rural Hospital on Clinic Self-sufficiency. American Journal of Public Health, Jul85, Vol. 75 Issue 7, p749-753, 5p;
5. Kearns, G. 1988. '"The Urban Penalty and the Population History of England." Pp. 213-36. Society, Health and Population during the Demographic Transition. A. Brandstrom and L. Tedebrand, editors. AJmquist and Wiskell International.
6. Mann JM. , Gostin L, Gruskin S, Brennan T, Lazzarini Z, Fineberg HV. Health and human rights. Health Hum Rights 1994; 1 : 6-23.)
7. Mosvovice, Ira; Christianson, Jon. (1995), Rural hospital networks: Implications for rural health reform. Health Care Financing Review, Fall 95, Vol. 17 Issue 1, p53, 15p, 4 Charts;
8. Beggs, J.J., V.A. Haines and J.S. Hurlbert. 1996. "Revisiting the Rural-Urban Contrast: Personal Networks in NonmetropoUtan and Metropolitan Settings." Rural Sociology 6l(2):306-25.
9. Drummond M., Jonsson B., Rutten F. (1997). The role of economic evaluation in the pricing and reimbursement of medicines. Health Policy 1997; 40: 199–215.

10. Szreter, S. 1997. "Economic Growth, Disruption, Deprivation, Disease and Death: On the Importance of che Politics of Public Health for Development." Population and Development Review 23(4): 693-728.

11. Voluntary Health Association of India (VHAI). 1997. Report of the Independent Commission on Health in India.

12. Duggal R. (1997), Health Care Budgets in a Changing Political Economy. Economic and Political Weekly May: 17–24.

13. LaFleur, Elizabeth K.; Taylor, Susan Lee; Sumrall, Delia A. (1997), Assessing the Health Care Needs of a Rural Community. Marketing Health Services, Winter97, Vol. 17 Issue 4, p12-19, 8p, 1 Color Photograph;

14. House, James S., James M. Lepkowski, David R. Williams. Richard K Mero, Paula M., Stephanie A. Robert and Jieming Chen. 2000. "Excess Mortality Among Urban Residents: How Much, For Whom, and Why?" American Journal of Public Health 90(12): 1898-1904

15. Government of India. Bulletin on Rural Health Statistics in India, December 1999. New Delhi: Rural Health Division, Ministry of Health and Family Welfare, 2000.

16. Krasovec Katherine and Shaw Paul R (2000); Reproductive health and health sector reform linking outcomes to action" World Bank Institute, The World Bank, Washington D.C. USA.

17. Mahoney, M.; Mahoney, Mary; Townsend, Mardie; Hallebone, Erica; Nesbitt, Pat. (2001), An 'upside-down' view of ruralhealth care. International Journal of Consumer Studies, Jun2001, Vol. 25 Issue 2, p102-113, 12p

18. Kinsella, Kevin. 2001. "Urban and Rural Dimensions of Global Population Aging: An Overview." Journal of Rural Health 17(4):314-22.

19. Langmore, John. 2001. "Rural Aging: A Global Challenge." Journal of Rural Health 17(4):305-306

20. Health Issues in the Parliament. Rajya Starred Question No. 489, 27 August 2001. Health for Million, Voluntary Health Association of India, 2000; 27: 5–6.

21. CII-McKinsey and Company Report (2002), *Healthcare in India: The Road Ahead*.

22. Kawachi I., Subramanian S., Almeida-Filho N. "A glossary for health inequalities. J Epidemiology Community Health 2002;56:647–652;56:647–652).

23. Ashok Vikhe Patil*,* K. V. Somasundaram*, and* R. C. Goyal*.* "Current Health Scenario in *Rural India." Australian Journal of Rural* Health *10, no. 2 (*2002*): 129–135.*

24. United Nations Habitat. 2003. The Challenge of Slums: Global Report on Human Settlements. Earthscan.

25. Booysen, Frikkie le R.(2003), Urban-rural inequalities in health care delivery in South Africa. Development Southern Africa, Dec2003, Vol. 20 Issue 5, p.659-673, 15p.

26. Goldberg, J., Hayes, W., and Huntley, J. "Understanding Health Disparities." Health Policy Institute of Ohio (November 2004), page 3.)

27. Peek-Asa, Corinne; Zwerling, Craig; Stallones, Lorann. (2004), Acute Traumatic Injuries in Rural Populations. American Journal of Public Health, Oct. 2004, Vol. 94 Issue 10, p1689-1693, 5p, 2 Charts, 1 Graph;

28. S.K. Mishra. (2004), Telemedicine Initiatives in Indian sub-continent Question 14-1/2: Application of telecommunications in health care. Study Group-2, Document RGQ14-1/2/023-E. Rapporteur's Group Meeting On Question 14-1/2 - Hiratsuka, Japan, 25-27 June 2004.

29. Jutting, Johannes P. (2004), Do Community-based Health Insurance Schemes Improve Poor People's Access to Health Care? Evidence From Rural Senegal.World Development, Feb2004, Vol. 32 Issue 2, p273, 16p;

30. Pathman, Donald E.; Konrad, Thomas R.; Dann, Rebekkah; Koch, Gary. (2004), Retention of Primary Care Physicians in Rural Health Professional Shortage Areas. American Journal of Public Health, Oct2004, Vol. 94 Issue 10, p1723-1729, 7p

31. Ponton, Kevin T. (2004), an unusual capital source for rural hospitals: agriculture. Healthcare Financial Management, Nov2004, Vol. 58 Issue 11, p116-120, 3p;

32. Reilley, Brigg; Frank, Thorsten; Prochnow, Thomas; Puertas, Gloria; van der Meer, Joost. (2004), Provision of Health Care in Rural Afghanistan: Needs and Challenges. American Journal of Public Health, Oct. 2004, Vol. 94 Issue 10, p1686-1688, 3p

33. Olden, Peter C.; Szydlowski, Steven I. (2004), Health Promotion and Disease Prevention by Small Rural Hospitals: Reasons, Obstacles, and Enablers. Journal of Healthcare Management, Mar/Apr2004, Vol. 49 Issue 2, p89-101, 13p

34. Li, Jie; Runderson, Robert A.; Burnham, Judy F.; Staggs, Geneva Bush; Robertson, Justin C.; Williams, Thomas L. (2005), Delivering Distance Training to RuralHealth Care Professionals. Medical Reference Services Quarterly, Spring2005, Vol. 24 Issue 1, p41-54, 14p;

35. *Jugal Kishore 2005.* National health programs of India: national policies & legislations related to health*. Century Publications.* ISBN 978-81-88132-13-3. Retrieved 2 September 2012*.* Kumar R. Academic institutionalization of community health services: Way ahead in medical education reforms. J Family Med Prim Care. 2012;1:10–9.

36. Roh, Chul-Young; Moon, M. Jae. (2005), Nearby, but Not Wanted? The Bypassing of Rural Hospitals and Policy Implications for Rural Health Care Systems. Policy Studies Journal, 2005, Vol. 33 Issue 3, p377-394, 18p.

37. Sarah Atkinson; Luclia Fernandes; Andrea Caprara; Jasmine Gideon. (2005), Prevention and promotion in decentralized rural health systems: a comparative study from northeast Brazil. Health Policy & Planning, Mar2005, Vol. 20 Issue 2, p69-79, 11p;

38. Gupta, Rajat K.; Kumra, Gautam; Maitra, Barnik C. (2005), A foundation for public health in India. McKinsey Quarterly, 2005 Special Edition, p6-8, 3p.

39. Montgomer, Mark R., Paul C. Hewett. 2005. "Urban Poverty and Health in Developing Countries: Household and Neighborhood Effects." Demography 42(3):397-425.

40. Zimmer, Zachary. 2006. "Population aging." Pp. 936-40. Encyclopedia of Gerontology. R. Schulz, L.S. Noelker, K. Rockwood and R.L. Sprott, editors. Springer.

41. Chatterjee, Patralekha. (2006), India's government aims to improve rural health. Lancet, 10/28/2006, Vol. 368 Issue 9546, p1483-1484, 2p

42. Nayak, Amar K. J. R. (2006), Managing Health without Doctors: A Case of Mobile Health Units (MHU).Mobile Health Unit -- Managing Health Without Doctors Case Study, 2006, p1-18.

43. Weinstein M.C. Recent developments in decision-analytic modelling for economic evaluation. Pharmacoeconomics 2006; 24: 1043–1053).

44. Yuanli Liu; Keqin Rao. (2006), Providing Health Insurance in Rural China: From Research to Policy. Journal of Health Politics, Policy & Law, Feb2006, Vol. 31 Issue 1, p71-92, 22p;

45. K.V. Ramani, Dileep Mavalankar (2006)[122], Health system in India: opportunities and challenges for improvements. Journal of Health Organization and Management. Volume 20 issue 6. pp. 560-572.

46. Ziller, Erika C.; Coburn, Andrew F.; Yousefian, Anush E. (2006), Out-Of-Pocket Health Spending And The Rural Under insured. Health Affairs, Nov/Dec2006, Vol. 25 Issue 6, p.1688-1699, 12p.

47. Chakrabarti, Anindita; Chaudhuri, Kausik.(2007), Antenatal and maternal health care utilization: evidence from northeastern states of India. Applied Economics, 4/10/2007, Vol. 3 Issue 6, p683-695.

48. Mukherjee, Srabanti; Bandhopadhyay, N. R.; Bhattacharya, B. K. (2007), Reasons for Non-Utilization of Institutional Healthcare Service in Rural West Bengal: A Perspective. Decision (0304-0941), Jul-Dec 2007, Vol. 34 Issue 2, p.113-132.

49. Das, Jishnu, and Jeffrey Hammar. 2007. "Money for Nothing: The Dire Straits of Medical Practice in Delhi, India" Journal of Development Economics 85(1).

50. Neckerman, Kathryn M., Florencia Torche. 2007. "Inequality: Causes and Consequences." Annual Review of Sociology 33:335-57.

51. FICCI-KPMG Report, 2007. (http://articles.economictimes.indiatimes.com/2015-09-01/news/66107692_1_healthcare-sector-healthcare-delivery-social-sector)

52. Dummer, Trevor J.B.; Cook, Ian G. (2007), Exploring China's rural health crisis: Processes and policy implications. Health Policy, Sep2007, Vol. 83 Issue 1, p1-16.

53. Sarosh Kuruvilla, Mingwei Liu. (2007). Health security for the rural poor? A case study of a health insurance scheme for rural farmers and peasants in India. International Social Security Review, Vol. 60, 4/2007.

54. Bhandari L, Dutta S. India Infrastructure Report; 2007. Health infrastructure in rural India.

55. Brown, Theodore M.; Fee, Elizabeth. (2008), The Bandoeng Conference of 1931: A Milestone in Health and Development. American Journal of Public Health, Jan2008, Vol. 98 Issue 1, p42-43, 2p;

56. Hua Li; Gene Hsin Chang.(2008), Disparity in Health Resource Allocation Between Rural and Urban Areas in China: Is It Getting Worse? Chinese Economy, Nov/Dec2008, Vol. 41 Issue 6, p45-55, 11p, 6 Charts;

57. O'Toole, Kevin; Schoo, Adrian; Stagnitti, Karen; Cuss, Kate. (2008), Rethinking policies for the retention of allied health professionals in rural areas: A social relations approach. Health Policy, Sep2008, Vol. 87 Issue 3, p326-332, 7p;

58. Paslidis, Nick; Schlesier, Sarah; Collier, Steven. (2008), Introducing EHRs to a Rural Practice. Physician Executive, May/Jun2008, Vol. 34 Issue 3, p30-33, 3p, 1 Color Photograph, 1 Chart;

59. Purohit, Brijesh C. (2008), Efficiency Of The Health Care System: A Sub-State Level Analysis For West Bengal (India).Review of Urban & Regional Development Studies, Nov2008, Vol. 20 Issue 3, p212-225, 14p, 10 Charts

60. Walaiporn Patcharanarumol; Mills, Anne; Viroj Tangcharoensathien. (2009), Dealing with the cost of illness: The experience of four villages in Lao PDR. Journal of International Development, Mar2009, Vol. 21 Issue 2, p212-230.

61. Gnawali, Devendra Prasad; Pokhrel, Subhash; Sié, Ali; Sanon, Mamadou; De Allegri, Manuela; Souares, Aurélia; Dong, Hengjin; Sauerborn, Rainer. (2009), The effect of community-based health insurance on the utilization of modern health care services: Evidence from Burkina Faso. Health Policy, May2009, Vol. 90 Issue 2/3, p214-222, 9p;

62. Hudson, Sara. (2009), SHOPPING FOR HEALTH. Policy, Summer2009/2010, Vol. 25 Issue 4, p27-33, 7p;

63. Baleta, Adele.(2009), Rural hospital beats the odds in South Africa. Lancet, 9/5/2009, Vol. 374 Issue 9692, p771-772, 2p, 2 Color Photographs;

64. AHA News (3/30/2009), Rural outreach for a healthier farming community. AHA News, 3/30/2009, Vol. 45 Issue 7, p4-5, 2p;

65. Murawski, Lisa; Church, Richard L.(2009), Improving accessibility to rural health services: The maximal covering network improvement problem. Socio-Economic Planning Sciences, Jun 2009, Vol. 43 Issue 2, p102-110, 9p

66. Goudge, Jane; Russell, Steven; Gilson, Lucy; Gumiede, Tebogo; Tollman, Steve; Mills, Anne.(2009), Illness-related impoverishment in rural South Africa: Why does social protection work for some households but not others? Journal of International Development, Mar2009, Vol. 21 Issue 2, p231-251, 21p, 5 Charts, 2 Graphs;

67. Managed Care Outlook, 10/1/2009. Remote Monitoring Devices Help RuralHealth Centers Keep A Closer Eye on the Chronically III. Managed Care Outlook, 10/1/2009, Vol. 22 Issue 19, p9-11, 3p;

68. Dongfu Qian; Pong, Raymond W.; Aitian Yin; Nagarajan, K. V.; Qingyue Meng. (2009), Determinants of health care demand in poor, rural China: the case of Gansu Province. Health Policy & Planning, Sep2009, Vol. 24 Issue 5, p324-334.

69. Kinra, Sanjay; Ben-Shlomo, Yoav. (2010), Rural MBBS degree in India.Lancet, 10/16/2010, Vol. 376 Issue 9749, p1284-1285, 2p, 1 Color Photograph;

70. Chatterjee, Patralekha. (2010), Hospital train provides lifeline to rural India.Lancet, 5/29/2010, Vol. 375 Issue 9729, p1860-1861,

71. Yardim, Mahmut Saadi; Cilingiroglu, Nesrin; Yardim, Nazan. (2010), Catastrophic health expenditure and impoverishment in Turkey. Health Policy, Jan2010, Vol. 94 Issue 1, p26-33, 8p.

72. Madon, Shirin; Krishna, S.; Michael, Edwin. (2010), Health information systems, decentralisation and democratic accountability. Public Administration & Development, Oct2010, Vol. 30 Issue 4, p247-260, 14p; Abstract:

73. Zactiary Zimmer, Toshiko Kaneda, Zhe Tang. (2010), Explaining Late Life Urban vs. Rural Health: Discrepancies in Beijing, Social Forces 88 (4) 1885-1908, June 2010.

74. Balfour, Frederik; Zhao, Yidi. (2010), The Ka-Ching in China Luring Medical Giants.BusinessWeek, 3/15/2010, Issue 4170, p58-58, 1p;

75. Hajizadeh, Mohammad; Connelly, Luke B.(2010), Equity of Health Care Financing in Iran: The Effect of Extending Health Insurance to the Uninsured. Oxford Development Studies, Dec2010, Vol. 38 Issue 4, p461-476.

76. Vandemoortele, Milo (2010) The MDGs and equity Overseas Development Institute.

77. Jat TR, Ng N, San Sebastian M. Factors affecting the use of maternal health services in Madhya Pradesh state of India: A multilevel analysis. Int. J. Equity Health. 2011; 10:59.

78. Rural Health Statistics in India 2011. Available from: http:// nrhm-mis.nic.in/UI/RHS/RHS%202011/RHS%202011%20 Webpage.htm, accessed on October 8, 2012.

79. Planning Commission of India. High level expert group report on universal health coverage for India. 2011. Available from: http://planningcommission. nic.in/reports/genrep/rep_uhc0812.pdf, accessed on August 6, 2014.)

80. Kumar R. Academic institutionalization of community health services: Way ahead in medical education reforms. J Family Med Prim Care. 2012;1:10–9.

81. Shukla S. India probes corruption in flagship health 9. programme. Lancet 2012; 379: 698.

82. MBBS could become a 6.5-year course soon. Available from: http://www.shiksha.com/mbbs-could-become-a-6-5-year -course-soon-article-4868-1, accessed on October 8, 2012.

83. ”Arogya Raksha Yojana” Web. 30 Apr. 2012. Accessed January 10, 2016. http://forbesindia.com/blog/health/5-things-to-know-about-the-indias-healthcare-system/

84. Rural spending outpaces urban consumption. Available 12. from: http://www.business-standard.com/india/news/ruralspending-outpaces-urban-consumption/484859/, accessed on October 10, 2012.

85. Iyengar S, Dholakia RH. Access of the rural poor to primary healthcare in India. Rev Market Integr. 2012;4: 71–109.)

86. Nandan D, Agarwal D. Human resources for health in India: urgent need for reforms. Indian J Community Med 2012; 37: 205-6.

87. Madhav G. Deo. “Doctor population ratio for India - The reality”. Indian J Med Res 137, April 2013, pp 632-635

88. WHO Equity. (n.d.). WHO. Retrieved February 27, 2014, from http://www.who.int/healthsystems/topics/equity/en/)

89. Ashok Panagariya. The Challenges and innovative solutions to rural health dilemma. Ann Neurosci. 2014 Oct; 21(4): 125–127.

90. Ministry of Health and Family Welfare. "Draft National Health Policy 2015". Retrieved 1 April 2015.

91. Zaidi S, Riaz A, Rabbani F, Azam SI, Imran SN, Pradhan NA, Khan GN. Can contracted out health facilities improve access, equity, and quality of maternal and newborn health services? Evidence from Pakistan. Health Res Policy Syst. 2015 Nov 25;13 Suppl 1:54.

CHAPTER – 3

INDIAN HEALTHCARE SYSTEM

3.1 Introduction

India's healthcare system is facing a great challenge of catering to the needs of its most disadvantaged citizens of its society. Despite the wonderful progress it achieved in improving access to healthcare there's a stark visibility of the inequalities by geography, gender and socio economic status. This problem is multiplied by the need for high out of the pocket expenditures. The financial burden is rising on Indian households which account for more than three quarters of health spending. This leads to increased poverty levels due to health expenditures. It has pushed 39 million Indians into poverty each year on year.

Some of the key challenges are equity in Financing and equity in service delivery. This includes an unequal allocation of resources for health, inadequate manpower, limited physical access to healthcare facilities, high out of pocket expenditures, behavioral factors that affects healthcare demand. The application of certain principles to bring about equity in healthcare is of prime importance. Adoption of equity metrics in Monitoring, investing, evaluation, strategic planning, and deliberative equity focused decision making in health reform, accountability and a good health systems research will go a long way. Implementation of these core principles and strengthening primary health services and public health services will ensure equitable healthcare for the total Indian population.

3.2 Economics of Healthcare System

Economic considerations have assumed an increasingly prominent role in the planning, management and evaluation of health systems, ranging from the design of ways to pay

providers or to improve access to care for households, to the definition of essential packages for insurance, to decisions about whether or not to include new medicines on hospital, state or national formularies (Drummond M. et.al. 1997). The importance and need for equitable access to healthcare is very crucial to achieve the millennium development goals made by the WHO. (Vandemoortele, Milo. 2010).

Increased attention on cost and efficiency are prompted by scarcity of funds relative to health needs and demands which are driven by factors such as pandemics related to HIV, ageing people. There is development of expensive and innovative technologies and a heightened awareness and knowledge with higher expectations of healthcare consumers. These forces of supply and demand on healthcare market has given rise to need for sophisticated quantitative analysis, modeling and econometric modeling on the impact of ill health on wealth and vice versa which assess the technical efficiency of health interventions is considered (Gravelle H. et.al. 2003; Bhargava A. et.al. 2001; Weinstein MC. 2006).

3.3 Health Inequity

Health Equity refers to a study of all the causative factors for the difference of health quality across various populations. If there's a lower life expectancy due to the lack of accessibility to medicines then its health inequity. These inequities may include differences in health outcomes, presence of diseases, access to healthcare between populations with a different ethnicity, race, socio economic status and sexual orientation.

Health equity can be classified into two categories such as horizontal equity and vertical equity. Horizontal equity means theres a equal treatment of persons or groups of people in the same kind of circumstances whereas vertical equity means people who are unequal should be treated differently as per the level of need that arises. The need and

importance of equitable access to healthcare is cited as major crucial factor to achieve the millennium development goals of the world.

Equity is the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically. Health inequities therefore involve more than inequality with respect to health determinants, access to the resources needed to improve and maintain health or health outcomes. They also entail a failure to avoid or overcome inequalities that infringe on fairness and human rights norms.

Reducing health inequities is important because health is a fundamental human right and its progressive realization will eliminate inequalities that result from differences in health status (such as disease or disability) in the opportunity to enjoy life and pursue one's life plans.

A characteristic common to groups that experience health inequities—such as poor or marginalized persons, racial and ethnic minorities, and women—is lack of political, social or economic power. Thus, to be effective and sustainable, interventions that aim to redress inequities must typically go beyond remedying a particular health inequality and also help empower the group in question through systemic changes, such as law reform or changes in economic or social relationships.

3.4 Equity and development

Why do these persistent inequalities— both within and across countries—matter? The first reason is that the interconnections and resilience of these inequalities imply that some groups have consistently inferior opportunities—economic, social, and political—than their fellow citizens. Most people feel that such egregious disparities violate a sense of fairness, particularly when the individuals affected can do little about them. This is

consistent with the teachings of much political philosophy and with the international system of human rights. The core moral and ethical teachings of the world's leading religions include a concern for equity, although many have also been sources of inequities and historically have been linked to unequal power structures. There is also experimental evidence suggesting that many—but not all—people behave in ways consistent with a concern for fairness, in addition to caring about how they fare individually. Important as these intrinsic reasons are for caring about inequality of opportunities and unfair processes, the primary focus of this report is on the instrumental relationship between equity and development, with particular emphasis on two channels: the effects of unequal opportunities when markets are imperfect, and the consequences of inequity for the quality of institutions a society develops.

With imperfect markets, inequalities in power and wealth translate into unequal opportunities, leading to wasted productive potential and to an inefficient allocation of resources. Markets often work imperfectly in many countries, whether because of intrinsic failures—such as those associated with asymmetric information—or because of policy-imposed distortions. Microeconomic case studies suggest that an ineffi- cient allocation of resources across productive alternatives is often associated with differences in wealth or status. If capital markets worked perfectly, there would be no relation between investment and the distribution of wealth: anyone with a profitable investment opportunity would be able to either borrow money to finance it, or to sell equity in a firm set up to undertake it. But capital markets in just about every country (developed and developing) are very far from perfect: credit is rationed across prospective clients, and interest rates differ considerably across borrowers, and between lenders and borrowers, in ways that cannot be linked to default risk or other economic factors affecting expected returns to lenders. For example, interest rates decline with loan size in Kerala and Tamil Nadu in India, and across trading groups in Kenya and Zimbabwe, in ways not explained by risk differences.

In Mexico, returns to capital are much higher for the smallest informal sector firms than for larger ones. Land markets also have imperfections associated with a lack of clear titling, histories of concentrated land ownership, and imperfect rental markets. In Ghana, lower security of tenure among women leads to an inefficiently low frequency of land fallowing and, hence, to progressive declines in land productivity. The market for human capital is also imperfect, because parents make decisions on behalf of their children and because the expected returns to investment are influenced by location, contacts, and discrimination— on grounds of gender, caste, religion, or race. Discrimination and stereotyping— mechanisms for the reproduction of inequality between groups—have been found to lower the self-esteem, effort, and performance of individuals in the groups discriminated against. This reduces their potential for individual growth and their ability to contribute to the economy. Striking evidence of the impact of stereotyping on performance comes from a recent experiment in India. Children from different castes were asked to complete simple exercises, such as solving a maze, with real monetary incentives contingent on performance. The key result of the experiment is that low-caste children perform on par with high-caste children when their caste is not publicly announced by the experimenter but significantly worse when it is made public. If a similar inhibition of talent occurs in the real world, this implies a loss of potential output owing to social stereotyping. Economic and political inequalities are associated with impaired institutional development.

The second channel through which inequity affects long-run processes of development is the shaping of economic and political institutions. Institutions determine the incentives and constraints people face and provide the context in which markets function. Different sets of institutions are the outcome of complex historical processes that reflect the interests and structure of political influence of different individuals and groups in a society. From this perspective, market imperfections may arise not by accident but

because they distribute income or power in particular ways. In this view, there will be social conflict over the institutions of society and incentives for people who control power to shape institutions in ways that benefit them. The central argument here is that unequal power leads to the formation of institutions that perpetuate inequalities in power, status, and wealth.

Two areas stand out in reducing inequity and tackling economic distortions in the provision of health services. First, there are many cases when the benefits spill over beyond the direct beneficiary in a range of areas of service provision: for immunization, for water and sanitation, and for information on hygiene and child care. Public assurance of provisioning makes sense in these areas. Demand-side subsidies to provide incentives for maternal and child health increase use, offsetting possible information problems as in Mexico's Oportunidades program. Second, insurance markets for catastrophic health problems are beset with failures. (Here "catastrophic" is in relation to the capacity of the household to deal with the direct costs and the loss in earnings.) The traditional supply-side model of relying on public hospitals works badly, especially for poor and excluded groups. What can work better is public provisioning or regulation that provides some insurance for all. Examples include risk pooling in Colombia, health cards in Indonesia and Vietnam, and Thailand's "30-baht" universal coverage scheme. As with education, these interventions need to be combined with incentives for providers to be responsive to all groups.

It's not possible to have complete equality in health as there are many other factors that are beyond the influence of humans (WHO. 2014). One such factor is the genetic composition which can cause ill health and is beyond the control of humans. Because of it, if some die before the others it's not equality, But if someone's life expectancy is low because of the lack of medications, healthcare infrastructure, manpower and financing patterns then its healthcare inequity (Kawachi I., et.al. 2002). These inequities can

include differences in the presence of having the disease, health outcome or access to healthcare (Goldberg, J. et.al. 2004). Disparities in the quality of health across populations are well-documented globally in both developed and developing nations.

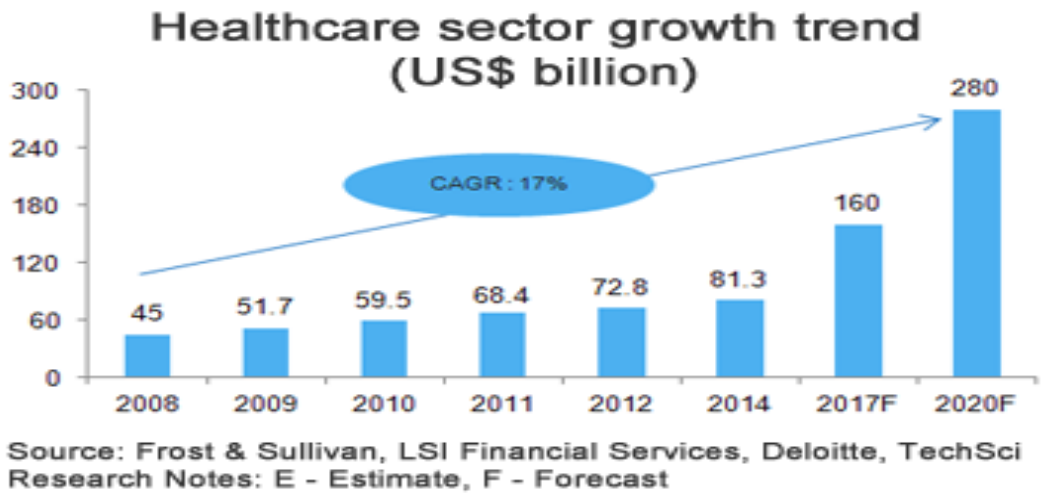
There's a profound social and economic inequality in healthcare. In an overpopulated country such as India with its complex social architecture and economic extremes there will be an effect on health system which is multifold. There's an unequal distribution of resources is a reflection of inequality and it adversely affects the rural population which is mostly poor. The socially underprivileged are not able to access healthcare due to geographical social and economic or gender related distances. The burgeoning private healthcare makes the gap between rich and poor more apparent for inequality.

3.5 Indian Healthcare System

The Indian healthcare system is divided into two areas of public and private healthcare. The public healthcare has very few tertiary and secondary care centers in few cities. The public healthcare envisages providing primary healthcare in rural areas through a three tiered system which can be categorized into Sub centers, Primary health centers (PHC) and Community Health Centers (CHC). The private sector is mostly concentrated to urban areas. India has an advantage of having a large pool of well trained medical workers. The medical care is much cheaper compared to other Asian and western nations. Sometimes the surgery may cost less than one-tenth the cost in other advanced countries.

As per Figure 1.1, India's healthcare sector is expected to be $280 billion in size by 2020, growing at a compound annual growth rate of 16 per cent, but it is in "dire need" of right policy framework and infrastructure push. (FICCI-KPMG report, 2007).

Figure 3.1: Growth of Indian Healthcare Sector



Source: Frost & Sullivan, LSI Financial Services, Deloitte, TechSci Research. http://www.india-opportunities.es/archivos/publicaciones/Healthcare-January-2016.pdf, Page 9.

Healthcare has become one of India's largest sectors both in terms of revenue and employment. The industry is growing at a tremendous pace owing to its strengthening coverage, services and increasing expenditure by public as well private players During 2008-20, the market is expected to record a CAGR of 16.5 per cent The total industry size is expected to touch USD160 billion by 2017 and USD280 billion by 2020.

India has a vast health care system, but there remain many differences in quality between rural and urban areas as well as between public and private health care. Despite this, India is a popular destination for medical tourists, given the relatively low costs and high quality of its private hospitals. Health care in India is a vast system and can be much like the rest of the country: full of complexity and paradoxes.

India's Ministry of Health was established with independence from Britain in 1947. The government has made health a priority in its series of five-year plans, each of which determines state spending priorities for the coming five years. The National Health Policy was endorsed by Parliament in 1983. The policy aimed at universal health care coverage by 2000, and the program was updated in 2002.

The health care system in India is primarily administered by the states. India's Constitution tasks each state with providing health care for its people. In order to address lack of medical coverage in rural areas, the national government launched the National Rural Health Mission in 2005. This mission focuses resources on rural areas and poor states which have weak health services in the hope of improving health care in India's poorest regions.

The health care system in India is universal. That being said, there is great discrepancy in the quality and coverage of medical treatment in India. Healthcare between states and rural and urban areas can be vastly different. Rural areas often suffer from physician shortages, and disparities between states mean that residents of the poorest states, like Bihar, often have less access to adequate healthcare than residents of relatively more affluent states. State governments provide healthcare services and health education, while the central government offers administrative and technical services.

Lack of adequate coverage by the health care system in India means that many Indians turn to private healthcare providers, although this is an option generally inaccessible to the poor. To help pay for healthcare costs, insurance is available, often provided by employers, but most Indians lack health insurance, and out-of-pocket costs make up a large portion of the spending on medical treatment in India.

On the other hand private hospitals in India offer world class quality health care at a fraction of the price of hospitals in developed countries. This aspect of health care in India makes it a popular destination for medical tourists. India also is a top destination for medical tourists seeking alternative treatments, such as ayurvedic medicine. India is also a popular destination for students of alternative medicine.

3.6 Structure of Rural Healthcare

As on 31 st March, 2016, there are 155069 Sub Centres, 25354 Primary Health Centres (PHCs) and 5510 Community Health Centres (CHCs) functioning in the country.

3.6.1 Sub Centers (SC's)

They are the first contact points between the primary healthcare system and the community at large. They are given charge of communicating and creating interpersonal relations with the community members to bring behavioral change. They envisage providing services relating to maternal, child health, immunization, family welfare services, nutrition, diarrhea control and controlling the communicable diseases.

Each sub center has to employ at least an ANM, One Female health worker and a male health worker. As per Annexure 1, view the Indian Public Health Standards recommended staffing structure. Under National Rural Health Mission (NRHM) the sub center can have an additional ANM on contract basis. A Lady Health Visitor (LHV) is tasked with supervising six sub centers. The salary for the ANM and LHV is borne by the central government and the salary of the Male Health Workers by the state government.

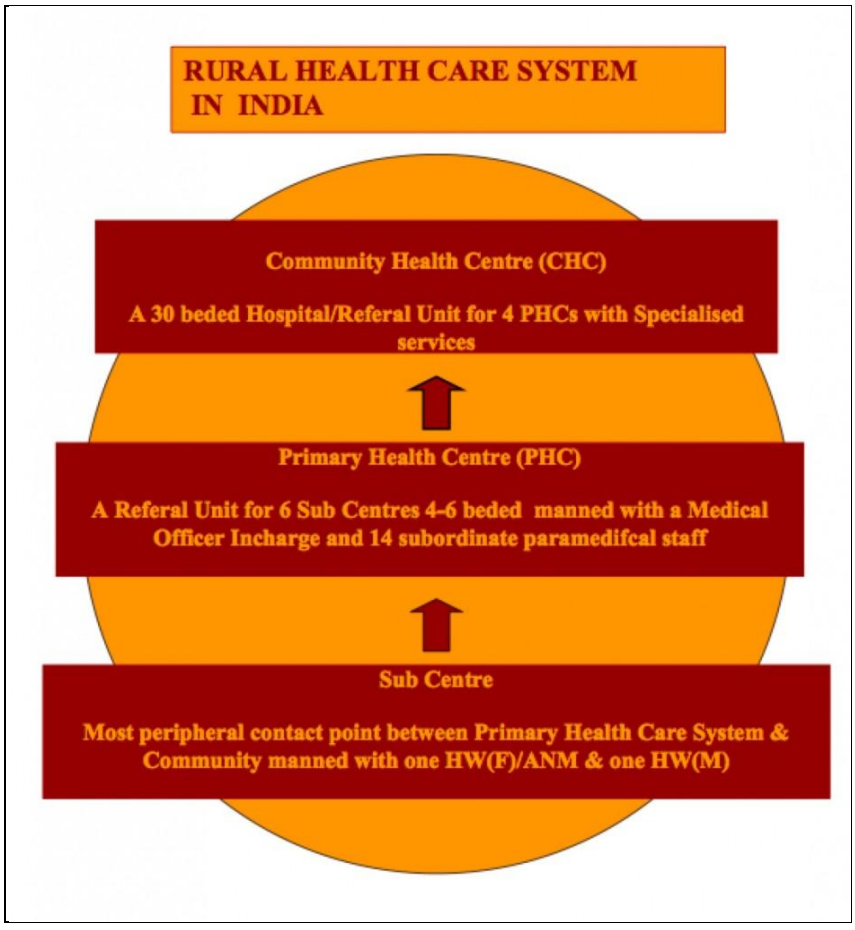
3.6.2 Primary Health Centers (PHC's)

The PHC's are the first point of contact between the medical officer (doctor) and the village community. They were established with the goal of providing integrated curative and preventive health care in the rural areas. The PHC's are maintained by the state governments under the minimum need program (MNP) and basic minimum services (BMS) program. The PHC is to be having a medical officer supported by 14 paramedical and other staff (Refer Annexure 1 for IPHS norms). Again under NRHM two additional staff nurses can be taken on contractual basis. A PHC acts as a referral unit for 6 sub centers. It has 4-6 beds for admitting patients. The PHC is involved in curative, promotive and family welfare services.

3.6.3 Community Health Centers (CHC)

The community health center is managed under the BMS and MNP programme. It needs to be manned by 4 medical specialists such as surgeon, physician, gynaecologist and paediatrician. They are supported by 21 paramedical and other staff (See Annexure 1 for IPHS norms). The CHC has 30 indoor beds with an operation theatre, labor room and a laboratory. The CHC is a referral center for 4 PHC's.

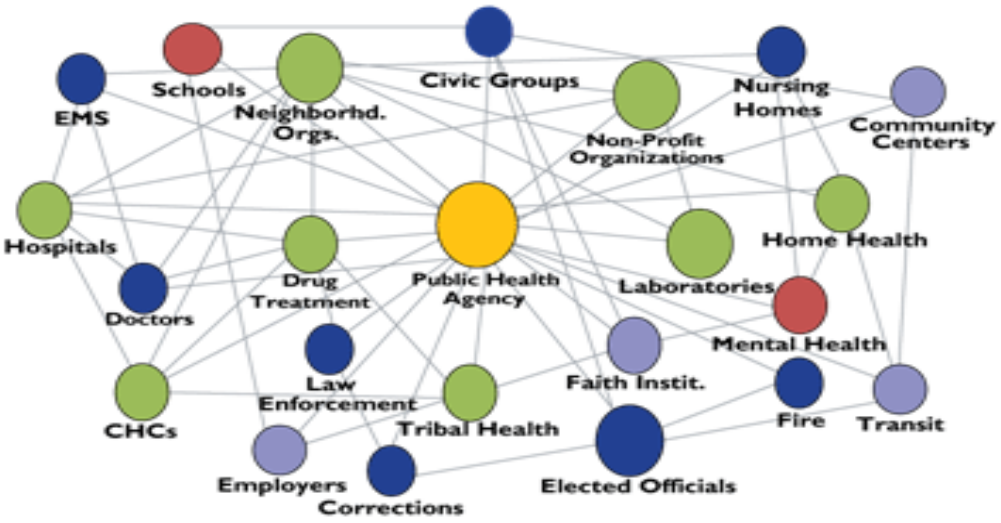
Figure 3.2: The Schematic Structure of Indian Public Healthcare System



3.7 The Role of Public sector in assuring Health.

The public sector units goal is to provide healthcare to all the public through government. They contribute to the delivery of essential services. All different entities such as in Figure 3.3 contributes to providing healthcare and well being of the community.

Figure 3.3: Components Contributing to Community Healthcare



The society must create and bring conditions conducive for the members of the community to be healthy and responsible for health. The responsibility for maintaining and improving health lies with all the different sectors of society. They are carried out through personal healthcare and public healthcare system. Personal healthcare is provided in the form of private healthcare with no emphasis on preventive services but only curative. The funding of this comes directly from out of pocket, insurance and through government.

To maintain the public health preventive healthcare activities are needed. By that they protect the entire rural population from illness, disease, injury and protection.

Public health is influenced by a range of factors which are outside the ambit of public health agencies. To achieve success in achieving good outcomes they need to engage continuously with a wide range of actors through advocacy, coordination and monitoring.

This includes building of:

The Intrasectoral coordination between different persons in the public health agencies. This is to ensure adequate flow of information and provides consistency in policy

- Coordination with governmental agencies who are primarily responsible for implementing public health regulations and handles environmental sanitation;
- Intersectoral coordination with other agencies whose area of work coincides on health outcomes such as school health, appropriate drainage and irrigation systems.
- Coordination with private sector especially with all doctors for disease surveillance and supplying standard care for diseases such as TB and STD's.
- Continuous partnership with community to build public demand for needed health outcomes, raise awareness of required need for monitoring local rural programs and look to alter personal health behaviors.

India which has a large geographical area with so many states warrant more control of state government agencies in delivering public health and little role is attributed to central government agencies. The central governments role is just to facilitate the overall functioning through stewardship, advocacy and support (Voluntary Health Association. 1997).

India is considered to be the third largest economy in terms of Gross National Income (in PPP terms). It has great potential to grow larger and more equitable. It has the potential to emerge as a developed nation. India possesses sophisticated arsenal of technologies and knowledge required to provide healthcare to all rural populations. Yet the gaps in healthcare utility keeps widening. There are many incidents of ill health, disease, premature death and suffering on a large scale in spite of availability of effective and affordable interventions for prevention and treatment. One of the reasons will be that the power of existing interventions are not matched to the power of health systems to deliver adequate comprehensive care to the ones in greatest need.

3.8 India's National Health Policy

The national health policy was formulated in 1983. Since then the determinant factors relating to health sector have been changing. Some policies and initiatives done in National Health plan – 1983 have yielded some significant results. Unfortunately in several other areas the outcomes are not as expected. The health policy was updated by the parliament of India in 2002 (Jugal Kishore, 2005). The national health policy is being worked upon further in 2017 and a draft for public consultation is released in 2015 (Ministry of health and Family Welfare, 2015).

The main objective of the health policy is to achieve a good acceptable standard f good health for the people of India. The main approach was to increase access to public healthcare by establishing new infrastructure in the deficient places and to upgrade the existing infrastructure. Prime importance was focused onto equitable access of heath care services to the total social and geographical expanse of the nation. Emphasis is given to increasing public health investment from the central government. With this initiative it's expected to strengthen the health delivery capacity of public health agencies at the state level.

The contribution of private sector will be much enhanced for the people who can afford to pay for these services. Greater thrust will be given to preventive and first line curative initiatives at the primary healthcare level by increased sectoral allocation. Focus will be made on rational use of drugs. Increased access to tried and tested traditional medicines will be provided.

The current national health policy agenda calls for greater importance to rural health delivery systems including the tribal areas which constitute 70 percent of the population which is deprived of advancements in health and disease management initiatives and programs.

3.9 Lack of Basic Healthcare

Access to healthcare is of great importance to the rural population. Ideally the rural public should be able to conveniently use the rural health care services. Access to this healthcare is important for:

- Total Physical, Mental and Social Health status
- Preventing diseases
- To detect and treat sickness
- Improving quality of life
- Prevent death
- Increase life expectancy

Rural public often experience barriers to health care thereby limiting their ability to get the requisite care which is needed. In order to provide requisite care, access to health care services is needed to get the necessary and appropriate services which must be available in a timely manner.

Some of the barriers are:

- Workforce Shortage
- Long Distance from the healthcare provider
- Lack of transportation services
- Limited hours and days of medical facility
- Lack of knowledge and practice of preventive medicine
- Many people usually do not qualify for different government schemes due to lack of government certified documentation.
- There's no faith on the existing rural healthcare infrastructure.

3.10 The Case of Rural Healthcare Service Delivery in India

Healthcare is the right for all the individuals but due to the lack of quality healthcare facilities, manpower and non access to basic medicines and medical infrastructure thwarts the reach to 60 percent of the population. A majority of 700 million who are living in the rural areas find themselves staying near deplorable medical facilities. Considering this grim picture There's a dire necessity of new practices and procedures which will ensure quality and timely health care will reach to the deprived corners of the great vibrant Indian villages.

The National Rural Health Mission brings out certain key facts relative to the current scenario of the rural healthcare system in India. They are:

- Ratio of rural population to doctors is six times lower than the urban areas of the country
- The ratio of the rural healthcare beds versus the population living in rural areas is 15 times lower than the urban areas.
- More than 31 percent of rural residents need to travel over 30 kms to acquire the requisite medical treatment.
- There are 3,660 PHC's which lack either a laboratory or operation theatres or both.
- There's 66 percent of rural population which lacks access to preventive medications.
- There's a startling 50 percent of the posts vacant for Gynaecologists & Obstetricians, Paediatricians and surgeons in the rural healthcare facilities.
- There are 39 percent of PHC's without a lab technician.
- There's a 70.2 percent of shortage of medical specialists in the CHC's
- In rural areas infectious disease dominate. There's a 40 percent morbidity due to infectious diseases as compared to 23.5 percent in urban areas.

Though the government brings about lot of policies and programs the success and effectiveness of these are questionable due to the gap in implementation of these programs. There's a limited PHC's in rural areas. India today faces severe shortage of manpower for health. The public health infrastructure continues to face shortage of 85 percent specialist doctors, 75 percent doctors, 80 percent lab technicians, 53 percentage of nursing staff shortage and 52 percent of ANM posts are vacant across the states of India (Nandan D. Agarwal 2012). Its found that 18 percent PHC's don't have even a pharmacist.

India accounts for the largest number of maternal deaths due to poor maternal health care in rural areas. In the urban areas private sector confines to only family planning and ante natal care and don't extend to more critical services such as labor and delivery whereby a good care can save a life from complications.

Due to the non accessibility and low quality of health care infrastructure a majority of rural population turns to local private healthcare as the first choice of acquiring healthcare. Its found that 92 percent of visits are to the private healthcare providers of which 70 percent are in the urban areas. However, it's a known fact that private health care is expensive and often unregulated with variable quality. Therefore its unaffordable to the rural residents who are from the low income bracket. A majority of them borrow money and still go the private sector for availing healthcare services.

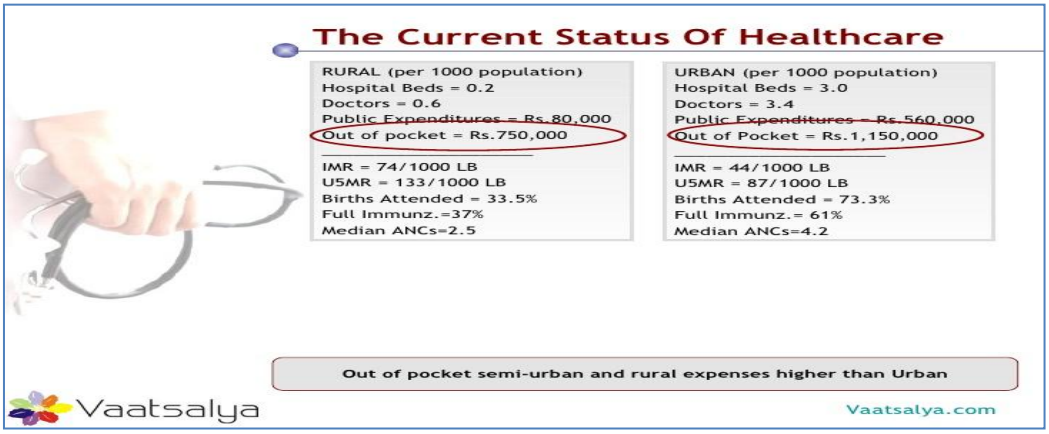
For ensuring a social well being the World Health Organization (WHO) recognizes health as a human right (Mann JM., Gostin L. et.al. 1994). There exists a correlation between economic growth and improvement in health indicators. However, such trend has not been seen in the Indian context despite a high economic growth rate of 7 percent even during the recent world economic slowdown. In order for capital to translate to into positive healthcare outcomes there's a need to be clear policy goals and healthcare

needs to be given priority in the budget. Less than 1 percent of Gross Domestic Product (GDP) is allocated for healthcare which is grossly inadequate. (The Planning Commission of India. 2011). Therefore the fundamental reason for poor functioning of Indian rural health system and ill health indicators is the low level of investment in rural healthcare. Due to this scenario India is saddled with high burden of preventable diseases that traps households into poverty. Public health financing is pivotal for providing financial entitlement in terms of purchase of healthcare services so that out of pocket expenses are taken care of. There's a need for creating better infrastructure, increasing the manpower, providing adequate essential drugs free of cost and an increased financial outlay for healthcare in the budget. In India the public spending on health is around 1.2 percent of the GDP which is among the lowest around the world.

Health makes an important contribution for the nation's economic progress by the healthy population living longer and becoming more productive and purportedly save more. This has a huge human and economic cost for India as it's losing more than 6 percent of GDP annually due to premature deaths and preventable sicknesses (World Health Organization. 2013). India encapsulates a paradox where there's relatively unimpressive healthcare performance and its inability to deliver affordable health services to its 1.2 billion people coexists alongside the biggest generic drugs industry that exports affordable medicines to more than 100 countries. It has earned India the sobriquet of "Pharmacy of the World". India also has a booming private medical sector and thriving medical tourism.

With public health infrastructure crumbling and not able to foresee a clear solution on the horizon for improving the accessibility and affordability of Indian healthcare desperately needs reform. This need presents a major opportunity for innovative models of providing healthcare to the rural areas.

Figure 3.4: Current Status of Indian Healthcare



As per the above figure we can see the clear rural urban disparities. The health indicators also differ significantly and the out of pocket expenses are higher in semi urban and rural areas as compared to the urban areas. For controlling the spread of diseases and to reduce the growing rates of mortality due to lack of infrastructure there needs to be a special attention given to rural healthcare. India's key challenge in healthcare sector is inadequate physical infrastructure & manpower, low financing of public healthcare, low quality care, poor accountability, lack of awareness on preventive healthcare aspects and limited access to healthcare facilities.

3.11 India at a Glance

Table 3.1: India at a Glance

Area	3,287,240 Sq km		
	1991	2001	2011
Administrative Divisions			
No. of States/UTs	32	35	35
No. of Districts	466	593	640
Population (Million)			
Persons	838.58	1028.74	1210.57
Males	435.21 (51.90%)	532.20 (51.74%)	623.12 (51.47%)
Females	403.37 (48.10%)	496.50 (48.25%)	587.48 (48.53%)
Rural	622.81 (74.27%)	742.49 (72.18%)	833.46 (68.86%)
Urban	215.77 (25.73%)	286.00 (27.82%)	377.11 (31.14%)
Decadal Population Growth	23.87% (1981-1991)	21.54% (1991-2001)	17.70% (2001-2011)
Population Density (Persons/Sq Km)	267	325	382

Sex Ratio			
India	927	933	943
Rural	939	946	949
Urban	894	900	929
Child Sex Ratio (0-6 years)			
India	945	927	919
Rural	948	934	923
Urban	935	906	905
Literacy Rate			
India	52.21%	64.83%	73.00%
Males	64.13%	75.26%	80.90%
Females	39.29%	53.67%	64.60%
Rural	44.69%	58.70%	67.80%
Urban	73.08%	79.90%	84.10%

Source: The Planning Commission of India (2011)

3.12 Progress on Health Indicators

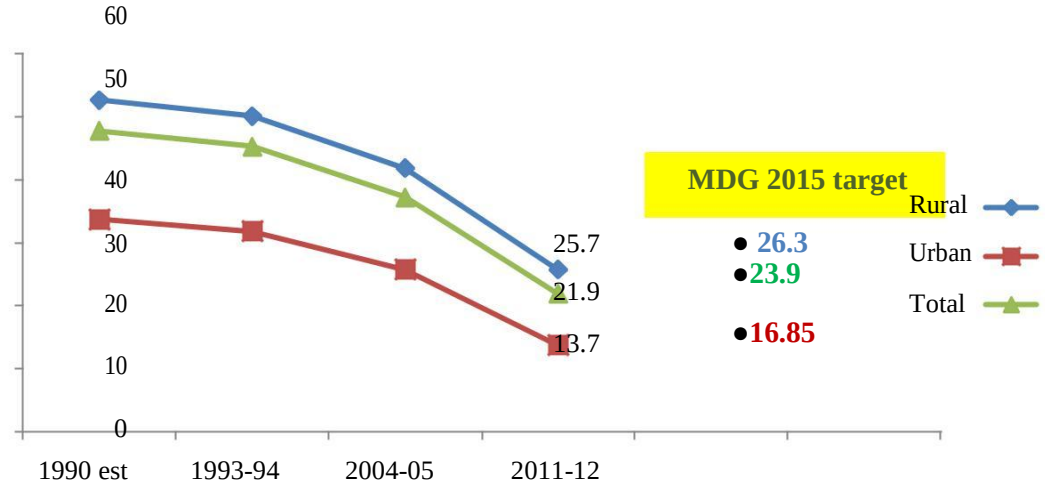
Fourteen years have passed since the UN Millennium Declaration enunciated a bold vision and established concrete targets by placing before the World the Millennium Development Goals, which are aimed at saving and improving the lives of many around the globe. In India, there has been considerable emphasis on all the MDGs and the nation has witnessed significant progress towards the MDGs, with some targets already having been met well ahead of the 2015 deadline. The Millennium Development Goals (MDGs) have helped in bringing out a much needed focus and pressure on basic development issues, which in turn led the governments at national and sub national levels to do better planning and implement more intensive policies and programmes. The MDGs originated from the Millennium Declaration adopted by the General Assembly of the United Nations in September 2000. The MDGs consists of eight goals, and these eight goals address myriad development issues.

People living in poverty are often socially excluded and marginalized. Their right to effectively participate in public affairs is frequently ignored and thus elimination of poverty is much more than a humanitarian issue, as it is more of a human rights issue. Thus, eradication of poverty and hunger being the basis of all development process, the

Millennium Development Goals have given foremost priority to it and the first Goal among the 8 Developmental Goals is on targeting elimination of extreme poverty and hunger.

- **Proportion of Population below the national poverty line (PHCR) has been declined both in rural and urban areas**

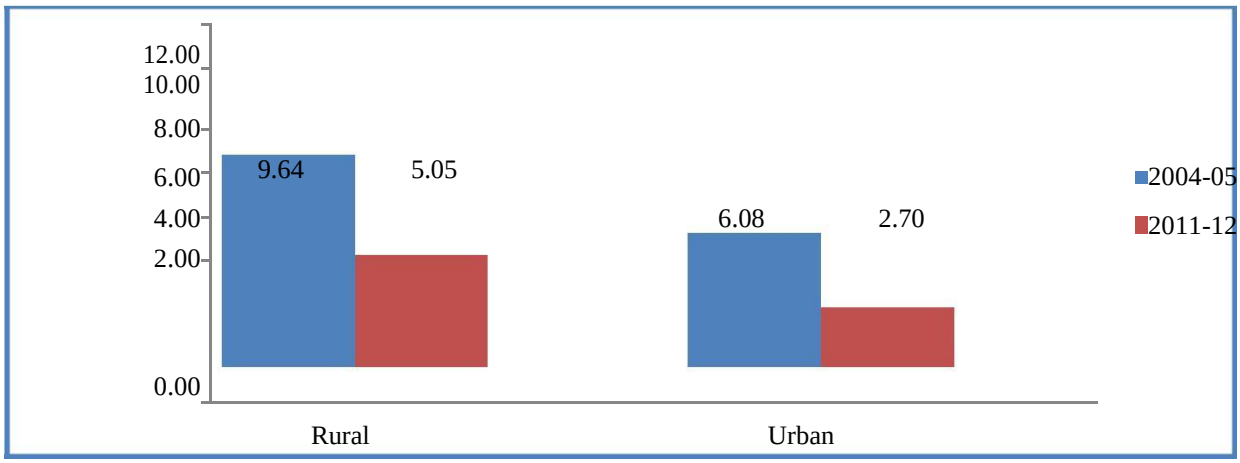
Figure 3.5 Trend in Poverty Head Count Ratio (%) -India



Source: NITI Aayog (erstwhile Planning Commission using Tendulkar methodology[2])

- **A decreasing trend has been observed in the depth of poverty (Poverty Gap Ratio is the gap by which mean consumption of the poor below poverty line falls short of the poverty line) in rural as well as urban areas during 2004-12**

Figure 3.6 Trend in Poverty Gap Ratio - India



Source: NITI Aayog (erstwhile Planning Commission using MRP method)

[1] *Percentage of Population below the National Poverty Line is considered for India for statistical tracking*

[2] 1990 estimate derived using MDG monitoring methodology

- **Slow progress in reducing the proportion of underweight children below 3 years**

Table 3.2 : Trends in nutritional status of children below 3 years

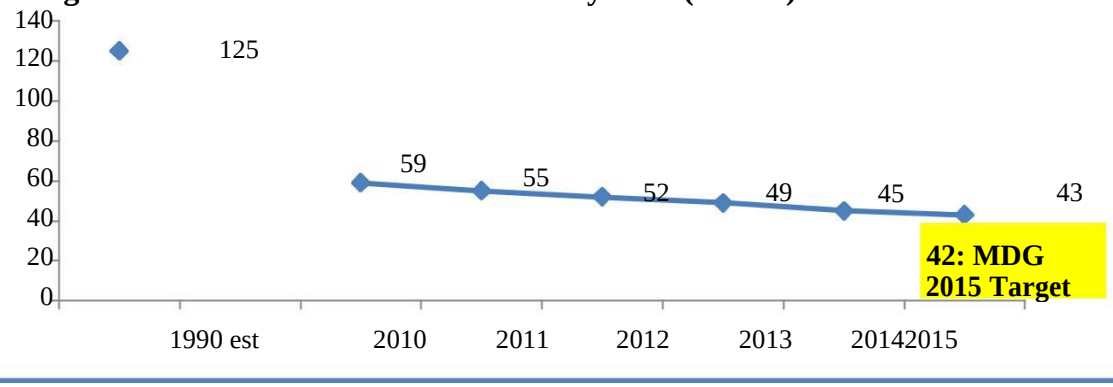
		NFHS -2 (1998-99)			NFHS-3 (2005-06)			NFHS -4 (2015-16)
		Urban	**Rural**	**Total**	**Urban**	**Rural**	**Total**	**Total**
Children	Stunted	41.1	54.0	51.0	37.4	47.2	44.9	36.1
(Height for age) %								
Children	Wasted	16.3	20.7	19.7	19.0	24.1	22.9	23.4
(Weight for height) %								
Children	***Underweight***	***34.1***	***45.3***	***42.7***	***30.1***	***43.7***	***40.4***	***33.7***
(Weight for age)%								

Source: National Family Health Survey -4, M/o Health & Family Welfare

Children are the most valuable assets for every country. A child's life is highly vulnerable to various diseases and substantial numbers of children lose their lives every day all around the world. In many cases, the child mortality happens due to causes which are preventable with adequate attention and care.

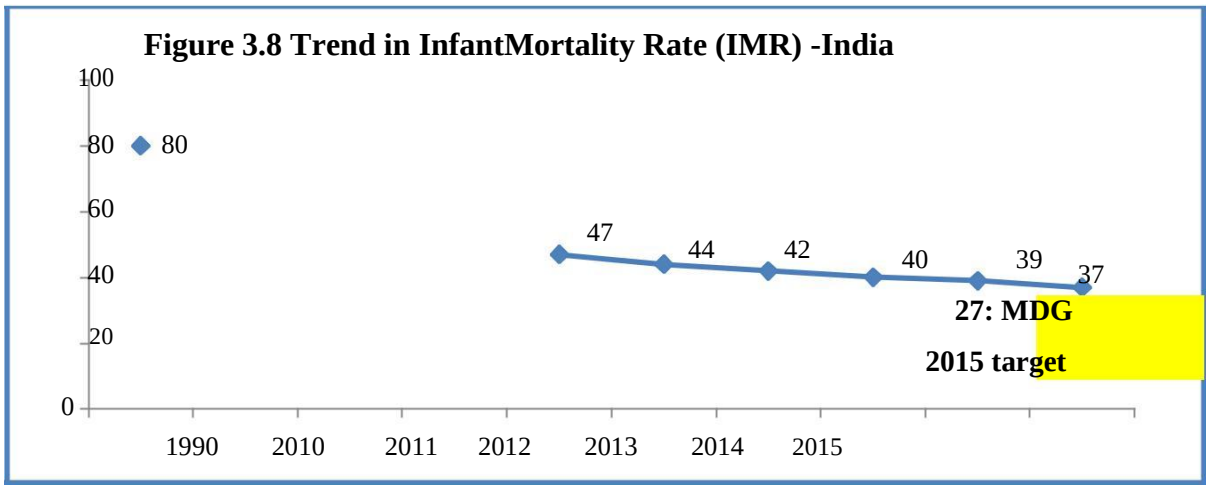
- **Under Five Mortality has reduced significantly during 1990-2015 and the status in 2015 is very near to the Millennium Development Goal (MDG) target.**

Figure 3.7 Trend in Under Five Mortality Rate (U5MR) - India



Source: Sample Registration System, Office of Registrar General of India

- **Though, Infant Mortality showed significant decline during 1990-2015, it is still lagging behind the MDG target.**



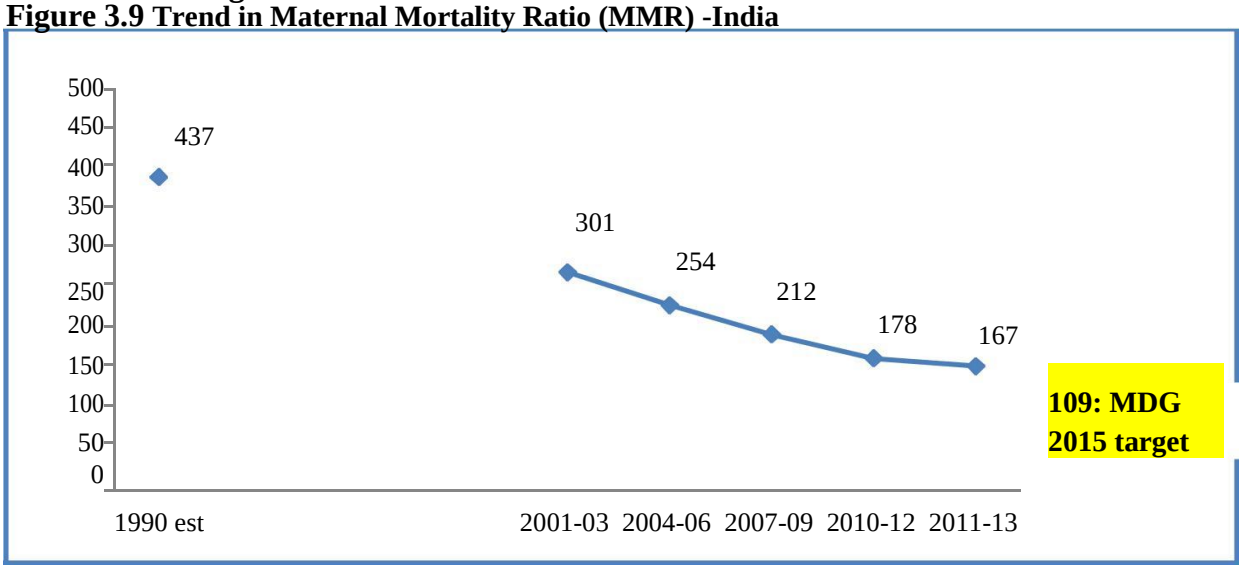
Source: Sample Registration System, Office of Registrar General of India

- **The proportion of one-year old (12-23 months) children immunised against measles** is at 81.1.1% in 2015-16 (NFHS-4).

The importance of maternal health in the overall development and wellbeing of the society cannot be over emphasized. The crucial importance of maternal health was underscored by the 5th goal of the United Nations Millennium Development Goals which is aiming at improving maternal health.

- **During 1990-2013, considerable progress has achieved in reducing maternal mortality ratio, but the status during 2011-13 is far behind the MDG target.**

Figure 3.9 Trend in Maternal Mortality Ratio (MMR) -India



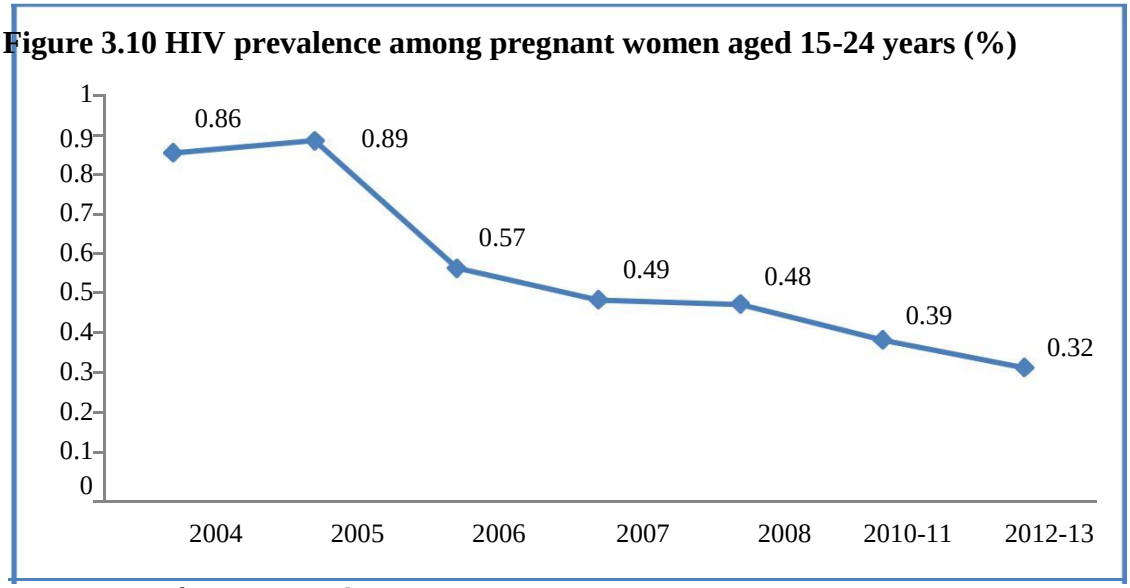
Source: Sample Registration System, Office of Registrar General of India

The percentage of births attended by a doctor/nurse/LHV/ANM/ other health personnel in 2015-16 is 81.4% (NFHS-4).

The diseases like HIV/AIDS together with Malaria and TB are causing major health challenges to population around the World. In order to face this challenge, the Goal 6 of the Millennium Development Goals, is committed to fight the deadly diseases of HIV/ AIDs, Malaria and TB.

- **Trend reversal in prevalence of HIV/AIDS among pregnant women has achieved and the declining trend is continuing.**

Figure 3.10 HIV prevalence among pregnant women aged 15-24 years (%)



Source: Department of AIDS Control

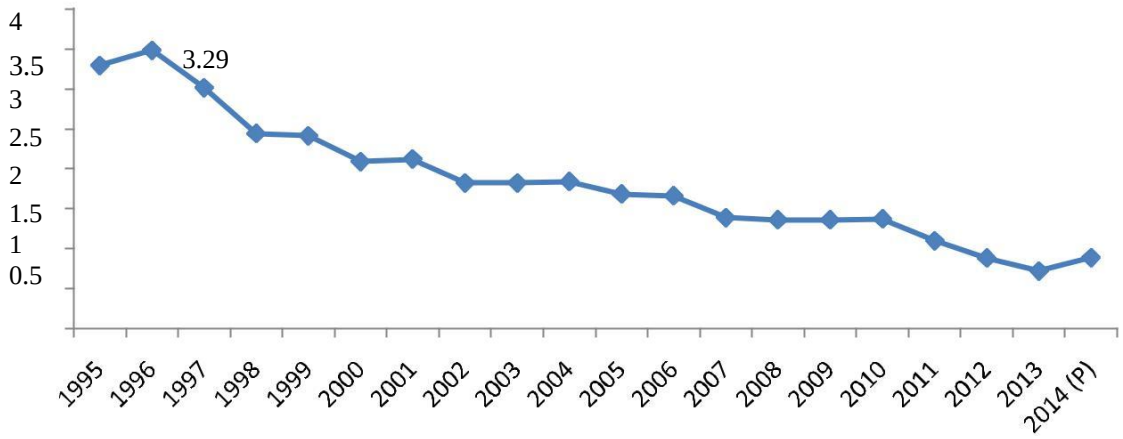
Table 3.4

Indicator	Latest Status
Condom use rate of the contraceptive prevalence rate (Condom use to overall contraceptive use among currently married women, 15-49 yrs, percent)	5.6 (2015-16)
Percentage of Population aged 15-49 years with comprehensive correct knowledge of HIV/AIDS	20.9 (Women) 32.3 (Men) (2015-16)

(Source: NFHS -4)

- **There is an overall declining trend in Malaria API with fluctuations in between.**

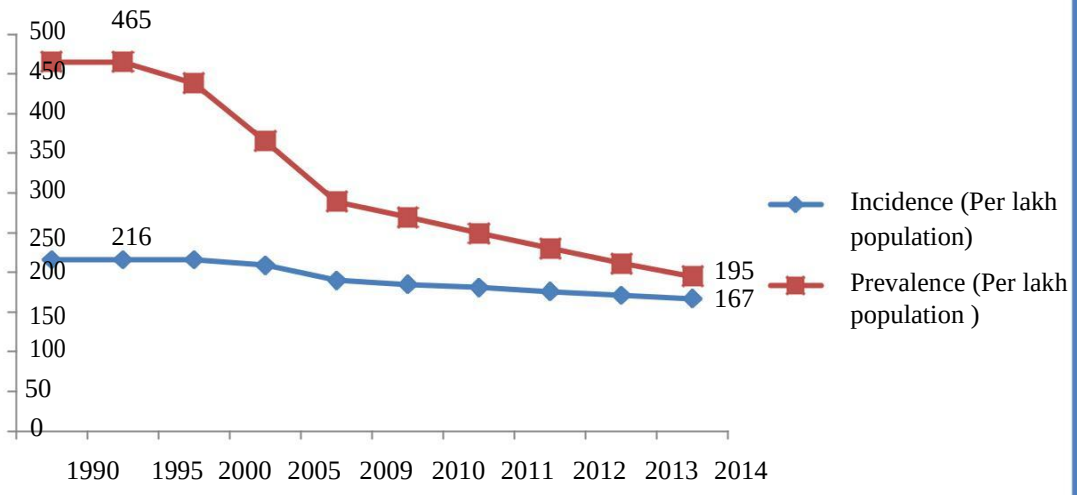
Figure 3.11 Trend in Malaria Annual Parasite Incidence - India



Source: Directorate of National Vector Borne Disease Control Programme

- Trend reversal has been achieved in incidence and prevalence of TB in India and the declining trend is continuing.

Figure 3.12 Tuberculosis situation in India



The above figures show a progress in all healthcare parameters as per the millennium development goals. The status emerging from these figures gives us confidence that our country is marching in the right directions and the measures being taken are resulting in real and positive changes in the lives of people in India. These statistics identifies the

areas where the progress made by India is less than that at the desired levels. Therefore, more focused attention needs to be given in those areas. It should generate useful deliberation amongst policy makers, academicians, intellectuals, and people at large to bring healthcare to the rural masses.

CHAPTER – 4

HEALTHCARE PROFILE OF GUJARAT AND SURAT DISTRICT

4.1 Gujarat Profile

Gujarat state is located on the western part of Indian Sub Continent and has a total area of 1,96,924 Sq. Kms. The state has come into existence in the year 1960. Gujarat state has 26 districts, 225 talukas and 18,066 villages. There are 242 towns 8 municipal corporations. From the beginning the state has witnessed significant growth in terms of economy. It has taken a structural change in its economy with a high degree of industrialization and fast urbanization.

4.1.1 Demographic Profile of Gujarat State

Table 4.1: Gujarat: Demographic Trend

Factor		Gujarat		India	
		2001	**2011**	**2001**	**2011**
Population (Lakhs)		506	603	10,287	12,101
Urbanization (%)		37.35	42.58	27.81	31.20
Sex Ratio	Total	920	918	933	940
	Children below 7 Yrs of Age	883	886	934	944
Crude Birth Rate in %		24.9	22.3	24.1	22.3
Crude Death Rate in %		6.9	6.9	7.5	7.3
Annual growth in Population in %		2.06	1.77	1.97	1.64
Total Fertility Rate		2.8 (2004)	2.5 (2009)	2.9 (2004)	2.6 (2009)
Literacy rate, %	Men	79.36	87.23	75.26	82.14
	Women	57.80		53.67	65.26
	Overall	69.14	70.73	64.84	74.04

Census of India and Sample Registration

The population of Gujarat state has increased from 506 lakhs to 603 lakhs in the year 2011 (Refer Table 4.1) An analysis of the growth in the state shows a significant drop in annual growth rate which is 2.06 percent in 1991 -2001 to 1.77 percent in 2001-2011. The annual growth is much higher than the country because crude birth rate (CBR) is same as the country but the crude death rate (CDR) is lesser. Last decade CBR has declined than that of the country as a whole whereas the CDR has remained static. This particular CBR and CDR has declined is due to very good continuous efforts to improve the health services and the overall improvement of the socio-economic condition of people.

A recent study (Suryanarayana, Agrawal, & Prabu, 2011[12]) has come up with the HDIs for Indian states calculated using the same methodology of the HDR 2010. These values can be became comparable to other countries HDI values in the Human development report 2010. Gujarat has stood 6th in terms of overall Inequality adjusted human development index (IHDI) (Refer Table 4.2). However, IHDI calculated by dropping the health index (IHDIie) reduces the rank to 8th. This drives a point of a positive contribution of health index in Gujarat.

Table 4.2: Inequality Adjusted Human Development Index (IHDI) for States of India Comparable to the International HDI in											
State	**Income(i)**	**Education(e)**	**Health(h)**	**IHDI**	**Rank**	**IHDI(ie) Health dropped**	**Rank**	**IHDI(eh) Income dropped**	**Rank**	**IHDI(ih) Education dropped**	**Rank**
Andhra Pradesh	0.397	0.192	0.479	0.332	11	0.276	11	0.303	11	0.436	9
Assam	0.404	0.258	0.379	0.341	10	0.323	7	0.313	10	0.391	12
Bihar	0.364	0.187	0.411	0.303	15	0.261	17	0.277	13	0.387	13
Chhattisgarh	0.356	0.202	0.343	0.291	17	0.268	14	0.263	17	0.349	18
Gujarat	**0.41**	**0.24**	**0.47**	**0.36**	**6**	**0.31**	**8**	**0.3**	**7**	**0.443**	**6**
Haryana	0.445	0.244	0.485	0.375	5	0.33	5	0.344	5	0.465	5
Jharkhand	0.363	0.196	0.411	0.308	12	0.267	15	0.284	12	0.386	14
Karnataka	0.387	0.226	0.503	0.353	8	0.296	10	0.337	8	0.441	8
Kerala	0.449	0.41	0.764	0.52	1	0.429	1	0.56	1	0.586	1
Madhya Pradesh	0.366	0.194	0.343	0.29	18	0.266	16	0.258	18	0.354	17
Maharashtra	0.398	0.279	0.562	0.397	3	0.333	4	0.396	2	0.473	3
Orissa	0.341	0.199	0.38	0.296	16	0.26	18	0.275	14	0.36	16
Punjab	0.455	0.265	0.572	0.41	2	0.347	2	0.389	4	0.51	2
Rajasthan	0.409	0.179	0.4	0.308	13	0.271	13	0.268	16	0.404	10
Tamil Nadu	0.405	0.278	0.55	0.396	4	0.336	3	0.391	3	0.472	4
Uttar Pradesh	0.384	0.195	0.384	0.307	14	0.274	12	0.274	15	0.384	15
Uttaranchal	0.417	0.256	0.384	0.345	9	0.327	6	0.314	9	0.4	11
West Bengal	0.396	0.238	0.494	0.36	7	0.307	9	0.343	6	0.442	7
India	**0.38**	**0.22**	**0.45**	**0.34**		**0.29**		**0.32**		**0.419**	
Source: (Suryanarayana, et.al., 2011[104])											

4.1.2 The health profile of Gujarat State

Health has an effect on all sectors of economy and society leading to growth and development of these areas. Its very important to understand the performance of this sector in the context of National Rural Health Mission.

The analysis of healthcare indicators shows a progressive improvement in the citizens health status (Table 4.3). The Life expectancy of females and males has increased. A decline in the CBR indicates attainment of 4th stage of demographic transition where both CBR and CDR decreases whereby society achieves stabilization in population.

Table 4.3: Gujarat: A glimpse at the Key Health Indicators 1999-2016

	India	**Gujarat**	**India**	**Gujarat**	**India**	**Gujarat**	
Life Expectancy at Birth	**1999-2003**		**2008**		**2016**		
Male	61.8	62.5	63.3	64.4	67.3	68.7	
Female	63.5	64.6	68.1	71	69.8	71	SRS
Sex Ratio, All	**2001**		**2011**		**2016**		
	933	920	940	918	944	918	Census
	2004-06		**2009**		**2011-13**		
Maternal Mortality	254	160	212	148	167	112	SRS
	2002-2004		**2007-2008**		**2013**		
Total Fertility Rate	2.9	2.8	2.6	2.5	2.3	2.3	CBHI
Infant Mortality Rate	58	54	47	44	40	36	SRS
Full ANC	16.4	25.8	18.8	19.9			DLHS
Institutional Delivery	40.5	52.2	47	56.4			DLHS
Full Immunization	45.8	54	53.5	54.8			DLHS
Contraceptive Use	53	52.9	54	63.3			DLHS

Source: Sample Registration System, District Level Health Survey & Central Bureau of health intelligence.

Sex ratio has seen minor improvement at the national level has fallen in the State. Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR) have improved both at state and national level. However, attaining the goal of less than 30 IMR and less than 100 MMR is a challenge. This appears to be a herculean task ahead . Among the other output factors

its observed that institutional delivery has significantly improved nationally but not that much in Gujarat. Similar trend is also observed in the total immunization too. In the use of contraceptives the Gujarat state outperforms the whole country.

4.1.3 The Healthcare Infrastructure of Gujarat State

It's been observed that the primary health care infrastructure has remained stagnant in Gujarat in spite of NRHM from 2004 to 2009. The state got better in the coverage of health centers in average number of villages. There are new CHC's that got started in this period. It can be pointed that there's good healthcare infrastructure in Gujarat before the NRHM was launched (Table 4.4)

Table 4.4: Health Care Infrastructure in Gujarat

Indicator	2004			2009			2015		
	India	Gujarat	Share	India	Gujarat	Share	India	Gujarat	Share
Sub Centers	14265	7274	5.10%	145894	7274	4.99%	153655	8063	5.25%
PHC	23109	1070	4.63%	23391	1084	4.63%	25308	1247	4.93%
CHC	3222	271	8.41%	4510	281	6.23%	5396	320	5.93%
Medical Colleges (Allopathic)	229	13	5.68%	289	14	4.84%	460	22	4.78%

Source: Central Bureau of Health Intelligence

When comparing the physical infrastructure in the rural areas having Sub Centers, PHC's and CHC's it's observed that its well above the national average indicating better reach of health. The number of medical colleges has increased in this period.

4.1.4 The Human Resources in Gujarat's Public Health System

The manpower available to work in rural healthcare areas of Gujarat has significantly improved between 2005–2010. The population served by a doctor has very well improved from 1401 to 1260 (Table 4.5). The availability of doctors has increased even when comparing the national figures. The availability of nurses has improved nationally

but not so in the state as it has declined from 444 to 469. The doctors who are available at PHC has improved and jhas also seen improvement in the number of specialists in CHC's. The number of healthcare work force has improved in the country even though the number of male health workers as declined during this period. It has been observed that in Gujarat the number of male health workers has increased whereas the number of female health workers has declined.

Table 4.5: Manpower in Health in Gujarat

Indicators	2004			2009		
	India	Gujarat	Share	India	Gujarat	Share
Number of Doctors	643964	37194	5.78%	793305	45058	5.68%
Population per doctor	1658	1401		1440	1260	
No of Nurses	865135	84796	9.80%	1073638	88258	8.22%
Population per Nurse	765	444		713	469	
Registered Midwives	521593	35935	6.89%	576542	36427	6.32%
Population per Midwives	2100	1506		2041	1606	
Doctors in PHC	21974	912	4.15%	23982	1019	4.25%
Specialists in CHC	3953	122	3.09%	5789	758	13.09%
Health Workers						
Male	60756	2389	3.93%	57439	4884	8.50%
Female	138906	6650	4.79%	190919	6431	3.37%

Source: Central Bureau of Health Intelligence

Table 4.5.1 VACANCY POSITION AT A GLANCE (Number of posts vacant against sanctioned)

		(As on 31st March, 2015)					
S. No	**State/UT**	**ANM [Sub Centres & PHCs]**	**Health Worker [M]**	**Health Assistant [F]/LHV**	**Health Assistant [M]**	**Medical Officers [PHC]**	**Specialists [CHC]**
1	Gujarat	336	1496	538	329	615	NA
2	Madhya Pradesh	*	3436	207	189	659	634
3	Maharashtra	1714	1163	591	102	72	245
4	Rajasthan	5705	546	1016	128	395	1040
5	**All India**	**20393**	**37840**	**9646**	**11030**	**9350**	**7945**

Source: Government of India, Ministry of Health and Family Welfare, Statistics Division Rural Health Statistics, 2014-2015

The emergence of NRHM has augmented the contractual manpower at all levels but still there's a dearth of human resources and especially in the tribal areas. The

recruitment is an ongoing process with walk in interviews. The government has a herculean task of filling these vacancies. As per IPHS norms there's a huge dearth of specialists and all cadres of manpower[13].

Table 4.6: The Human Resource Requirement in Gujarat

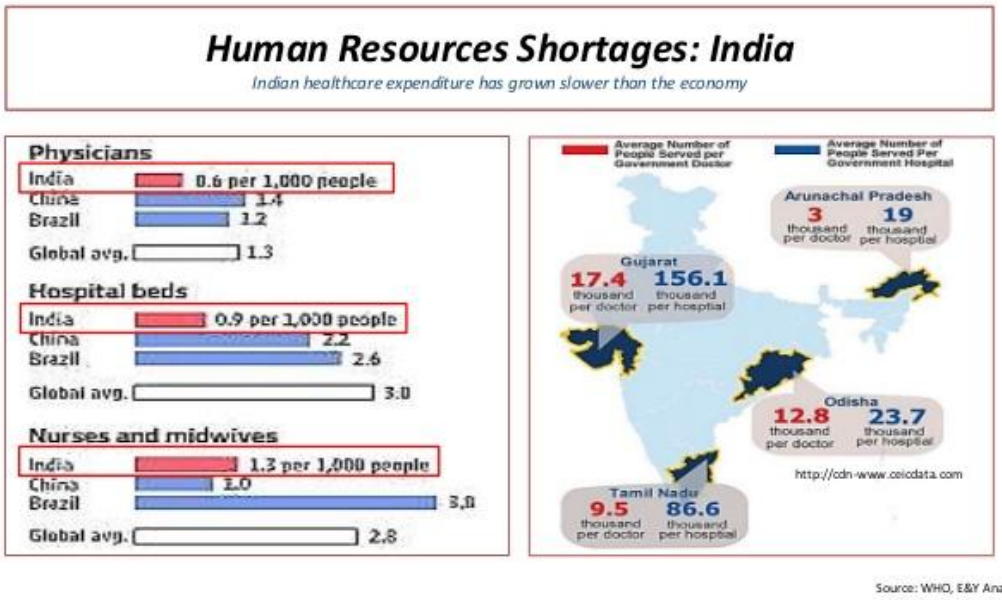
State Requirement for HR	Specialists	Doctors	Nurses	ANM	Pharmacist	Lab Tech
Required staff as per IPHS for the existing facilities	2037	3956	8072	14773	1978	1978
Sanctioned	1001	2029	3819	7274	1769	1532
In position	366	2274	3319	6445	1300	1051
Vacancy against sanctioned post	665	245	520	829	469	481
Vacancy against IPHS Norms	1910	1682	6072	8328	884	996
Vacancies already filled up by the state	76	1481	1778	6431	865	624
Proposed filling up of the vacancies by the state	0	0	0	0	0	0
Contractual engagements offer through NRHM	51	793	222	14	229	358
Additional contractual engagement proposed under NRHM for 2011-12	Depends on availability As per Need and Availability	As per need	719 As per need	NA	536 As per Need	351 As per Need

Source: Central Bureau of Health Intelligence

Table 4.7: Gujarat State Status of Health Personnel				
Category	**Required**	**Available**	**Shortfall**	**% Shortfall**
Sub-Centre	7263	7274	-	
PHC	1172	1073	99	8%
CHC	293	273	20	7%
MPHW Female at Subcenters & PHC	8347	7060	1287	15%
HW & MPW (Male) at Sub- Centres & PHC	7274	4456	2818	39%
Health Assistant (Female)/LHV at PHCs	1073	267	806	75%
Health Assistant (Male) at PHC	1073	2421	-	
Doctors at PHCs	1073	1019	54	5%
Obstetricians & Gynaecologists at CHCs	273	6	267	98%
Physicians at CHC	273	0	273	100%
Paediatricians at CHCs	273	6	267	98%
Total Specialist at CHCs	1092	81	1011	93%
Radiographers	273	124	149	55%
Pharmacist	1346	781	565	42%
Laboratory Technicians	1346	897	449	33%
Nurse/Midwife	2984	1585	1399	47%

Source: Central Bureau of Health Intelligence

Figure 4.1 Human Resources Shortage in India



An analysis of the manpower at sub center, PHC and CHC of Gujarat ascertains the requirement, availability and shortfalls of manpower. In the case of health workers and assistants the shortfall is 27 percent. In the case of medical officers or doctors in PHC is 5 percent. Huge vacancy is observed in specialist category posts at CHC. The vacancies for the paramedical staff are 39.2 percent and the nurses are a huge 47 percent.

4.1.5 Health Financing in Gujarat

In the planned outlay of the budget of Gujarat it has been observed that There's a significant increase from 3.95 percent in 2005 to 6.4 percent in 2010.. Non plan budget has reduced from 2.75 percent to 2.6 percent during the same period. On the whole the health sector allocation of finances has increased from 3.11 percent to 4.19 percent (Table 4.8).

Table 4.8: Gujarat State Health Finance Budget 2005-2010

		2005	2010
Plan outlay for health	Crores	434	1900
	%	3.95	6.40
Non Plan Outlay	Crores	720	1088
	%	2.75	2.6
Total	Crores	1155	2988
	%	3.11	4.19

Source: Vital Statistics, Gujarat

Table 4.9: Gujarat Health & Family Welfare Budget at a Glance 2013-2016

	2013-14 Actual Expenditure	2014-15 Budgeted Expenditure	2014-15 Revised Expenditure	2015-16 Budgeted Expenditure
	Rs. in crore			
State's Consolidated Fund (Total Budget)	105768.38	133465.61	127037.14	139139.35
Total exp for Health and Family Welfare Dept	5086.65	7123.96	7117.77	7781.08
% Health out of state's Consolidated Fund	4.24	4.71	4.98	5.00
% Health and Family Welfare out of state's Consolidated Fund	4.81	5.34	5.60	5.59
	Provisional	Quick	Advance	Estimates
GSDP of state (at current prices)	658540	765638	858189	961171
% allocation for Health and Family Welfare out state's GSDP	0.77	0.93	0.83	0.81

Source: https://counterview.org/2015/10/20/healthcare-gujarat-governments-low-budgetary-provisioning-has-resulted-in-high-out-of-pocket-expenditure-for-the-poor/

The Gujarat government's expenditure for providing health care and family welfare services is less than 1% of GSDP (Gross State Domestic Product), while the World Health Organization (WHO) recommends at least 3%. Gujarat's spending on health and family welfare is just 5% of its total budget. Thus, the state needs to enhance its health budget by three times to reach the ideal international norm.

Due to low budgetary provisions for healthcare, there is high Out-of-Pocket expenditure by families which hampers development of the family, they have to curtail nutrition, other consumption, perhaps withdraw children from schools and colleges. Girls are the first victims being denied education and nutrition[14].

When the Gujarat data is compared to some performing states it has been observed that they have relatively higher proportion of money spent on healthcare (Refer Table 4.9). It shows the proportion of total expenditure made on healthcare as proportion to total expenditure of three of performing states along with Gujarat state. It also shows proportion of health expenditure with respect to net state domestic product (NSDP). It has been observed that all performing states have high percentage of health expenditure on revenue account than actually in Gujarat state. Gujarat is better than or at par with states like Kerala and Tamil Nadu in terms of capital and total expenditure on healthcare. However Karnataka is way ahead in both these parameters.

Considering the national average Gujarat is relatively much better in terms of Capital and total expenditure but not in revenue expenditure. Gujarat needs to put in significant efforts in terms of public expenditure on health. The current levels of expenditure are not at par with states performing way better in health indicators. It provides greater challenge to Gujarat state for better outcomes to find its place in the top performing states of the Indian sub continent.

Table 4.10: Expenditure on Healthcare of selected states of India and Gujarat for year 2012-2013 (in %)

State	Health Expenditure as a Percentage of			
	Total Expenditure on			NSDP
	Capital	Revenue	Total Expenditure	
Gujarat	1.39	4.84	2.47	0.81
Karnataka	1.62	5.31	3.33	1.10
Kerala	0.13	7.47	2.58	1.10
Tamil Nadu	0.75	5.12	1.83	1.00
India	0.63	6.00	2.18	1.01
Source: (CSO - MoSPI, 2013) and (RBI, 2013)				

Source: https://counterview.org/2015/10/20/healthcare-gujarat-governments-low-budgetary-provisioning-has-resulted-in-high-out-of-pocket-expenditure-for-the-poor/

4.1.6 The Public Health Management by Gujarat State

Public healthcare in Gujarat is just like the national level with primary care provided by SC, PHC and CHC. It has secondary level 24 district and 26 sub district level hospitals. Tertiary care is through teaching hospitals and 14 medical colleges and specialized hospitals.

The state implements national health programs related to malaria, TB, Leprosy, Epidemic Control measures, HIV, Janani Suraksha Yojana and family welfare programs. The state runs Chiranjeevi, 108 emergency ambulances, Bal Sakha, Beti Bachao Abhiyan, Chiranjeevi Yojana, Mamta Abhiyaan, etc.

4.1.7 Performance Gap Index for Gujarat State

The performance Gap index (PGI) is calculated this way

PGI = [(Best Value – Gujarats Value) / (Best Value – Least Value)] * 100

The Table 4.10 shows that PGI for Gujarat. Expectancy of life at birth for males and females has a significant difference or gap of 44 and 41 percent in relation to the top

performing state. The performance gap in IMR is 63 percent, NN is 56 percent, U5MR is 59 percent are far more than the gaps of total fertility rate which is 36 percent. The birth and death rates which are 52 and 27 percent. For the MMR the gap is low thereby taking Gujarat almost to the level of top performer.

The performance gaps in terms of output and input indicators, manpower indicators are also studied. Its observed from the table that doctors are not willing to work in public healthcare. They are also not happy with prevention of doctors to undertake private practice (Mavlankar, Singh, Patel, Desai, & Singh, 2009[15]).

4.1.8 Trend of Health Performance in Gujarat

Table 4.11: Health Outcome, Output and Input Indicators for Gujarat and India						
Indicators	**Gujarat**	**India**	**Gujarat**	**India**	**Gujarat**	**India**
	1990-93		**1998-01**		**2008-10#**	
Outcome indicators						
Male Life expectancy	60.2	**59.7**	62.4	**61.6**	67.2	**65.8**
Female Life expectancy	62.0	**60.9**	64.4	**63.3**	71	**68.1**
Neo Natal Mortality(NN)	40.4	**47.2**	42	**44.0**	33.5	**39.0**
Infant Mortality Rates(IMR)	78.0	**77**	60	**66.0**	44	**47**
Under 5 Mortality	104	**109**	85.1	**94.9**	60	**69**
Maternal Mortality Rate(MMR)	-	**-**	202	**327**	148	**212**
Birth Rate	28.4	**29.6**	25	**25.4**	21.8	**22.1**
Death Rate	8.5	**9.8**	7.5	**8.5**	6.7	**7.2**
Total Fertility Rate	3.1	**3.6**	2.9	**3.2**	2.5	**2.6**
Output Indicators						
Undernourishment Related (Children Below three Years of Age)						
Stunted(too short for age)	48.2	**52**	43.6	**45.5**	42.0	**38.0**
Wasted (too thin for height)	18.9	**17.5**	16.2	**15.5**	17.0	**19.0**
Underweight (too thin for age)	50.1	**53.4**	45.1	**47**	47.4	**46.0**
Percentage children with birth weight < 2.5Kg.	-	**-**	**-**	**-**	22.0	**21.5**
Immunization Related (Percentage Children 13-23 Months Received)						
BCG	77.1	**62.2**	84.7	**71.6**	86.4	**78.1**
DPT	63.8	**51.7**	64.1	**55.1**	61.4	**55.3**
Polio	62.9	**53.4**	68.6	**62.8**	65.3	**78.2**
Measles	55.9	**42.2**	63.6	**50.7**	65.7	**58.8**
No Vaccinations	18.9	**30**	6.6	**14.4**	4.5	**5.1**
Percentage with vaccination card	32	**30.6**	31.8	**33.7**	36.4	**37.5**
All Vaccinations	49.8	**35.4**	53.0	**42.0**	45.2	**43.5**
Maternal Care						
Percentage pregnant women received ANC	75.4	**44**	86.4	**65.4**	87.4	**77**
Percentage of pregnancies with PNC	-	**-**	-	**-**	61.4	**41.2**
Percentage deliveries in Health facilities	35.6	**26**	46.3	**33.6**	52.7	**38.7**
Percentage deliveries assisted by Health Personnel	42.7	**34.2**	53.5	**42.3**	63.0	**46.6**
Input Indicators						
Infrastructure Related (Nos. per hundred thousand Population*)						
No. SCs@	26.84	**20.90**	22.95	**18.51**	20.98	**17.86**
No. PHCs@	3.36	**3.25**	3.16	**3.08**	3.13	**2.86**
No. CHCs@	0.59	**0.35**	0.76	**0.41**	0.81	**0.55**
Total Govt. Hospitals	-	-	0.62	**0.40**	0.60	**1.0**
No.of Beds on Govt. Hospitals	-	-	43.93	**38.76**	48	**44.6**
AYUSH Hospitals	0.13	**0.36**	0.12	**0.34**	0.1	**0.28**
Beds in AYUSH Hospitals	6.00	**7.16**	5.18	**5.93**	1.53	**1.8**
AYUSH Dispensaries	1.41	**2.72**	2.07	**2.30**	1.22	**2.0**
Manpower Related (Nos. per hundred thousand Population*)						
MPW@	16.0	**9.63**	11.44	**9.6**	12.9	**6.3**
ANM@	-	-	22.22	**18.1**	18.5	**25.0**
HA@	3.48	**2.73**	2.1	**2.7**	2.19	**1.97**
LHV@	3.58	**2.87**	2.7	**2.7**	2.52	**1.9**
Staff Nurse at PHC and CHC@	-	-	-	-	4.01	**3.86**
General Doctors at PHC@	3.25	**4.41**	2.99	**3.47**	2.94	**3.2**
Specialist Doctors at CHC@	-	-	3.43	**4.02**	0.22	**0.8**
Total Doctors (Allopathic)	52.2	**44.74**	66.5	**56.1**	76.91	**67.5**
Total AYUSH Doctors	-	-	78.9	**92.5**	57.69	**62.2**
Total Nurses	-	-	221	**18.1**	145	**86.2**
Notes:'*'–PopulationasperCensusofIndia1991,2001and2011;'@'–OnlyRuralPopulationisconsidered;'#'–DataonoutputindicatorsasperNFHS3(2005-06); '-':Data Unavailable						
Source:Table above,(IIPS,1995;2000),(Infrastructure-Indiastat,1990-93;1998-01),(Mapower-Indiastat,1990-93;1998-01)and(VitalStatistics-Indiastat,1990-93;1998-01).						

From the above two tables (Table 4.10) it can be inferred that even though Gujarat is not the best performer in these indices it is fairly placed at a very comfortable position which can very soon make it as the best performer in all the indices or at least a few. It has also been observed that the healthcare indices are improving gradually as the year's progress. If this rate continues Gujarat state can be a leader very soon in leading the other states to it.

The trends in health performance of Gujarat are also done as shown in the annexure 2. It provides trends for three periods: 1990-93, 1998-2001, and 2008-2010There's improvement in most of the indicators. Most of the health outcomes have remained better in all three time periods above the national averages. The input indicators unlike the output indicators are not satisfactory.

Improving the health care status of Gujarat will require lot of targeted efforts in areas such as improving immunization levels, reducing neonatal deaths, addressing malnourishment and building more healthcare infrastructure and also employing manpower. These attainments if fulfilled can take Gujarat state to a new level of performing states in regards to health also.

4.2 Profile of Surat District

4.2.1 History of Surat District

Surat district is located on the banks of Tapi River and is believed to be a daughter of the sun. It is believed that Surat district must have been under the Maurya dynasty at the time of Ashoka (B.C. 273-236) as Ashoka is not credited with any conquests in Western India and thus it is likely that the whole of the Surat district, along with other parts of Gujarat might have been conquered by Chandragupta Maurya. This is corroborated by the inscription of Rudradaman at Girnar. The Mauryan power which was established by

Chandragupta continued at least up to the death of Ashoka. The history after Ashoka period is confused and it is difficult to find out the successors of Maurya till the Muslims finally conquered Gujarat in 1299 A.D. During this period Parsis also settle at Sanjan who had left Persia and came to Diu and stayed there for nineteen years. They again landed near Sanjan in the latter part of the seventeenth century.

Surat which is the headquarters of Surat district is believed to be founded by a Nagar Brahmin known as Gopi, who also became the Prime Minister in the Sultanate of Gujarat under Mahmud I and Muzzffer II. During the reign of Sultan Mahmud III in the year 1546, castle of Surat was built to protect the city from the onslaught of the Portugese who had plundered it thrice before. Surat then was conquered by Emperor Akbar in 1573. During the reign of Mogul emperor's viz. Akbar, Jahangir and Shahjahan, the district and the city of Surat in particular enjoyed peace years.[16]

Surat which is considered to be one of the first cities of India during the rule of Shahjahan was later conquered twice by Shivaji during the reign of Aurangzeb. There was recession in prosperity of Surat during Maratha period but there was no formal power of Marathas on Surat. It also had its own mint and coins which were used in South Gujarat till 1688.

There was a tremendous increase in area, population, trade and prosperity of Surat during the rule of Mugal era. It was then principal international port of western India and ships use to go to Mecca from Surat. Englishmen also established their first office in Surat in 1613 A.D. Then came the Dutch, French and the Armenians.[16]

Governor Sorabkhan ultimately coined himself as the Nawab of Surat in 1725 and became independent. Surat then was ruled by independent Governors till the English captured the city. The Governors of Surat later were appointed by the English held to

some extent a position of nominal independence till 1800 when the whole administration was taken over by the English.[16]

It was considered as one of the greatest emporiums of trade in India during 1772, after which it had a time of decline in its fortunes as the headquarters was transferred to Bombay and thus its foreign trade was also transferred to Bombay by English. English had to face the opposition of the people thrice, when they tried to introduce in the district the duty on salt in 1884, Bengal Standard Weights and Measures in 1848 and income tax in 1860 and they again protested in 1878 when the Licence tax was introduced and a riot had eventually broken out on the occasion.

The district had formed a part of the Bombay Presidency and was administered as such till 1947. Major landmarks in the history of Surat District are the holdings of historic 23rd session of the Indian National Congress in 1907, the Bardoli Satyagraha of 1928 and the momentous Dandi March undertaken by Mahatma Gandhi in 1930. After the Independence, the territories of Dharampur and Bansada states and the Navsari region of the former Baroda State were amalgamated with it to form the Surat district of the Bombay State.In November 1956, the States were reorganized and the bigger bilingualState of Bombay was formed with Vidarbha, Marathawada, Saurashtra and Kachchh regions. The Surat district along with the other districts of Ahmadabad Division formed part of the bigger bilingual State. Lastly, the Bombay State was bifurcated on 1st May 1960 and separate States of Gujarat and Maharashtra were formed. Since that date, the Surat district became a part of the Gujarat State.[16]

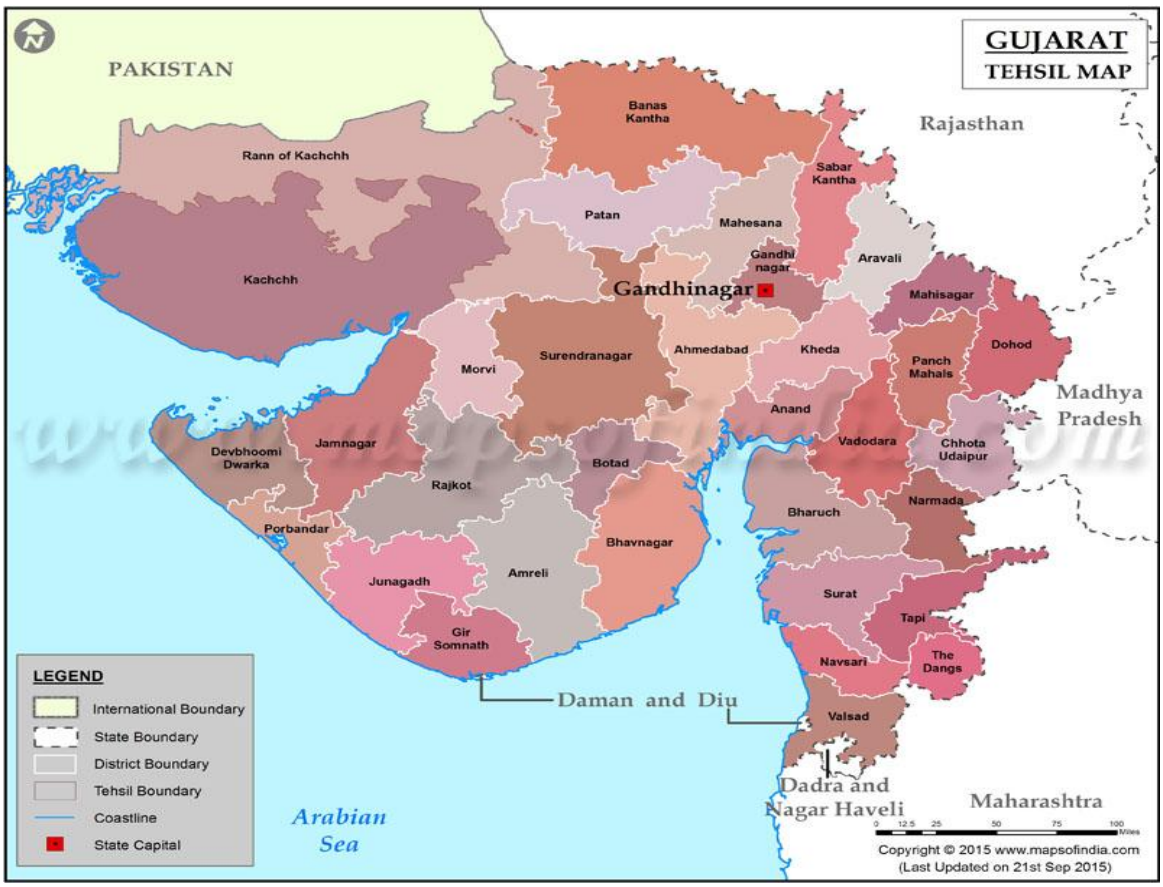
4.2.2 Profile of Surat

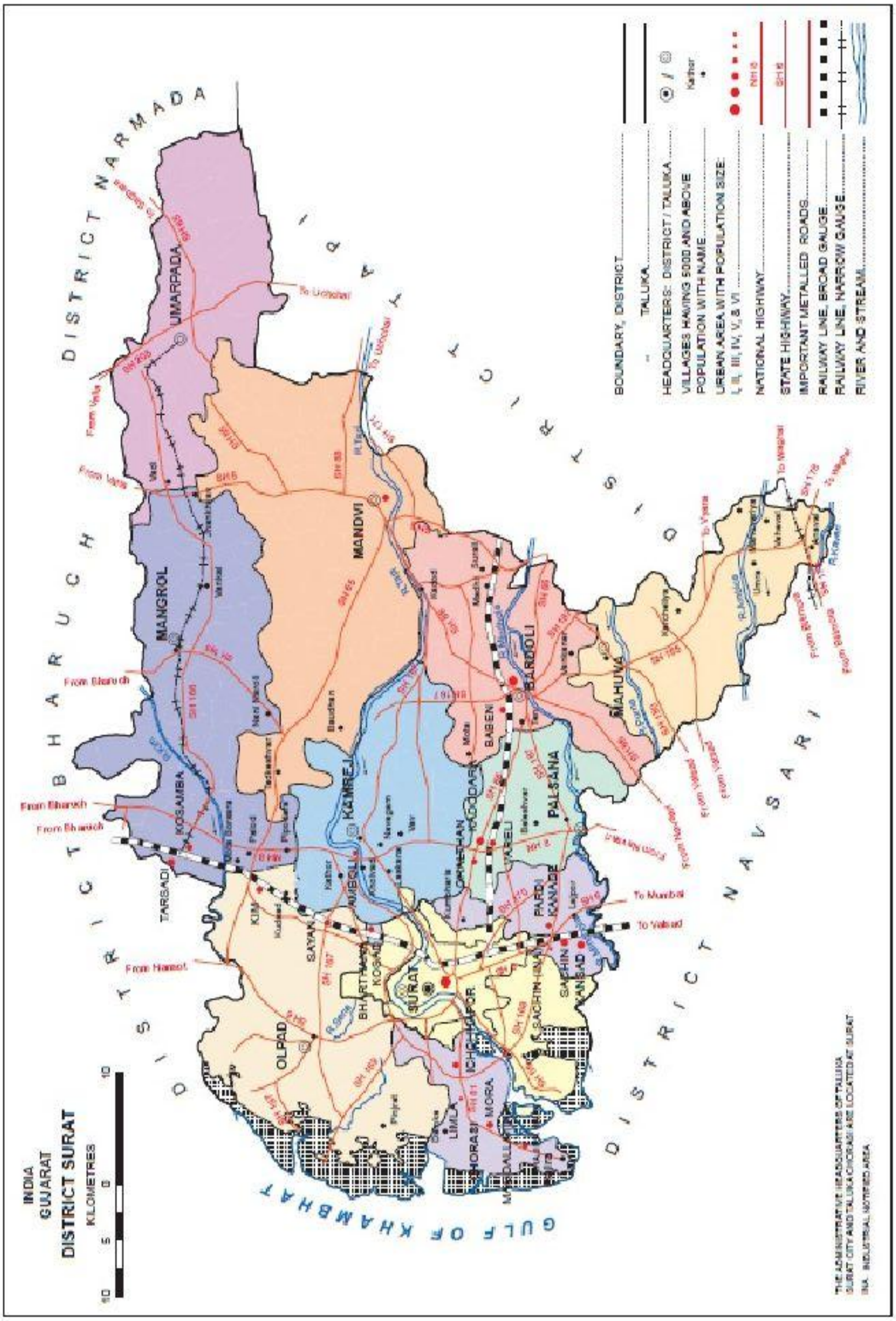
Surat district is located on the Southern part of Gujarat between 21“ to 21.23“ degree Northern latitude and 72.38“ to 74.23“ Eastern longitude flanked by the Arabian Sea on the west, newly created Tapi district to its East, Bharuch and Navsari districts in the

North and South respectively. Surat is the second largest commercial hub in the State and is the fourth fastest developing city of the world. It is considered to be an industrial hub of the country with flourishing business of diamond, textile, and petrochemicals and has encroached upon the agricultural lands of neighboring Taluka's.

The total geographical area of the district is 4549 km^2. For administrative convenience, the district is divided into ten revenue tehsils namely Choryasi, Palsana, Kamrej, Bardoli, Olpad, Mangrol, Mandvi, Mahuva, Umarpada and Surat city are the major developed tehsils in the district. There are mountain ranges in Mandvi. Tapi, Kim, Mindhola, Purna and Ambika rivers flow through various parts of Surat district. Tapi and Kim are perennial rivers.Agriculture is still the main source of livelihood for the rural people of the district. It is emerging as a potential hub for IT\TeS sector in Gujarat.

Figure 4.2 Map of Gujarat State and Surat District




INDIA
GUJARAT
DISTRICT SURAT
KILOMETRES
DISTRICT BHARUCH
DISTRICT NARMADA
DISTRICT NAVSARI
GULF OF KHAMBHAT
UMARPADA
MANGROL
MANDVI
KAMREJ
BARDOLI
MAHUVA
PALSANA
OLPAD
SURAT
CHORASI
BOUNDARY, DISTRICT
TALUKA
HEADQUARTERS: DISTRICT / TALUKA
VILLAGES HAVING 5000 AND ABOVE POPULATION WITH NAME
URBAN AREA WITH POPULATION SIZE: I, II, III, IV, V, & VI
NATIONAL HIGHWAY
STATE HIGHWAY
IMPORTANT METALLED ROADS
RAILWAY LINE, BROAD GAUGE
RAILWAY LINE, NARROW GAUGE
RIVER AND STREAM

4.2.3 Talukas

Surat is a district in the state of Gujarat with Surat city as the administrative headquarters of this district. It is the second-most advanced district of Gujarat. On 2 October 2007 Surat district was split into two by the creation of a new Tapi district, under the Surat District Re-organisation Act 2007. Presently, there are 10 sub districts (talukas) in the district including Surat city. The list of talukas covered under Surat District is as follows:

1. Choryasi
2. Palsana
3. Kamrej
4. Bardoli
5. Olpad
6. Mangrol
7. Mandvi
8. Surat City
9. Mahuva
10. Umarpada

Figure 4.3 Map of Talukas in Surat District

4.2.4 Population

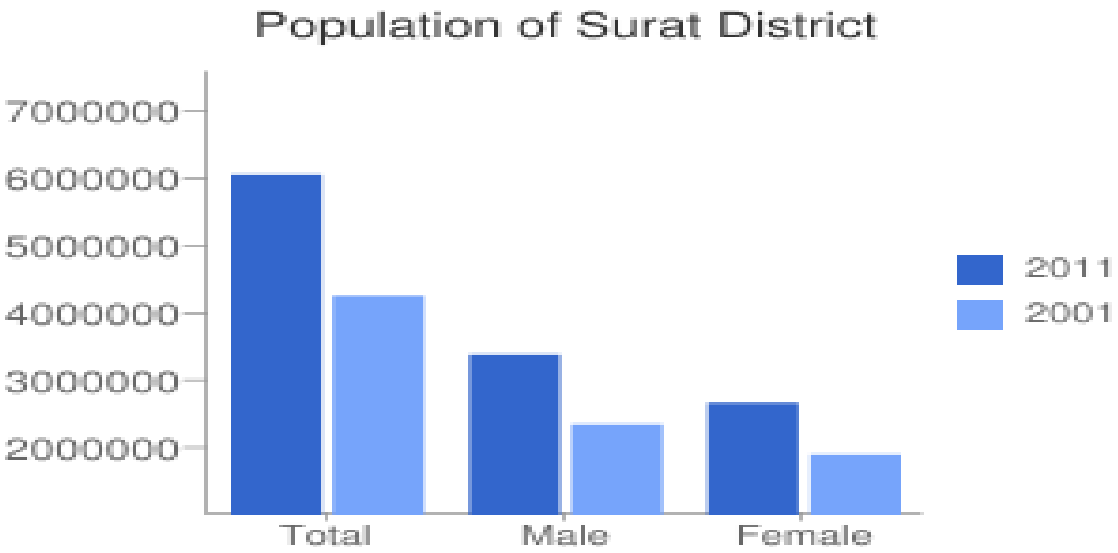
Surat district is the 2nd most populated district in the State. It has a population of 6,081,322 with 3,402,224 males and 2,679,098 females. In Surat district, Surat city has the highest population (4,591,246) whereas sub-district Umarpada has the lowest (83,723). Among villages of Surat district, Hajira village of Sub-district Chorasi is the most populated villages with population 16,724 and Birama village of the sub-district Mandvi has the lowest population of 8. Out of the total population, 79.74% is the urban population and only 20.26% population is rural population. As per census 2011, there is a population growth of about 42.24% of Surat District. The proportion of Surat population consists of 10.06% of Gujarat's population.[17] The comparison of the population related facts of Surat are presented below in Table 4.12.

Table: 4.12 Population of Surat District

Description	2011	2001
Actual Population	6,081,322	4,275,540
Male	3,402,224	2,362,072
Female	2,679,098	1,913,468
Population Growth	42.24%	54.30%
Area Sq. Km	4,549	4,549
Density/km^2	1,337	988
Proportion to Gujarat Population	10.06%	8.44%

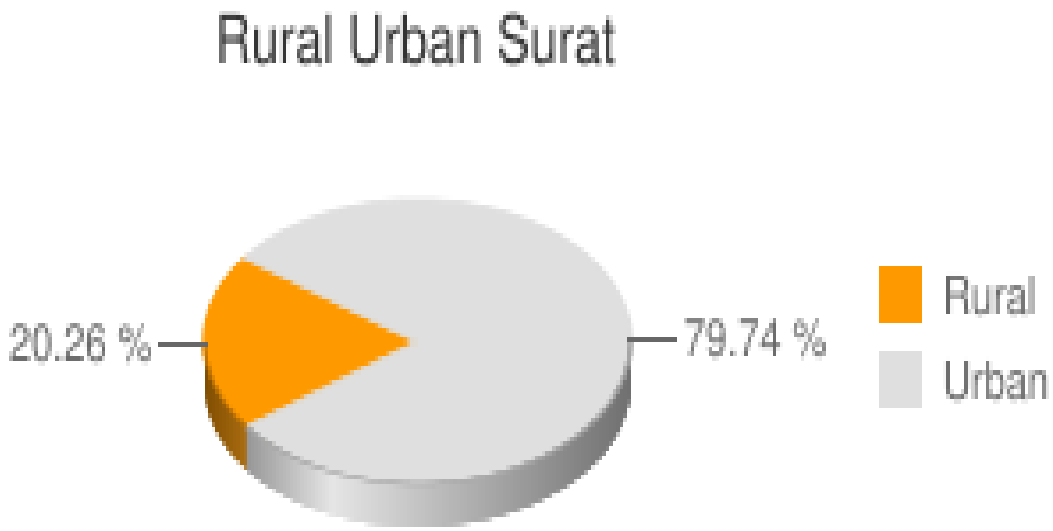
Source: www.census2011.co.in

Figure 4.3: Population of Surat District



Source: www.census2011.co.in

Figure 4.4: Distribution of Rural and Urban Population



Source: www.census2011.co.in

4.2.5 Healthcare in Surat District

The problem of inadequate health infrastructure in rural areas is not just a concern for India but also the concern for world around.

The NRHM was launched in 2004 and envisaged to tackle the problems of rural healthcare. It's supposed to address three major issues. The first being the starvation of funds to this rural healthcare infrastructure. Secondly, NRHM was to see the wastage, poor accountability and inefficient usage of resources. Thirdly, it's supposed to address the absence of a residential health care provider in each village. Patients had to travel to a nearby PHC for every small ailment. This can be tackled through sub centers (SC's).

All these aspects are inter-related and they interact all the times. Therefore, to find out the reality and the truth behind the degradation of healthcare facilities in rural areas, the researcher has considered inter-disciplinary approach.

The rate of migration of rural consumers to Surat city hospitals for treatment is more. Situation will put pressure on the provisions made by the Surat Urban Development Authority (SUDA) and Surat Municipal Corporation (SMC). The Gujarat state has a huge availability of health centers as seen in Table 4.11. Inadequate rural infrastructure and loss of trust on rural public health care is causing the Increased migration of rural consumers to Surat city hospitals for treatment and the existing infrastructure may not contain such scanty minimum public amenities and naturally city will face unrest in near future. There are 34 election wards in Surat city. The research is done in all these 34 wards for the purpose of the study.

Table 4.13 Gujarat District Wise Availability of Rural Health Centers as of March 31st , 2015.						
Name of State	**District**	**SC**	**PHC**	**CHC**	**Sub Div Hosp**	**DH/UHC**
Gujarat	Ahmadabad	214	37	10	1	0
	Amreli	247	39	12	3	1
	Anand	274	48	11	0	1
	Arvali (Modasa)	215	35	10	1	0
	Banaskantha	468	91	21	1	1
	Bharuch	222	38	9	0	1
	Bhavnagar	297	43	13	2	0
	Botad	87	14	5	0	1
	Chhotaudepur	310	45	10	0	1
	Dahod	637	85	13	1	1
	Devbhumi Dwaraka	107	17	4	1	0
	Gandhinagar	171	25	9	1	0
	Gir Somnath (Veraval)	158	23	8	1	0
	Jamnagar	152	24	6	0	1
	Junagadh	232	36	10	0	0
	Kutch-Bhuj (Kachchha)	285	44	15	2	0
	Kheda	279	46	11	1	1
	Mahesana	288	55	14	2	1
	Mahisagar (Lunavada)	222	32	5	1	1
	Morbi	136	19	5	1	0
	Panchmahals	279	46	10	0	1
	Patan	210	36	15	1	0
	Porbandar	84	11	4	0	1
	Rajkot	240	34	11	4	1
	Sabarkantha	276	42	12	1	1
	Surat	394	53	14	0	0
	Surendranagar	195	37	11	2	1
	Dang	68	9	3	0	1
	Vadodara	242	40	10	0	1
	Valsad	363	45	11	1	0
	Tapi	241	30	5	0	1
		8063	1247	320	31	21

Source: The Rural Health Statistics 2014-15, Government of India, Ministry of Health and Family Welfare Statistics Division.

Its observed from Table 4.11 that Surat has 394 Sub Centers, 53 Primary Health Centers and 14 Community Health Centers. There are no Sub Divisional Hospitals and District Hospitals.

4.2.6 Key Indicators at District Level – Comparison between Surat District and Gujarat State

4.2.6.1 Comparison of Maternal Health in Surat & Gujarat

Table 4.14 Comparison of Maternal Health in Surat & Gujarat:

	Mothers registered in the first trimester when they were pregnant with last live birth / still birth (%)		Mothers who had at least 3 ante-natal (%) care visits during the last pregnancy		Mothers got atleast one TT injection when they were pregnant with their last live birth/still birth (%)		Institutional births (%)		Delivery at home assisted by a doctor / nurse / LHV / ANM (%)		Mothers who received of post-natal care within 48 hours of delivery of their last child (%)	
District	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**
Surat	76.1	87	78.4	81.5	85.6	85.9	72.3	56.5	4.1	2.2	78.7	69.6
Gujarat	52.3	45.8	54.8	48	68.1	62.4	56.4	48	5.2	6	56.3	49.6

Source: DLHS 3 (2007-2008)[18]

Table 4.14 provides information on the Maternal Health of the residents of Surat district and Gujarat state. It is observed that 87 percent of mothers registered in first trimester is higher than the Gujarat state (45.8). 81.5 percent Mothers had at least 3 ante-natal (%) 3 care visits during the last pregnancy whereas the Gujarat state had only 48 percent. Around 85.9 percent Mothers got at least one TT injection compared to only 62.4 percent in Gujarat. There are 56.5 percent institutional births in Surat whereas there are only 48 percent in Gujarat. There are only 2.2 percent of deliveries assisted by a doctor or a nurse/LHV/ANM but its higher in Gujarat (6.0). There are 69.6 percent Mothers who received post-natal care within 48 hours of delivery of their last child in Surat whereas only 49.6 percent only received in Gujarat. It can be inferred that maternal health is better in Surat district as compared to the Gujarat state.

4.2.6.2 Child Immunization and Vitamin A supplementation

Table 4.15 Child Immunization and Vitamin A supplementation in Surat and Gujarat:

	Children (12-23months) fully immunized (BCG, 3 doses each of DPT and Polio, and Measles) (%)		Children (12- 23 months) who have received BCG Vaccine (%)		Children (12-23 months) who have received doses of Polio Vaccine (%)		Children (12-23 months) who have received doses of DPT Vaccine (%)		Children (12-23 months) who have received Measles Vaccine (%)		Children (9-35 months) who one have received at least dose of Vitamin A (%)	Children (above 21 months) who have received three doses of Vitamin A (%)	
District	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**
Surat	88.2	89.7	97.2	96.6	92.9	93.1	90.6	93.1	93.4	96.6	68.4	71.2	52.9
Gujarat	54.8	51.3	87.7	86.4	71.7	69.5	63.4	60.2	72.6	70.1	56.3	54.2	26.9

Source: DLHS 3 (2007-2008)[18]

Table 4.15 provides information on the child immunization and vitamin A supplementation in Surat and Gujarat. It is observed that 89.7 percent of Children (12-23 months) are fully immunized for BCG,3 doses each of DPT and Polio, and Measles but in Gujarat its only 51.3 percent. It's found that 42.9 percent of Children (above 21 months) have received three doses of Vitamin A but only 25.1 percent of them in Gujarat. Again to summarize in Surat district there are more children getting immunized and getting vitamin A administered as compared to Gujarat.

4.2.6.3 Child Health Care and treatment for Diarrhea and ARI

Table 4.16 Child Health Care and treatment for Diarrhea and ARI in Surat & Gujarat

	Treatment of childhood diseases (children under 3 years based on last two surviving children)								Child feeding practices (Children under 3 years)				
	Children with Diarrhoea in the last two weeks who received ORS (%)		**Children with Diarrhoea in the last two weeks who were given treatment (%)**		**Children with acute respiratory infection / fever in the last two weeks who are given treatment (%)**		**Children had check-up within 24 hours of delivery after (based on last live birth) (%)**		**Children breast fed within hour of birth (%)**		**Children (age 6 months above) exclusively breastfed (%)**		**Children (6 -24 who received solid or semi-solid food and still being breastfed (%)**
District	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**
Surat	50	88.9	71	100	100	100	78.6	72.9	35	39.5	22.2	35.6	59.3
Gujarat	36.7	36.2	65.6	65.6	79.5	76.5	57.2	50.9	48	47	28.8	29.4	57.8

Source: DLHS 3 (2007-2008) [18]

Table 4.16 provides information about Child Health Care and treatment for Diarrhea and Acute respiratory infection in Surat district and Gujarat. It is observed that 88.9 percent of Surat district Children with Diarrhea in the last two weeks have received ORS whereas only 36.2 percent received in Gujarat. 100 percent of the Surat district Children with acute respiratory infection / fever in the last two weeks is given treatment whereas only 76.5 received in Gujarat. It has been observed in Surat district that only 39.5 percent of Children breast fed within hour of birth whereas there were 47 percent fed in Gujarat.

4.2.6.4 Awareness on RTI/STI and HIV/AIDS

Table 4.17: Awareness on RTI / STI and HIV / AIDS in Surat and Gujarat

	Knowledge of HIV / AIDS and RTI / STI among Ever married Women (age15 - 49)								Knowledge of HIV / AIDS among Unmarried Women (age15 -24)						
	Women heard of HIV/AIDS (%)		**Women who knew that consistent condom use can reduce the chances of getting HIV / AIDS (%)**		**Women ever under-went test for detecting HIV/ AIDS (%)**		**Women heard of RTI/STI (%)**		**Women heard of HIV/AIDS**		**Women who knew that consistent condom use can reduce the chances of getting HIV / AIDS (%)**		**Women under-went test for detecting HIV/AIDS (%)13**	**Women heard of RTI / STI (%)**	
							Women heard of RTI/STI (%)		**(%)**						
District	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Rural**	**Total**	**Total**	**Rural**
Surat	60.5	45.7	50.9	39.6	7.4	7.1	33.6	19.1	83.5	79.3	44.3	19	0.5	33.8	29.3
Gujarat	42.4	32.8	46.2	42.7	5	3.6	22.6	17.1	67	59.7	41.4	36.8	0.7	28.7	24.7

Source: DLHS 3 (2007-2008) [18]

Table 4.17 provides information on the awareness of RTI/STI and HIV/AIDS among Ever married Women (age 15-49) in Surat district and Gujarat. It has been observed that more of Surat district women are aware of RTI/STI and HIV/AIDS and more of them underwent tests for detecting HIV as compared to Gujarat state. There are more women in Surat district who heard of HIV as compared to Gujarat state.

Table 4.18: Women facilitated / motivated by ASHA for						
	Ante – Natal Care (%)		Delivery at Health Facility (%)		Use of Family Planning Methods (%)	
District	Total	Rural	Total	Rural	Total	Rural
Kachchh	1.9	2	1.2	1.5	1.1	1.7
Banaskantha	2.8	3	2.4	2.6	3.4	2.5
Patan	0.9	1.1	0.7	0.8	0.9	1.1
Mahesana	1	1.3	0	0	0.2	0.2
SabarKantha	0	0	0.6	0.7	1.8	2
Gandhinagar	0	0	0	0	0.7	1
Ahmadabad	0.5	0	0.5	0	0.6	1.9
Surendranagar	3.8	4.7	1.4	0.9	2.1	2.2
Rajkot	0.9	0	0.8	0	0.3	0.7
Jamnagar	0.4	0.7	1.9	2.4	0	0
Porbandar	0	0	0	0	0	0
Junagarh	0	0	0	0	0	0
Amreli	1.8	2.2	0.4	0.5	1.8	2
Bhavnagar	0.8	0.8	0.3	0.6	0.2	0.3
Anand	0.5	0.6	0	0	0	0
Kheda	1.4	1.7	1.9	2.2	2.9	3.6
Panchmahals	0.9	1	3.2	3.5	2.3	2.6
Dohad	0	0	0.2	0.2	0	0
Vadodara	1.2	2.3	0	0	0.6	1.2
Narmada	6.2	6.7	4.8	5.2	9.2	9.9
Bharuch	1.3	1.9	0.4	0.5	2.3	3
Surat	0.5	1.3	0	0	0	0
The Dangs	1.2	1.2	2.7	2.7	5.6	5.6
Navsari	1.1	0.8	0	0	0.4	0
Valsad	0.5	0.6	0.7	0.9	1.1	1.4
Gujarat	1.2	1.5	1.1	1.4	1.6	2.1

4.2.6.5 Women facilitated/motivated by ASHA for ANC, Delivery at Healthcare Facility and Family Planning

Table 4.19 Women facilitated/motivated by ASHA for ANC, Delivery at Healthcare Facility Family Planning

	Villages having				Health facility within village							Total number of villages
District	JSY	Health & Sanitation Committee	RKS	PRI aware of Untied fund	ICDS	Sub-Centre	PHC	Block PHC	Govt. Dispe-nsary	Private Clinic	AYUSH	
Kachchh	19	16	7	10	31	7	3	0	1	7	1	35
Banaskantha	38	20	15	16	42	15	4	4	4	6	4	44
Patan	28	18	7	16	39	16	3	0	1	6	1	40
Mahesana	35	26	4	8	37	23	8	4	4	15	1	39
SabarKantha	38	13	15	9	43	15	4	5	2	6	2	45
Gandhinagar	21	20	10	5	31	20	3	1	0	13	1	32
Ahmadabad	7	2	0	1	10	2	2	0	1	2	0	10
Surendranagar	21	11	4	4	31	12	6	2	5	10	4	37
Rajkot	22	10	6	8	24	11	3	0	1	11	3	24
Jamnagar	21	5	6	6	26	8	1	1	1	3	1	28
Porbandar	25	5	17	12	26	11	4	1	2	4	1	26
Junagarh	32	8	11	9	34	17	4	1	0	9	3	35
Amreli	36	6	13	7	39	19	5	4	2	9	3	39
Bhavnagar	25	7	10	6	29	11	4	4	2	8	2	31
Anand	35	19	20	19	35	26	11	7	6	23	9	36
Kheda	37	17	11	18	39	21	8	2	1	10	5	40
Panchmahals	35	14	13	11	36	15	5	0	2	5	3	44
Dohad	39	11	20	14	45	19	6	3	9	4	7	45
Vadodara	26	8	10	11	25	12	2	2	7	3	5	27
Narmada	41	13	9	9	44	12	3	1	2	4	2	45
Bharuch	33	16	8	8	37	13	5	7	11	8	10	37
Surat	16	6	3	1	20	11	6	6	5	7	4	20
TheDangs	45	27	9	20	47	7	2	1	1	2	3	50
Navsari	31	15	19	6	34	14	7	7	3	11	5	36
Valsad	24	14	3	2	28	8	5	4	3	8	5	36
Gujarat	730	327	250	236	832	345	114	67	76	194	85	881

Source: DLHS 3 (2007-2008) [18]

4.2.6.6 Facility Survey - Community Health Centre (CHC)

Table 4.20 Facility Survey of CHC at Surat and Gujarat

	Infrastructure:										
	CHC having								CHC having		
District	Personal Computer	Operation Theatre	Labor Room	Blood Storage Facility	Large deep freezer	CHC prepared a CHC plan for the current year	Water supply for 24 hours	Ambul-ance on road	General Surgeon	Obste-trician / Gynaec-ologist	Total No of CHC
Kachchh	8	8	9	2	7	7	8	9	2	0	9
Banaskantha	8	8	9	2	4	5	9	7	4	1	10
Patan	6	5	6	0	2	6	7	6	2	0	7
Mahesana	11	9	12	1	5	10	12	12	1	1	13
Sabarkantha	13	12	12	0	4	12	13	9	4	1	13
Gandhinagar	4	5	6	1	3	6	5	5	2	1	6
Ahmadabad	5	5	5	0	2	5	5	5	2	2	5
Surendranagar	10	11	9	2	4	7	10	10	3	1	11
Rajkot	8	6	8	1	2	8	7	8	1	2	8
Jamnagar	7	8	7	0	3	8	6	8	1	0	8
Porbandar	3	4	4	1	3	2	4	4	0	1	4
Junagarh	13	10	13	0	6	12	13	12	4	0	13
Amreli	6	10	10	0	4	10	9	8	0	2	10
Bhavnagar	11	11	12	0	7	12	12	11	4	1	12
Anand	9	9	9	0	6	6	9	6	1	0	9
Kheda	8	7	9	0	1	8	9	8	1	0	9
Panchmahals	10	8	10	1	1	7	10	8	2	3	10
Dohad	10	8	10	1	2	8	10	9	2	1	10
Vadodara	11	11	11	2	4	7	11	9	3	3	11
Narmada	3	2	2	0	1	3	2	2	0	0	3
Bharuch	7	6	7	0	2	4	5	5	2	0	7
Surat	**6**	**5**	**6**	**0**	**3**	**5**	**6**	**5**	**1**	**2**	**6**
The Dangs	1	1	0	0	0	0	1	1	0	0	1
Navsari	6	8	9	0	6	9	9	8	0	2	9
Valsad	5	5	8	0	2	7	7	7	2	0	8
Gujarat	**189**	**182**	**203**	**14**	**84**	**174**	**199**	**182**	**44**	**24**	**212**

Source: DLHS 3 (2007-2008) [18]

4.2.6.7 Facility Survey Primary Health Centre (PHC)

Table 4.21: Facility Survey of PHC at Surat and Gujarat

	Infrastructure:									
	PHCs having									
District	Residential Quarter for Medical Officer	Separate Labour Room	Personal Computer	Normal Delivery Kit	Large Deep Freezer	Regular water supply	Neonatal Warmer (Incubator)	Operation Theater with Boyle's Apparatus	Operation Theatre with anaes-thetic medicine	Total number of PHCs
Kachchh	22	22	20	23	4	23	2	3	1	23
Banaskantha	24	29	31	31	9	31	6	1	1	32
Patan	12	20	20	20	10	20	2	2	1	20
Mahesana	13	23	27	27	7	29	3	2	1	29
Sabarkantha	20	24	28	28	10	26	1	2	2	28
Gandhinagar	13	13	16	16	9	16	5	3	3	16
Ahmadabad	4	8	8	8	1	8	1	2	3	8
Surendranagar	15	17	20	19	7	16	3	1	0	20
Rajkot	10	17	19	17	2	21	1	2	1	21
Jamnagar	14	16	18	18	5	18	5	2	1	18
Porbandar	5	9	10	10	2	10	1	1	0	10
Junagarh	15	21	22	24	2	20	0	2	3	24
Amreli	8	16	23	22	11	22	5	7	6	24
Bhavnagar	12	21	23	23	8	21	1	7	8	24
Anand	15	27	28	28	8	28	5	7	4	28
Kheda	13	23	27	24	13	25	5	9	7	27
Panchmahals	10	27	26	29	6	26	3	1	1	29
Dohad	10	25	23	27	6	25	4	0	0	30
Vadodara	15	20	20	23	8	22	4	1	0	23
Narmada	6	16	20	21	11	19	2	0	0	21
Bharuch	14	20	21	21	7	20	4	2	1	21
Surat	**8**	**8**	**13**	**13**	**1**	**11**	**1**	**0**	**0**	**13**
The Dangs	7	7	7	7	2	7	5	1	1	7
Navsari	13	16	25	25	12	24	5	4	4	25
Valsad	9	14	16	14	3	17	0	3	2	21
Gujarat	**307**	**459**	**511**	**518**	**164**	**505**	**74**	**65**	**51**	**542**

Source: DLHS 3 (2007-2008) [18]

4.2.6.8 Facility Survey - Sub Center (SC)

Table 4.22: Facility Survey of SC at Surat and Gujarat

	Infrastructure						
District	Sub Centre located in government building	Sub Centre having communication facility	Sub Centre having Separate labour room	ANM staying in Sub Centre village	Sub Centre having Staff quarter for ANM	Sub Centre having regular water supply	Total number of Sub Centre
Kachchh	21	8	12	3	18	12	27
BanasKantha	28	17	19	5	28	29	37
Patan	30	4	19	13	27	29	39
Mahesana	24	1	12	7	24	22	32
SabarKantha	19	2	9	7	14	24	28
Gandhinagar	22	20	11	2	18	20	27
Ahmadabad	5	6	4	1	3	3	8
Surendranagar	20	3	17	4	14	16	27
Rajkot	17	20	10	2	12	15	23
Jamnagar	17	2	8	4	15	17	23
Porbandar	15	18	9	5	11	14	24
Junagarh	16	1	9	8	14	23	33
Amreli	19	11	11	2	12	20	30
Bhavnagar	20	0	18	5	18	25	32
Anand	15	4	12	2	18	25	29
Kheda	15	2	13	6	23	25	32
Panchmahals	22	29	12	10	16	22	36
Dohad	22	1	18	1	21	24	33
Vadodara	19	0	18	1	19	22	25
Narmada	22	2	8	4	21	23	35
Bharuch	20	0	12	5	18	21	30
Surat	10	2	4	2	6	13	15
The Dangs	21	3	20	2	20	16	29
Navsari	16	1	10	4	11	27	35
Valsad	14	0	4	4	17	16	25
Gujarat	469	157	299	109	418	503	714

Source: DLHS 3 (2007-2008) [18]

In the above Tables 4.15-4.22, It has been observed in Surat district that very few percentages of Women are facilitated/motivated by ASHA workers for Antenatal Care, Delivery at health centre and use of family planning methods as compared to total Gujarat state. It has also been observed that the CHC in Surat are better equipped with personal computer, Operation theatre, labor room, deep

freezer, ambulance and water supply for 24 hours as compared to Gujarat state. The 90 percent of CHC are not having General Surgeon and Gynecologist. The Medical Officers training on NSV, prevention care and support for HIV patients, and other trainings are much weaker. 100 percent of the CHC's have 24 hours normal delivery facility and new born care.

The Surat district has PHC's which are well equipped and manned as compared to Gujarat state. They have well equipped medical officer residential quarters, separate labour room, PC, normal delivery kit, large deep freezer, Neonatal warmer, OT with Boyle's apparatus and OT with anesthetic medication. There's lack of manpower such as Lady Medical Officer (80 percent) and Laboratory Technicians (30 percent) are not available. Training for the medical officer is also weak as compared to other places. Only 50 percent of the PHC's received the untied funds in previous financial year, but these parameters are still better as compared to Gujarat state. The Surat district Sub Centers are better equipped and manned as compared to Gujarat state.

In conclusion it has been noted that Gujarat state stands sixth among the ranks of all the states in India that has good healthcare indicators. It can still achieve the best performing indicators with extra dedication and policy implementation and monitoring. Surat district has outsmarted the total Gujarat state indices in many parameters. There are many deficiencies in the rural areas but they can be improved significantly on timely allocation of resources and up gradation of facilities.

4.3 Conclusion on the comparison of Surat district and Gujarat State

It has been observed that Surat district has fared in the majority of the parameters better than the total Gujarat state. There's still a lot to improve to attain better input and output indicators of rural healthcare. A concerted effort from the district administration with implementation of national and state policies can find Surat to be a model district in the whole country.

References

1. FICCI-KPMG Report, 2007. (http://articles.economictimes.indiatimes.com/2015-09-01/news/66107692_1_healthcare-sector-healthcare-delivery-social-sector)
2. Frost & Sullivan, LSI Financial Services, Deloitte, TechSci Research. http://www.india-opportunities.es/archivos/publicaciones/Healthcare-January-2016.pdf, Page 9.
3. https://data.gov.in/catalog/rural-health-statistics-2016.
4. Rural Health Statistics in India 2015-16. Available from: https://nrhm-mis.nic.in/Pages/RHS2016.aspx?RootFolder=%2FRURAL%20HEALTH%20STATISTICS%2F%28A%29RHS%20%202016&FolderCTID=0x01200057278FD1EC909F429B03E86C7A7C3F31&View=%7B3EF44ABD-FC77-4A1F-9195-D34FCD06C7BA%7D Webpage.htm, accessed on August 1, 2017.
5. Voluntary Health Association of India (VHAI). 1997. Report of the Independent Commission on Health in India.
6. *Jugal Kishore 2005.* National health programs of India: national policies & legislations related to health. *Century Publications.* ISBN 978-81-88132-13-3. Retrieved 2 September 2012. Kumar R. Academic institutionalization of community health services: Way ahead in medical education reforms. J Family Med Prim Care. 2012;1:10–9.
7. *Ministry of Health and Family Welfare.* "Draft National Health Policy 2015". Retrieved 1 April 2015.
8. Nandan D, Agarwal D. Human resources for health in India: urgent need for reforms. Indian J Community Med 2012; 37 : 205-6.)
9. Mann JM. , Gostin L, Gruskin S, Brennan T, Lazzarini Z, Fineberg HV. Health and human rights. Health Hum Rights 1994; 1 : 6-23.)

10. Planning Commission of India. 2. High level expert group report on universal health coverage for India. 2011. Available from: http://planningcommission. nic.in/reports/genrep/rep_ uhc0812.pdf, accessed on August 6, 2014.)
11. World Health Organization. Country cooperation strategy at a glance India. 2013. Available from: http://www.who. int/countryfocus/cooperation_strategy/ccsbrief_ ind_en.pdf, accessed on March 20, 2014.).
12. Suryanarayana, M.H., Agrawal, A., & Prabu, S.K. (2011). Inequality adjusted Human Development Index for India's States. Retrieved August 2012, from United Nations Development Program (UNDP) India:
13. Government of India, Ministry of Health and Family Welfare, Statistics Division Rural Health Statistics, 2014-2015.
14. https://counterview.org/2015/10/20/healthcare-gujarat-governments-low-budgetary-provisioning-has-resulted-in-high-out-of-pocket-expenditure-for-the-poor/
15. Mavlankar, D., Singh, A., Patel, S. R., Desai, A., & Singh, P. V. (2009). Saving mothers and newborns through an innovative partnership with private sector obstetricians: Chiranjeevi scheme of Gujarat, India. International Journal of Gynecology and Obstetrics, 271-276.
16. Census of India 2011, Gujarat (2011).*Brief History of the District,* published by Directorate of Census Operations Gujarat, 12-13.
17. www.census2011.co.in. Retrieved July,2017.
18. District Level Household and Facility Survey DLHS 3 (2007-2008). http://rchiips.org/pdf/rch3/state/India.pdf accessed on August 1, 2017

CHAPTER – 5

DATA PRESENTATION & ANALYSIS

5.1 Introduction

The primary data collected through questionnaire has been collated and tabulated for analyzing various aspects of the study. The data will be tested for the various hypothesis postulated. Through the use of various statistical tools the hypothesis will be tested here. The research objectives will be fulfilled after analyzing this data here. Inferences for each of the tabulation will give an insight into what the researcher is trying to infer from the same. The tabulation and analysis has been done through Excel and SPSS software.

5.2 Primary Data Presentation

The secondary data has proved to have its own value. They provide broad guidelines of the area of research, whereas the primary data provides a focused structured view of the real situation. So it's essential for the researcher to collect primary data and analyze both the situations for better understanding of the study. Further, secondary source data is not only sufficient for the required information or to update the information, therefore primary source of data is collected for the study. Primary source of information means getting information directly from people who are currently using the services.

Primary data for the present study is collected to know the review of patients, employees and officers who are connected to the system of rural healthcare services. The data collected from samples i.e. Patients, employees and officers through structured questionnaires are presented below.

5.2.1 Demographic Analysis of Patients, Employees and Officers

Table 5.1 AGE GROUP OF RESPONDENTS							
		Patients		Employees		Officers	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Valid	Under 21 Yrs	9	2.3	42	10.5	0	0
	21 - 34 Yrs	9	2.3	95	23.8	1	1.0
	35 - 44 Yrs	92	23	124	31	21	21.0
	45 - 54 Yrs	88	22	117	29.3	32	32.0
	55 Yrs and Older	202	50.5	22	5.5	46	46.0
	Total	400	100	400	100	100	100.0

Table 5.1 provides the average age of the respondents who filled the questionnaire. Among the patients there are 50.5 percent respondents having the highest age of 55 years and older and among officers it is 46 percent and among employees there are only 5.5 percent. The highest age bracket among 31 percent employees is 35-44 years. This shows that majority of patients and officers with maturity of age have been chosen to fill the questionnaire whereas the majority of employees who are relatively younger are chosen.

Table 5.2 SEX OF THE RESPONDENTS							
		Patients		Employees		Officers	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Valid	MALE	219	54.8	192	48	71	71
	FEMALE	181	45.3	208	52	29	29
	Total	400	100	400	100	100	100

Table 5.2 provides the gender of the respondents who filled the questionnaire. Among patients majority of 54.8 percent are males and 45.3 percent are females. Whereas 52 percent of employees are females and 48 percent employees are males. Among officers 71 percent of respondents are males and only 29 percent of them are females. The patients and employees are well balanced gender wise. Among officers there are more males maybe because of the field work travel involved in rural areas.

Table 5.3 MARITAL STATUS

		Patients		**Employees**		**Officers**	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Valid	MARRIED	400	100	400	100	100	100

Table 5.3 provides information on the marital status of the respondents who filled the questionnaire. It has been observed that there are 100 percent of patients, employees and officers are married. For this group of patients the maternal and child care requirements of rural healthcare facilities are required.

Table 5.5 TOTAL MEMBERS IN FAMILY OF PATIENTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	12	3.0	3.0	3.0
	1 Child	106	26.5	26.5	29.5
	2 Children	244	61.0	61.0	90.5
	3 Children	38	9.5	9.5	100.0
	Total	400	100.0	100.0	

Table 5.5 provides the number of children each of the respondents have. It has been observed that 61 percent of them have 2 children and 26.5 percent of them have a

single child. There are 9.5 percent of patients who have 3 children. Majority of the patients have two children. This indicator shows the responsibility and burden on the patients. More the children higher is the burden and vice versa.

Table 5.6 EDUCATIONAL STATUS OF PATIENTS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	UPTO 10th Std	316	79.0	79.0	79.0
	Upto 12Th Std	84	21.0	21.0	100.0
	Total	400	100.0	100.0	

Table 5.6 provides into the insight of education level of the respondents who filled the questionnaire. it has been observed that a majority of 79 percent of the patients have studied upto 10^{th} std only whereas a negligible 21 percent have studied upto 12^{th} Std. This shows that all the respondents are not well educated to get professional jobs. It also shows majority of the rural population sampled has less educational pursuits.

Table 5.7 OCCUPATION TYPE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Farmer	72	18.0	18.0	18.0
	Daily Wag Worker	328	82.0	82.0	100.0
	Total	400	100.0	100.0	

Table 5.7 provides the types of occupation of respondents who filled the questionnaire. It has been observed that majority of 82 percent of the patients are daily wage labourers and 18 percent are farmers. This data correlates to the fact that patients are with very low income group as per their occupation type.

Table 5.8 ANNUAL INCOME OF PATIENTS & EMPLOYEES					
		Patients		Employees	
		Frequency	Percent	Frequency	Percent
Valid	Upto Rs. 20000	272	68	0	0
	Rs. 20000 - Rs. 29999	128	32	6	1.5
	Rs. 30000 - Rs. 49999	0	0	78	19.5
	Rs. 50000 - Rs. 74999	0	0	17	4.3
	Rs. 75000 and More	0	0	299	74.8
	Total	400	100.0	400	100.0

Table 5.8 provides information on the income level of the respondents. It has been observed that majority of 68 percent patients are having income less than Rs. 20000 and only 32 percent of them have income between Rs. 20000 to Rs. 29999. Among employees it's observed that 74.8 percent of them have income more than Rs. 75000 and a small group of 19.5 percent of them have an income between Rs. 30000 to Rs. 49999. There are 4.3 percent of employees earning Rs. 50000 to Rs. 74999 and a paltry 1.5 percent of people earning Rs. 20000 to Rs. 29999. Its inferred that the patients are majorly below poverty line whereas employees are better positioned on income levels.

Table 5.9 ITEMS OWNED BY EACH PATIENT					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None of the above	400	100.0	100.0	100.0

Table 5.9 provides a list of items owned by the respondents who filled the questionnaire. It has been observed that 100 percent of patients don't own any assets such as Cycle, TV, Tube Well or Sanitary latrine. This shows that they are socio-economically backward and it correlates to their educational status, income level and occupation type.

Table 5.10 OCCUPATION TYPE OF RURAL HEALTHCARE EMPLOYEES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nurse	73	18.3	18.3	18.3
	Doctor	36	9.0	9.0	27.3
	Technician	124	31.0	31.0	58.3
	Housekeeping	91	22.8	22.8	81.0
	Security	13	3.3	3.3	84.3
	Pharmacist	17	4.3	4.3	88.5
	Others	9	2.3	2.3	90.8
	Health Worker	37	9.3	9.3	100.0
	Total	400	100.0	100.0	

Table 5.10 provides the details of occupation type of the respondents. It has been observed that there are 31 percent of Technicians, 22.8 percent of housekeeping and 18.3 percent of nurses. The sample of employees also constitutes 9 percent of doctors, 9.3 percent of health workers. There are a few 4.3 percent of pharmacists, 3.3 percent of security and 2.3 percent of other category of employees. It can be inferred that all the major employment categories of rural healthcare centre are covered and the data collected from employees is largely a diverse group of persons working in various departments.

Table 5.11 OCCUPATION TYPE OF THE OFFICERS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hospital Administrators	2	2.0	2.0	2.0
	Health Officers	32	32.0	32.0	34.0
	District Health Officers	66	66.0	66.0	100.0
	Total	100	100.0	100.0	

Table 5.11 provides information on the type of occupation each of the officers is having. It has been observed that 66 percent of the officers are belonging to the district health officers and 32 percent are health officers. Only 2 percent are hospital administrators. All the rural healthcare officers are majorly covered to acquire the real status of the rural healthcare.

Table 5.11 DEMOGRAPHICS WITH EDUCATION AND FINANCIAL STATUS OF RURAL PATIENTS

		Age Range of Respondent	Sex of the Respondent	Total Members in Family	Educational Status	Occupation Type	Annual Income of Family	Items Owned by Each Patient
N	Valid	400	400	400	400	400	400	400
	Missing	0	0	0	0	0	0	0
Mean		4.16	1.45	1.77	1.21	1.82	1.32	0.00
Median		5.00	1.00	2.00	1.00	2.00	1.00	0.00
Mode		5	1	2	1	2	1	0
Mode Interpretation		55 Years & Older	Mostly Males	2 Children	Upto 10^{th} Std	Daily Wage Worker	Upto 20,000	None
Range		4	1	3	1	1	1	0
Minimum		1	1	0	1	1	1	0
Maximum		5	2	3	2	2	2	0
Sum		1665	581	708	484	728	528	0

Table 5.11 provides a summary of the socioeconomic status of the patients. It has been observed that majority of the age range of the respondents is 55 years and older. The respondents are mostly males having two children. The patients are very less educated mostly below 10^{th} standard and are mostly daily wage labourers earning less than Rs. 20000. They don't own any assets such as Cycle, TV, Tube Well or Sanitary latrine. This data correlates to their educational status, income level and occupation type. It's been inferred that the respondents are socio-economically backward and are mostly below poverty line.

5.2.2 Duration of Employees and Officers working with the Rural Healthcare System

Table 5.12 DURATION OF EMPLOYEES WORKING IN A RURAL HEALTHCARE FACILITY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less Than 1 Yr	83	20.8	20.8	20.8
	1 - 2 Yrs	91	22.8	22.8	43.5
	2 - 5 Yrs	131	32.8	32.8	76.3
	5 - 10 Yrs	95	23.8	23.8	100.0
	Total	400	100.0	100.0	

Table 5.12 provides information on the duration of time since the employees are working in the rural healthcare facility. It has been observed that 32.8 percent of the employees are working since 2-5 years and 23.8 percent of them are working since 5-10 years. It's found that 56.6 percent of the employees are working since 2 years to 10 years. It's also observed that there are 44 percent of them who are working since less than two years. Employees working in the rural healthcare facility are aware of the difficulties faced by them and the patients who visit them.

Table 5.13 DURATION OF VISITING RURAL HEALTHCARE FACILITY BY OFFICERS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 - 2 Yrs	1	1.0	1.0	1.0
	2 - 5 Yrs	4	4.0	4.0	5.0
	5 - 10 Yrs	17	17.0	17.0	22.0
	More than 10 Yrs	78	78.0	78.0	100.0
	Total	100	100.0	100.0	

Table 5.13 provides the time duration of the officers visiting healthcare facility. It has been observed that there are 78 percent of officers visiting the rural healthcare facilities since more than 10 years and around 17 percent between 5-10 years. There are only 5 percent of them who are in rural healthcare since 2-5 years and just 1 percent who are since 1-2 years. The longer the duration better is the knowledge of rural healthcare and vice versa. Here its observed that majority of them are working since more than 10 years so the officers data acquired is more reliable and authentic.

5.2.3 Rural Healthcare Utilization by Patients

Table 5.14 DURATION OF UTILISING HEALTH CARE FACILITY BY PATIENTS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less Than 1 Yr	15	3.8	3.8	3.8
	1 – 2 Yrs	33	8.3	8.3	12.0
	2 – 5 Yrs	218	54.5	54.5	66.5
	5 – 10 Yrs	61	15.3	15.3	81.8
	More than 10 Yrs	73	18.3	18.3	100.0
	Total	400	100.0	100.0	

Table 5.14 provides views of patients on duration of visiting the healthcare facility. It's observed that 54.5 percent of people are utilising this facility since 2-5 years. There are only 18 percent and 15 percent of people who are utilising this facility since more than 10 years and 5-10 years respectively whereas there are a negligible 3.8 percent people who started utilising this facility since less than a year. Some 8 percent of them have been using this facility since 1-2 years. Majority of the patients are utilising the rural healthcare since 2-5 years.

Table 5.15 RURAL PATIENTS HAD ILLNESS IN LAST 14 DAYS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	361	90.3	90.3	90.3
	NO	39	9.8	9.8	100.0
	Total	400	100.0	100.0	

Table 5.15 provides information on the rural patients who were sick in the past 14 days. It has been observed that 90.3 percent of the rural patients were sick the last 14 days. Only 9.8 percent of them were not sick. This data is valid because the sample was collected at the hospital and not at the home therefore majority of them say they were sick the past 14 days. This information is required as the sample selected should have experience of rural healthcare facilities to give appropriate feedback in the questionnaire.

Table 5.16 FREQUECY OF ILLNESS IN THE PATIENTS FAMILY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Once a Week	24	6.0	6.0	6.0
	Once a Month	130	32.5	32.5	38.5
	Twice a Month	123	30.8	30.8	69.3
	Once in Six Months	76	19.0	19.0	88.3
	Once in a Year	47	11.8	11.8	100.0
	Total	400	100.0	100.0	

Table 5.16 provides information on the frequency of the patients falling sick. It has been observed that there are 32 percent of the patients who fall sick once in a month and 30.8 percent of them fall sick twice in a month. 19 percent of them responded they fall sick once in 6 months and 11.8 percent once in a year. It's inferred that majority of the rural patients fall sick very often either due to poor sanitation or poor rural infrastructure or some other reasons.

Table 5.17 PATIENTS STATUS OF THE ILLNESS TODAY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	CURED	107	26.8	26.8	26.8
	SICK	293	73.3	73.3	100.0
	Total	400	100.0	100.0	

Table 5.17 provides information on the status of illness today. It has been observed that 73.3 percent of them feel they are still sick and not cured whereas 26.8 percent of them feel they are totally cured from their illness.

Table 5.18 TYPE OF HEALTHCARE PROVIDER CONTACTED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VILLAGE DOCTOR	318	79.5	79.5	79.5
	PHARMACIST	82	20.5	20.5	100.0
	Total	400	100.0	100.0	

Table 5.18 provides information on the type of healthcare provider they have contacted when they fell ill. It has been observed that 79.5 percent of the people contacted the village doctor when they fell sick. Only 20.5 percent of them contacted a pharmacist. Its inferred that they prefer seeing a doctor when they fall sick.

Table 5.19 LOCATION OF HEALTHCARE PROVIDER CONTACTED					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MEDICAL COLLEGE	39	9.8	9.8	9.8
	PRIMARY HEALTH CENTER	322	80.5	80.5	90.3
	HC PROVIDER RESIDENCE	39	9.8	9.8	100.0
	Total	400	100.0	100.0	

Table 5.19 provides information of the location of the healthcare provider which they contacted when they fell sick. it has been found that the majority of 80.5 percent rural patients first contacted the Primary health center (PHC) and 9.8 percent of them went to the medical college in the city. 9.8 percent of them went to the health care provider residence when they fell sick. The majority of the patients went to the PHC for further management of the sickness.

Table 5.20 OPINION ABOUT THE SERVICES OF THE VILLAGE HC PROVIDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BAD	202	50.5	50.5	50.5
	VERY BAD	198	49.5	49.5	100.0
	Total	400	100.0	100.0	

Table 5.20 gives information on the opinion of the village healthcare provider. Here the patients have majorly contacted the PHC and they have found that 50.5 percent of the patients are having a bad opinion and 49.5 percent of them have a very bad opinion. Majority or rather all 400 patients feel the PHC is not acceptable to them. Since the

facility is there they come there probably to avail the emergency care. Given a choice they wouldn't go there.

Table 5.20 PATIENT REFERRAL TO OTHER PLACES					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	329	82.3	82.3	82.3
	NO	71	17.8	17.8	100.0
	Total	400	100.0	100.0	

Table 5.20 provides information about the rural patients being referred to an outside healthcare facility or provider. It has been observed that 82.3 percent of them feel they have been referred out and only 17.8 percent feel they are not referred out. Majority of them feel they are being referred out.

Table 5.21 PATIENT REFERRAL TO OTHER HEALTHCARE PROVIDERS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MBBS DOCTOR CLINIC	45	11.3	11.3	11.3
	PRIVATE CLINIC	355	88.8	88.8	100.0
	Total	400	100.0	100.0	

Table 5.21 provides information on where the patients are being referred to. It has been observed that 88.8 percent of the patients are referred to private clinics and 11.3 percent are referred to MBBS doctor clinic. Majority of the patients are referred to private clinics where the fees is collected from them for service provided.

5.2.4 Affordability of Patients

Table 5.22 AFFORDABILITY OF PATIENTS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	37	9.3	9.3	9.3
	NO	363	90.8	90.8	100.0
	Total	400	100.0	100.0	

Table 5.22 provides information on the affordability or paying capacity of the rural patients referred to outside private clinics. A majority of 90.8 percent of the patients feel they cannot afford the private clinic services which are fee for service whereas only 9.3 percent of them feel they can afford.

Table 5.23 BORROWED MONEY TO PAY THE HEALTHCARE PROVIDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	400	100.0	100.0	100.0

Table 5.23 provides information on sources of finance to pay the referred healthcare provider and in this case a private clinic or hospital. The total patients 100 percent of them had to borrow money from someone to pay for the healthcare provider. This will further bring down the socio economic situation of these patients.

5.2.4.1 Relationship between Patients affordability status and satisfaction of services

Table 5.24 AFFORDABILITY OF PATIENTS * SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS * Finance Crosstabulation

Finance				SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS		Total
				YES	NO	
Affordability	AFFORDABILITY OF PATIENTS	YES	Count	2	35	37
			% of Total	0.50%	8.80%	9.20%
		NO	Count	13	350	363
			% of Total	3.20%	87.50%	90.80%
	Total		Count	15	385	400
			% of Total	3.80%	96.20%	100.00%
Borrow money	AFFORDABILITY OF PATIENTS	YES	Count	15	385	400
			% of Total	3.80%	96.20%	100.00%
	Total		Count	15	385	400
			% of Total	3.80%	96.20%	100.00%

Table 5.24 provides information about patient's affordability and financial status relationship on satisfaction. It has been observed that 90 percent of the patient cannot afford private healthcare services and therefore 96.2 percent of them had to borrow money to pay for the private healthcare facilities. In spite of the affordability issues and financial borrowing it has been observed that 96.2 percent of them still are not satisfied with rural healthcare services so therefore are going to the private healthcare facilities.

Table 5.25 LOAN REPAYMENT DURATION FOR PATIENTS WHO BORROWED MONEY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3 – 6 YEARS	69	17.3	17.3	17.3
	MORE THAN 6 YEARS	331	82.8	82.8	100.0
	Total	400	100.0	100.0	

Table 5.25 provides information on time taken to pay back the borrowed money. It has been observed that the majority of 82.8 percent patients took more than 6 years to pay back the loan and only 17.3 percent took 3-6 years. The patients take a long time to pay back the money and the interest rates will surely indebt them further leading to financial burden on the family.

5.2.4.2 Relationship between loan repayment duration and satisfaction of services

Table 5.26 LOAN REPAYMENT DURATION * SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS Crosstabulation					
			SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS		Total
			YES	NO	
LOAN REPAYMENT DURATION	3 – 6 YEARS	Count	3	66	69
		% of Total	0.8%	16.5%	17.2%
	MORE THAN 6 YEARS	Count	12	319	331
		% of Total	3.0%	79.8%	82.8%
Total		Count	15	385	400
		% of Total	3.8%	96.2%	100.0%

Table 5.26 provides information on the relationship between the capacity of loan repayment with patients satisfaction of rural healthcare services. It has been observed

that 82.8 percent of the patient take more than six years to repay the loan yet they are not having satisfaction (96.2 percent) of rural healthcare services.

5.2.5 Patients Awareness About Preventive Healthcare Programs

Table 5.27 PATIENTS AWARENESS ABOUT PREVENTIVE HEALTHCARE PROGRAMS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	42	10.5	10.5	10.5
	NO	358	89.5	89.5	100.0
	Total	400	100.0	100.0	

Table 5.27 provides information on the awareness of patient regarding preventive healthcare programs. It has been observed that 89.5 percent of patients are not aware of any preventive health care programs whereas there are only 10.5 percent who are aware. If preventive healthcare programs are started and more patients are aware then this financial burden can be avoided.

5.2.6 Status of Patients Feedback after availing rural healthcare services

Table 5.28 PATIENT FEEDBACK TAKEN AFTER AVAILING SERVICES AT RURAL HEALTHCARE FACILITIES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NEVER	400	100.0	100.0	100.0

Table 5.28 provides information of patient feedback services implemented in the healthcare facility. It has been observed that 100 percent of the patients opined that there are no feedback forms given to them after they avail the rural healthcare services. If this is implemented then remedial measures can be taken accordingly.

Table 5.29 SUMMARY OF THE HEALTH SITUATION OF RURAL PATIENTS

		FREQUECY OF ILLNESS IN THE FAMILY	ILLNESS STATUS IN LAST 14 DAYS	TYPE OF HEALTHCARE PROVIDER CONTACTED	LOCATION OF HEALTHCARE PROVIDER CONTACTED	STATUS OF THE ILLNESS TODAY	OPINION ABOUT THE SERVICES OF THE VILLAGE HC PROVIDER	IS THE PATIENT REFERRED TO OTHER PLACES	PATIENT REFERRAL TO OTHER SPECIALIST HOSPITALS OR DOCTORS	DURATION OF VISITING GOVERNMENT HOSPITAL	AWARENESS ABOUT PREVENTIVE HEALTHCARE PROGRAMS
N	Valid	400	400	400	400	400	400	400	400	400	400
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		2.98	1.10	3.41	3.29	1.73	4.50	1.18	4.89	3.36	1.90
Median		3.00	1.00	3.00	3.00	2.00	4.00	1.00	5.00	3.00	2.00
Mode		2	1	3	3	2	4	1	5	3	2
Mode Interpretation		Once a Month	Illness Persists	Village Doctor	PHC	Sick	Bad	Yes	Private Clinic	Since 2-5 Years	Not Aware
Sum		1192	439	1364	1317	693	1798	471	1955	1344	758

Table 5.29 provides a summary of the situation of rural healthcare. It has been observed that majority of the rural patient's fall sick once in a month and the illness persists for long. They contact the village doctor at the PHC to take the treatment yet the sickness persists and the patients opined that these services are bad at the healthcare facility which is the PHC. The patients also opined that they are referred to outside private clinic or healthcare facility due to lack of those services with them. The patients are availing the services of the PHC since 2-5 years and yet they are not aware of any preventive healthcare services.

5.2.7 Recommendation Of Rural Healthcare Facilities by patients Employees and Officers

Table 5.30 RECOMMENDING THE HOSPITAL TO FAMILY AND RELATIVES

		PATIENTS		EMPLOYEES		OFFICERS	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
	STRONGLY RECOMMEND	0	0	0	0	6	6.0
Valid	PROBABLY RECOMMEND	47	11.8	25	6.2	9	9.0
	DEFINITELY NOT RECOMMEND	353	88.2	375	93.8	85	85.0
	Total	400	100.0	400	100.0	100	100.0

Table 5.30 provides information about patients, employees and officers recommending the rural healthcare facility to family, friends and relatives. It has been found that 88.2 percent of patients and 93.8 percent of employees and 85 percent of officers definitely not recommend. Around 15 percent of the officers recommend and 11.8 percent of patients and 6.2 percent of employees probably recommend these services. It has been

observed that the majority of patients, employees and officers do not want to recommend to family friends and relatives.

5.2.7.1 Relationship between Patients Affordability and Recommendation of rural healthcare services to others

Table 5.31 AFFORDABILITY OF PATIENTS & BORROWED MONEY * RECOMMENDING THE HOSPITAL TO FAMILY AND RELATIVES * Finance Crosstabulation

Finance				RECOMMENDING THE HOSPITAL TO FAMILY AND RELATIVES		Total
				PROBABLY RECOMMEND	DEFINITELY NOT RECOMMEND	
Affordability	AFFORD-ABILITY OF PATIENTS	YES	Count	4	33	37
			% of Total	1.00%	8.20%	9.20%
		NO	Count	43	320	363
			% of Total	10.80%	80.00%	90.80%
	Total		Count	47	353	400
			% of Total	11.80%	88.20%	100.00%
Borrow money	AFFORD-ABILITY OF PATIENTS	YES	Count	47	353	400
			% of Total	11.80%	88.20%	100.00%
	Total		Count	47	353	400
			% of Total	11.80%	88.20%	100.00%

Table 5.31 provides information on how affordability of patient influences the rural patients recommending the healthcare facility to family friends and relatives. It has been observed that 90.80 percent of patients who can't afford the private clinic or referred facility charges and will definitely not recommend (88.20 percent). There are 100 percent of patients who borrowed money and out of them 88.20 percent of them will definitely not recommend. The patients who are non affording and who have borrowed money to pay for private clinic or hospital do not still recommend PHC. It is important to know the reasons why.

Table 5.32 LOAN REPAYMENT DURATION * RECOMMENDING THE HOSPITAL TO FAMILY AND RELATIVES Crosstabulation					
			RECOMMENDING THE HOSPITAL TO FAMILY AND RELATIVES		Total
			PROBABLY RECOMMEND	DEFINITELY NOT RECOMMEND	
LOAN REPAYMENT DURATION	3 - 6 YEARS	Count	10	59	69
		% of Total	2.5%	14.8%	17.2%
	MORE THAN 6 YEARS	Count	37	294	331
		% of Total	9.2%	73.5%	82.8%
Total		Count	47	353	400
		% of Total	11.8%	88.2%	100.0%

Table 5.32 provides information on patients who are repaying the loan are recommending the healthcare facility. It has been observed that 82.8 percent of the patients are taking more than 6 years to repay the loan and 73.5 percent of them do not definitely recommend the rural healthcare facility. It has also been found that 17.2 percent of patients who repay the loan within 3-6 years also opined that they will definitely not recommend (14.8 percent). It can be inferred that majority of them do not recommend rural healthcare facilities to family friends or relatives.

5.2.8 Awareness of Patients about State Insurance Schemes& Government Welfare Programs

Table 5.33 AWARENESS ON STATE INSURANCE SCHEMES AND GOVERNMENT WELFARE PROGRAMS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	36	9.0	9.0	9.0
	NO	364	91.0	91.0	100.0
	Total	400	100.0	100.0	

Table 5.33 provides the patients awareness levels of state insurance schemes or government welfare programs. It has been observed that 91 percent of the patients are not aware of state insurance schemes or government welfare programs and only 9 percent of them are aware of these schemes. The government needs to propagate the schemes to the public at large and focussed to rural population.

5.2.9 Satisfaction Of Patients, Employees & Officers About Rural Healthcare Facilities

Table 5.34 SATISFACTION OF PATIENTS, EMPLOYEES & OFFICERS ABOUT RURAL HEALTHCARE FACILITIES

		PATIENTS		EMPLOYEES		OFFICERS	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Valid	YES	15	3.8	89	22.2	26	26.0
	NO	385	96.2	311	77.8	74	74.0
	Total	400	100.0	400	100.0	100	100.0

Table 5.34 provides information regarding satisfaction of patients, employees and officers about rural healthcare facilities. It has been observed that 96.2 percent of patients, 77.8 percent of employees and 74 percent of officers are not satisfied about the rural healthcare facilities. Only a paltry 3.8 percent, 22.2 percent of employees and 26 percent of officers are satisfied with the rural healthcare services. Majority of the patients, employees and officers are not satisfied with the rural healthcare services.

5.2.10 Testing of Hypothesis

The healthcare infrastructure in the rural areas is a very vital component of healthcare delivery to the masses. Without the adequate infrastructure, delivery of healthcare is absolutely not possible. Therefore the governments spend lot of money by providing

budgetary allocations to rural healthcare for creating and maintaining the healthcare infrastructure.

For the purpose of this study the researcher has divided the infrastructure into three components such as equipment infrastructure, manpower infrastructure and financial infrastructure.

5.2.10.1 Rural Healthcare Equipment Infrastructure

The equipment infrastructure is related to medical equipment needed to provide healthcare services. Medical treatment is today heavily dependent on sophisticated equipment. Lack of this equipment leads to poor delivery of healthcare services and impacts the satisfaction levels of the patients and employees and officers.

Here the researcher would like to test the following research hypothesis:

H0: 'There's No significant relationship between the equipment infrastructure availability and the satisfaction of the patients, employees and officers'.

H1: 'There's a significant relationship between the equipment infrastructure availability and the satisfaction of the patients, employees and officers'.

To test the above hypothesis the researcher has administered three questions among which one is probing directly into the adequacy of medical equipment in the healthcare facility. The second question is dealing again directly with the laboratory which is not adequately equipped to perform the basic lab tests. The third question is an indirect question probing about patient being put through lot of expenses due to references to outside labs.

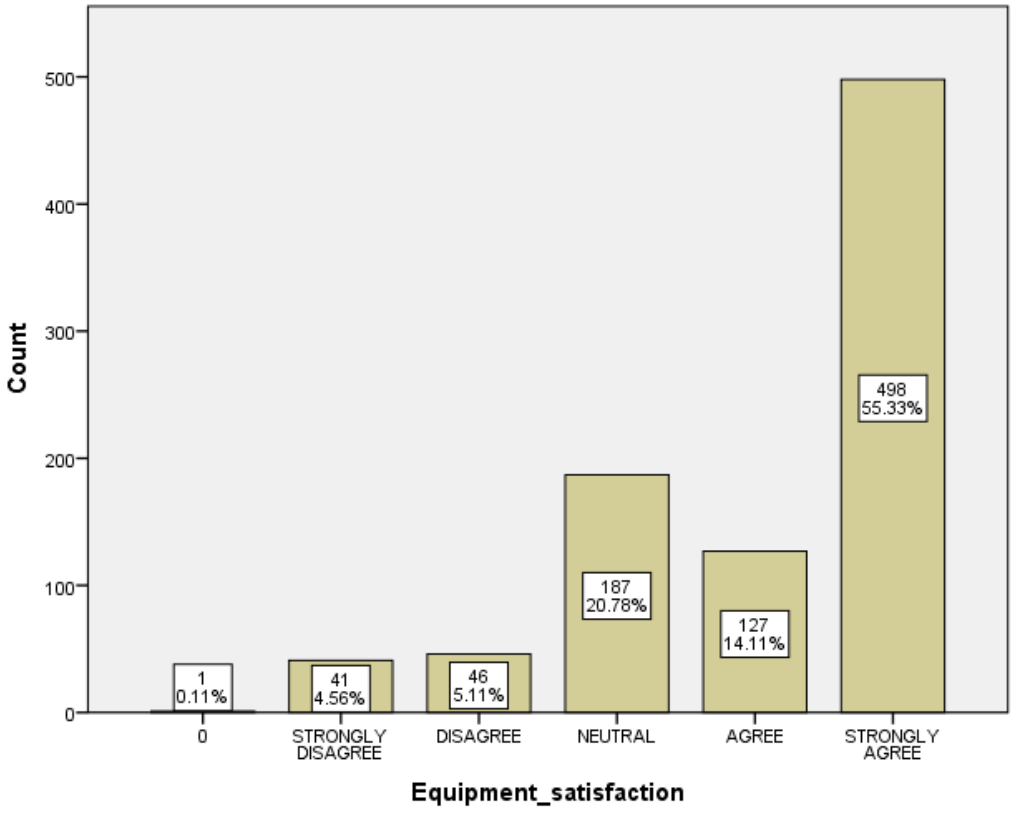
Further, the researcher shall conduct test of significance to test the hypothesis associated with each of these cases analyzed in the following section.

All the above three questions with its data are combined statistically together in SPSS and created a new variable 'inadequate equipment infrastructure in the healthcare facility' for hypothesis testing purpose with these responses (Refer Table 4.35).

Lets consider the response of the patients, employees and officers to the following instrument of the questionnaire probing satisfaction of rural healthcare services (Refer Appendix 3 Question No.22):

The data gathered is tabulated in the following graph and table.

RELATIONSHIP BETWEEN INADEQUATE EQUIPMENT INFRASTRUCTURE IN THE HEALTHCARE FACILITY V/S SATISFACTION



Inadequate Equipment Infrastructure in the Healthcare Facility

Table 5.35 Patients Opinion About Inadequate Equipment Infrastructure In The Healthcare Facility * Satisfaction Of Patients About Rural Hospitals

			SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS		Total
			YES	NO	
Patients opinion about Inadequate Equipment Infrastructure in the Healthcare Facility	NEUTRAL	Count	0	33	33
		% of Total	0.0%	8.2%	8.2%
	AGREE	Count	1	45	46
		% of Total	0.2%	11.2%	11.5%
	STRONGLY AGREE	Count	14	307	321
		% of Total	3.5%	76.8%	80.2%
Total		**Count**	**15**	**385**	**400**
		% of Total	**3.8%**	**96.2%**	**100.0%**
Employees opinion about Inadequate Equipment Infrastructure in the Healthcare Facility	STRONGLY DISAGREE	Count	6	31	37
		% of Total	1.5%	7.8%	9.2%
	DISAGREE	Count	11	31	42
		% of Total	2.8%	7.8%	10.5%
	NEUTRAL	Count	29	90	119
		% of Total	7.2%	22.5%	29.8%
	AGREE	Count	16	44	60
		% of Total	4.0%	11.0%	15.0%
	STRONGLY AGREE	Count	27	115	142
		% of Total	6.8%	28.7%	35.5%
Total		**Count**	**89**	**311**	**400**
		% of Total	**22.2%**	**77.8%**	**100.0%**
Officers opinion about Inadequate Equipment Infrastructure in the Healthcare Facility	STRONGLY DISAGREE	Count	2	2	4
		% of Total	2.0%	2.0%	4.0%
	DISAGREE	Count	0	4	4
		% of Total	0.0%	4.0%	4.0%
	NEUTRAL	Count	7	29	36
		% of Total	7.0%	29.0%	36.0%
	AGREE	Count	5	16	21
		% of Total	5.0%	16.0%	21.0%
	STRONGLY AGREE	Count	12	23	35
		% of Total	12.0%	23.0%	35.0%
Total		**Count**	**26**	**74**	**100**
		% of Total	**26.0%**	**74.0%**	**100.0%**
Everyone's opinion about Inadequate Equipment Infrastructure in the Healthcare Facility	STRONGLY DISAGREE	Count	8	33	41
		% of Total	0.9%	3.7%	4.6%
	DISAGREE	Count	11	35	46
		% of Total	1.2%	3.9%	5.1%
	NEUTRAL	Count	36	152	188
		% of Total	4.0%	16.9%	20.9%
	AGREE	Count	22	105	127
		% of Total	2.4%	11.7%	14.1%
	STRONGLY AGREE	Count	53	445	498
		% of Total	5.9%	49.4%	55.3%
Total		**Count**	**130**	**770**	**900**
		% of Total	**14.4%**	**85.6%**	**100.0%**

Table 5.36 Chi-Square Tests						
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	14.232[a]	4	.007	.007		
Likelihood Ratio	13.895	4	.008	.009		
Fisher's Exact Test	14.685			.005		
Linear-by-Linear Association	12.004[b]	1	.001	.001	.000	.000
N of Valid Cases	900					
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.92.						
b. The standardized statistic is 3.465.						

Table 5.35 provides information about how equipment infrastructure is influencing satisfaction of the patients, employees and officers. It is observed that 80.2 percent of patients strongly agree that equipment infrastructure is very much required for satisfaction. The researcher rather finds 76.8 percent of the patients are not satisfied because of lack of equipment infrastructure. These statistics prove that patient's satisfaction is significantly related to equipment infrastructure. It is observed that 50.5 percent of employees agree and strongly agree that equipment infrastructure is very much required for satisfaction. The researcher rather finds only 39.7 percent of the employees are not satisfied because of lack of equipment infrastructure. There are 29.8 percent of the employees who are neutral about need for equipment infrastructure for satisfaction. The employees maybe feel there are other factors that also determine satisfaction levels. It is observed that 56 percent of officers agree and strongly agree that equipment infrastructure is very much required for satisfaction. The researcher rather finds 39 percent of the officers are not satisfied because of lack of equipment infrastructure. There are 36 percent of the officers who are neutral about need for equipment infrastructure for satisfaction. The officers maybe feel there are other factors and not just adequate equipment that might determine satisfaction levels.

It is observed that 69.4 percent of patients, employees and officers strongly agree that equipment infrastructure is very much required for satisfaction. The researcher rather finds 61.1 percent of the patients, employees and officers are not satisfied because of lack of equipment infrastructure. There are 26 percent of the patients, employees and officers who are neutral about need for equipment infrastructure for satisfaction. The officers maybe feel there are other factors and not just adequate equipment that might determine satisfaction levels. Therefore other parameters are probed in the further section.

From the above Chi Square test the researcher concludes that There's a strong relationship between need of adequate equipment infrastructure and satisfaction.

So it may be concluded that **the Hypothesis** 'there's a significant relationship between the equipment infrastructure availability and the satisfaction of the patients, employees and officers' is **accepted or retained**.

and the **Null Hypothesis:**

There's no significant relationship between the equipment infrastructure availability and the satisfaction of the patients, employees and officers' is **rejected**.

Further, the researcher shall also see if Manpower infrastructure has any influence on the patient, officer and employee satisfaction.

5.2.10.2 Rural Healthcare Manpower Infrastructure

The Manpower infrastructure is related to the medical personnel needed to provide healthcare services. Medical treatment is today heavily dependent on skilful and qualified personnel. Lack of this qualitative staff leads to poor delivery of healthcare services and impacts the satisfaction levels of the patients and employees and officers.

Here the researcher would like to test the following research hypothesis:

H0: 'There's No significant relationship between the rural healthcare manpower infrastructure availability and the satisfaction of the patients, employees and officers'.

H1: 'There's a significant relationship between the rural healthcare manpower infrastructure availability and the satisfaction of the patients, employees and officers'.

To test the above hypothesis the researcher has administered four questions among which one is probing directly into the inadequacy of medical staff in the healthcare facility. The second is dealing again directly with the insufficient number of doctors. The third question is an indirect question probing about staff referring patients outside due to lack of doctors and staff. The fourth question is again an indirect question on patients can trust what the staff and doctors say.

Further, the researcher will conduct test of significance to test the hypothesis associated with each of these cases analyzed in the following section.

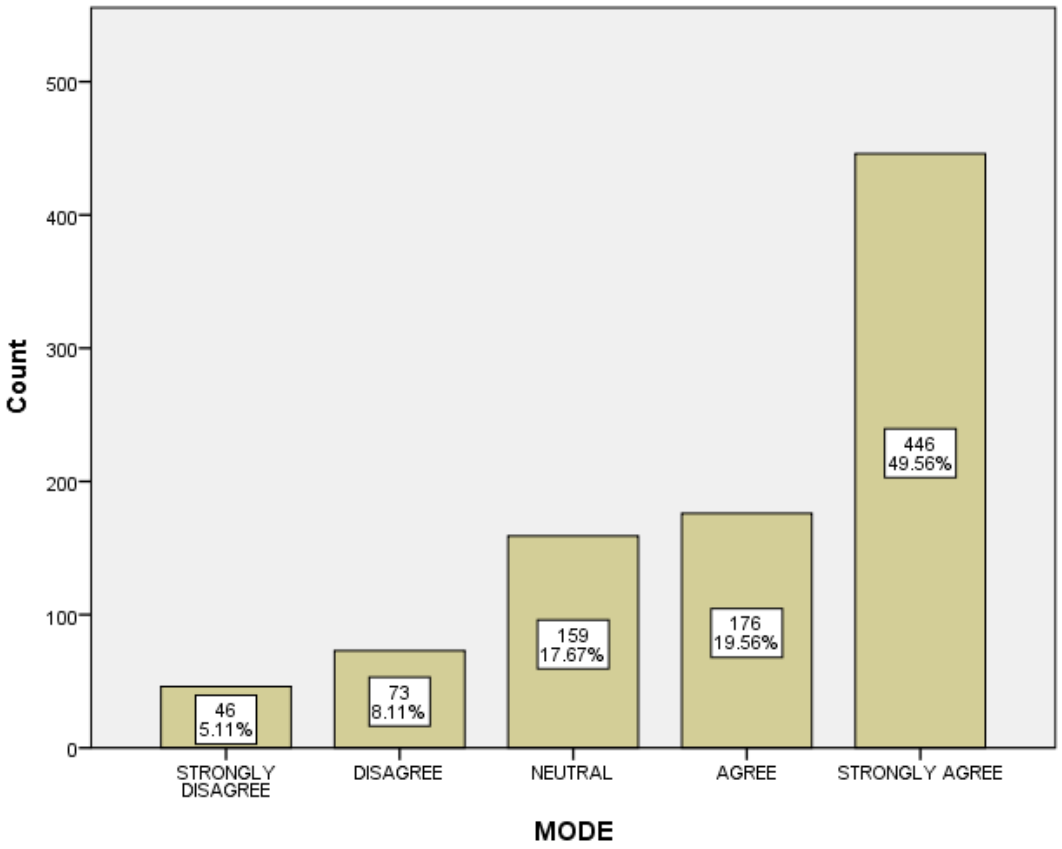
First, the researcher shall consider the response of the patients, employees and officers to the following instrument of the questionnaire probing adequacy of manpower infrastructure in the rural healthcare facility (Refer Appendix 3 Question No.22):

All the above three questions with its data are combined statistically together in SPSS and created a new variable 'inadequacy and incompetency of manpower infrastructure in the healthcare facility' for hypothesis testing purpose. It has the following responses to be chosen (Refer Table 4.37).

The researcher shall again consider the response of the patients, employees and officers to the following instrument of the questionnaire probing satisfaction of rural healthcare services (Refer Appendix 3 Question No.22):

Summary of responses to the question is tabulated in the following graph and table.

RELATIONSHIP BETWEEN INADEQUACY & COMPETENCY OF HEALTHCARE STAFF V/S SATISFACTION



INADEQUACY & COMPETENCY OF HEALTHCARE STAFF

Table 5.37 INADEQUACY & COMPETENCYOF HEALTHCARE STAFF * SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS * Group Crosstabulation						
Group				**SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS**		**Total**
				YES	**NO**	
Patients	Inadequacy & Competency of Healthcare Staff	NEUTRAL	Count	2	33	35
			% of Total	0.5%	8.2%	8.8%
		AGREE	Count	2	46	48
			% of Total	0.5%	11.5%	12.0%
		STRONGLY AGREE	Count	11	306	317
			% of Total	2.8%	76.5%	79.2%
	Total		**Count**	**15**	**385**	**400**
			% of Total	**3.8%**	**96.2%**	**100.0%**
Employees	Inadequacy & Competency of Healthcare Staff	STRONGLY DISAGREE	Count	5	32	37
			% of Total	1.2%	8.0%	9.2%
		DISAGREE	Count	14	50	64
			% of Total	3.5%	12.5%	16.0%
		NEUTRAL	Count	28	70	98
			% of Total	7.0%	17.5%	24.5%
		AGREE	Count	24	86	110
			% of Total	6.0%	21.5%	27.5%
		STRONGLY AGREE	Count	18	73	91
			% of Total	4.5%	18.2%	22.8%
	Total		**Count**	**89**	**311**	**400**
			% of Total	**22.2%**	**77.8%**	**100.0%**
Officers	Inadequacy & Competency of Healthcare Staff	STRONGLY DISAGREE	Count	2	7	9
			% of Total	2.0%	7.0%	9.0%
		DISAGREE	Count	3	6	9
			% of Total	3.0%	6.0%	9.0%
		NEUTRAL	Count	7	19	26
			% of Total	7.0%	19.0%	26.0%
		AGREE	Count	4	14	18
			% of Total	4.0%	14.0%	18.0%
		STRONGLY AGREE	Count	10	28	38
			% of Total	10.0%	28.0%	38.0%
	Total		**Count**	**26**	**74**	**100**
			% of Total	**26.0%**	**74.0%**	**100.0%**
Total	Inadequacy & Competency of Healthcare Staff	STRONGLY DISAGREE	Count	7	39	46
			% of Total	0.8%	4.3%	5.1%
		DISAGREE	Count	17	56	73
			% of Total	1.9%	6.2%	8.1%
		NEUTRAL	Count	37	122	159
			% of Total	4.1%	13.6%	17.7%
		AGREE	Count	30	146	176
			% of Total	3.3%	16.2%	19.6%
		STRONGLY AGREE	Count	39	407	446
			% of Total	4.3%	45.2%	49.6%
	Total		**Count**	**130**	**770**	**900**
			% of Total	**14.4%**	**85.6%**	**100.0%**

Table 5.38 Chi-Square Tests						
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	27.354[a]	4	.000	.000		
Likelihood Ratio	27.037	4	.000	.000		
Fisher's Exact Test	27.562			.000		
Linear-by-Linear Association	17.603[b]	1	.000	.000	.000	.000
N of Valid Cases	900					
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.64.						
b. The standardized statistic is 4.196.						

Table 5.37 provides information about how manpower infrastructure is influencing satisfaction of the patients, employees and officers. It is observed that 79.2 percent of patients strongly agree that inadequacy and incompetency of Healthcare Staff is very much related to satisfaction. The researcher rather finds 76.5 percent of the patients are not satisfied because of inadequacy and incompetency of healthcare staff. These statistics prove that patient's satisfaction is significantly related to inadequacy and incompetency of healthcare staff. It is observed that 50.3 percent of employees agree and strongly agree that inadequacy and incompetency of healthcare staff is very much related to satisfaction. The researcher rather finds 39.7 percent of the employees are not satisfied because of inadequacy and incompetency of healthcare staff. There are 17.5 percent of the employees who are neutral about need for adequate and competent healthcare staff for satisfaction. The employees may feel there are other factors that also determine satisfaction levels. It is observed that 56 percent of officers agree and strongly agree that inadequacy and incompetency of healthcare staff is related to satisfaction. The researcher rather finds 42 percent of the officers are not satisfied because of inadequacy and incompetency of healthcare staff. There are 19 percent of the officers who are neutral about inadequacy and incompetency of healthcare staff towards satisfaction. The officers maybe feeling there are other factors and not just adequate competent manpower that might determine satisfaction levels.

It is observed that 69.2 percent of patients, employees and officers strongly agree that inadequacy and incompetency of healthcare staff is very much related to satisfaction. The researcher rather finds 61.4 percent of the patients, employees and officers are not satisfied because of inadequacy and incompetency of healthcare staff. There are 13.6 percent of the patients, employees and officers who are neutral about need for adequate and competent healthcare staff for satisfaction. The officers maybe feeling there are other factors and not just adequate and competent healthcare staff that might determine satisfaction levels. Therefore other parameters are probed in the further section.

From the above Chi Square test the researcher concludes that there's a strong relationship between the need of adequate and competent healthcare staff for satisfaction.

So it may be concluded that **The Hypothesis** 'There's a significant relationship between the inadequacy and incompetency of healthcare staff and the satisfaction of the patients, employees and officers' is accepted or retained.

and the **Null Hypothesis**:

'There's no significant relationship between the inadequacy and incompetency of healthcare staff and the satisfaction of the patients, employees and officers' is rejected.

Further the researcher shall also see if Financial infrastructure has any influence on the satisfaction.

5.2.10.3 Rural Healthcare Financial Infrastructure

The financial infrastructure is related to the money required to maintain and provide healthcare services. Medical treatment is today heavily dependent on finances required for managing healthcare infrastructure. Lack of this finances leads to poor delivery of

healthcare services and impacts the satisfaction levels of the patients and employees and officers.

Here the researcher would like to test the following **research hypothesis**:

H0: 'There's No significant relationship between the rural healthcare financial infrastructure availability and the satisfaction of the patients, employees and officers'.

H1: 'There's a significant relationship between the rural healthcare financial infrastructure availability and the satisfaction of the patients, employees and officers'.

To test the above hypothesis the researcher has administered three questions among which one is probing directly into the inadequacy financial resources because of which patients can't avail pharmacy services. The second is dealing again directly with the insufficient funds sanctioned for the healthcare facility. The third question is again a direct question probing disparity of healthcare resources for rural healthcare facility.

Further, the researcher shall conduct test of significance to test the hypothesis associated with each of these cases analyzed in the following section.

First, the researcher shall consider the response of the patients, employees and officers to the following instrument of the questionnaire probing inadequate financial infrastructure in the rural healthcare facility (Refer Appendix 3 Question No.22):

All the above three questions with its data are combined statistically together in SPSS and created a new variable 'inadequate financial infrastructure allocation for the healthcare facilities' for hypothesis testing purpose. It has the following responses to be chosen (Refer Table 4.39).

The researcher shall again consider the response of the patients, employees and officers to the following instrument of the questionnaire probing satisfaction of rural healthcare services (Refer Appendix 3 Question No.22):

Summary of response to the question is tabulated in the following graph and table (Figure Table).

RELATIONSHIP BETWEEN INADEQUATE FINANCIAL INFRASTRUCTURE IN THE HEALTHCARE FACILITY V/S SATISFACTION

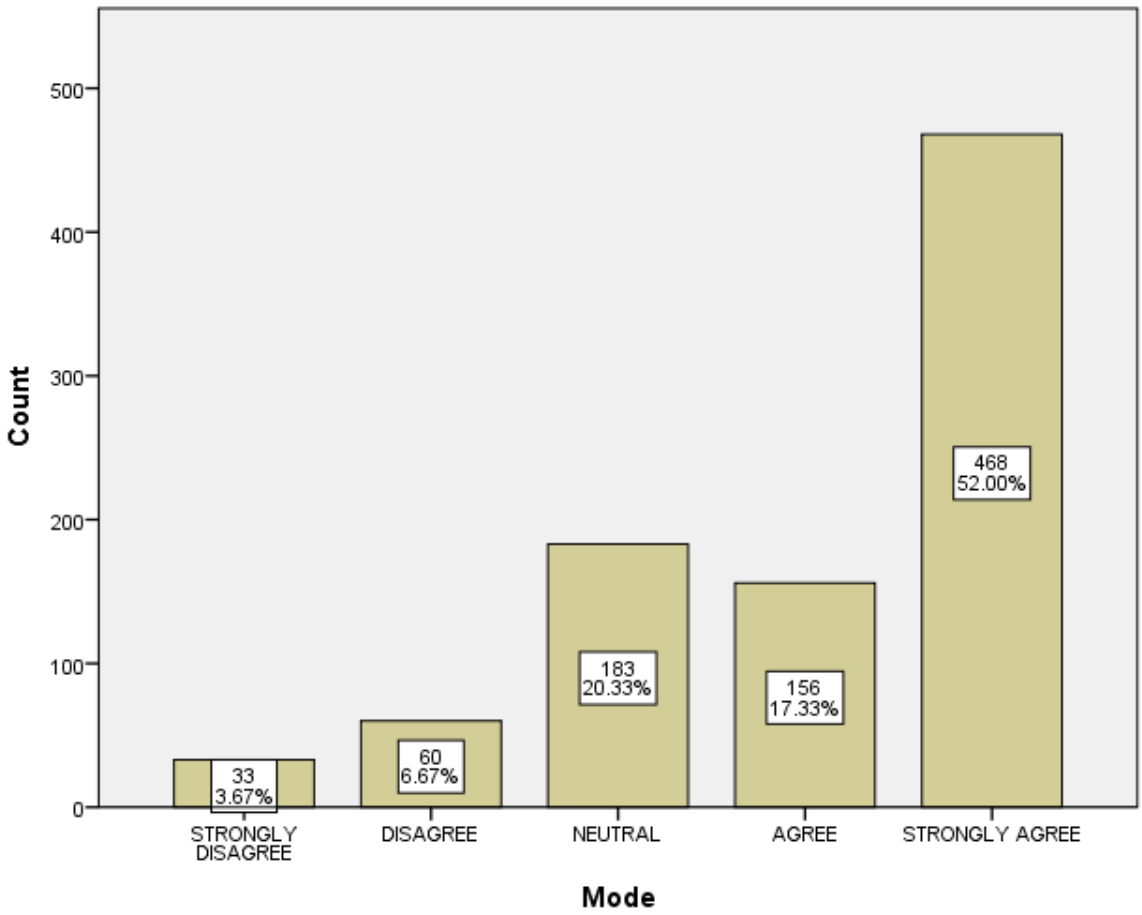


Table 5.39 INADEQUATE FINANCIAL INFRASTRUCTURE IN THE HEALTHCARE FACILITY * SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS * Group Crosstabulation

Group				SATISFACTION OF PATIENTS ABOUT RURAL HOSPITALS		Total
				YES	NO	
Patients	Inadequate Financial Infrastructure in the Healthcare Facility	STRONGLY DISAGREE	Count	0	1	1
			% of Total	0.0%	0.2%	0.2%
		NEUTRAL	Count	2	42	44
			% of Total	0.5%	10.5%	11.0%
		AGREE	Count	1	41	42
			% of Total	0.2%	10.2%	10.5%
		STRONGLY AGREE	Count	12	301	313
			% of Total	3.0%	75.2%	78.2%
	Total		**Count**	**15**	**385**	**400**
			% of Total	**3.8%**	**96.2%**	**100.0%**
Employees	Inadequate Financial Infrastructure in the Healthcare Facility	STRONGLY DISAGREE	Count	4	25	29
			% of Total	1.0%	6.2%	7.2%
		DISAGREE	Count	11	45	56
			% of Total	2.8%	11.2%	14.0%
		NEUTRAL	Count	28	79	107
			% of Total	7.0%	19.8%	26.8%
		AGREE	Count	22	75	97
			% of Total	5.5%	18.8%	24.2%
		STRONGLY AGREE	Count	24	87	111
			% of Total	6.0%	21.8%	27.8%
	Total		**Count**	**89**	**311**	**400**
			% of Total	**22.2%**	**77.8%**	**100.0%**
Officers	Inadequate Financial Infrastructure in the Healthcare Facility	STRONGLY DISAGREE	Count	1	2	3
			% of Total	1.0%	2.0%	3.0%
		DISAGREE	Count	2	2	4
			% of Total	2.0%	2.0%	4.0%
		NEUTRAL	Count	7	25	32
			% of Total	7.0%	25.0%	32.0%
		AGREE	Count	3	14	17
			% of Total	3.0%	14.0%	17.0%
		STRONGLY AGREE	Count	13	31	44
			% of Total	13.0%	31.0%	44.0%
	Total		**Count**	**26**	**74**	**100**
			% of Total	**26.0%**	**74.0%**	**100.0%**
Total	Inadequate Financial Infrastructure in the Healthcare Facility	STRONGLY DISAGREE	Count	5	28	33
			% of Total	0.6%	3.1%	3.7%
		DISAGREE	Count	13	47	60
			% of Total	1.4%	5.2%	6.7%
		NEUTRAL	Count	37	146	183
			% of Total	4.1%	16.2%	20.3%
		AGREE	Count	26	130	156
			% of Total	2.9%	14.4%	17.3%
		STRONGLY AGREE	Count	49	419	468
			% of Total	5.4%	46.6%	52.0%
	Total		**Count**	**130**	**770**	**900**
			% of Total	**14.4%**	**85.6%**	**100.0%**

Table 5.40 Chi-Square Tests						
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	14.088[a]	4	.007	.007		
Likelihood Ratio	13.862	4	.008	.009		
Fisher's Exact Test	14.387			.005		
Linear-by-Linear Association	10.144[b]	1	.001	.002	.001	.000
N of Valid Cases	900					
a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.77.						
b. The standardized statistic is 3.185.						

Table 5.39 provides information about how inadequate financial infrastructure is influencing satisfaction of the patients, employees and officers. It is observed that 78.2 percent of patients strongly agree that inadequate financial infrastructure is very much related to satisfaction. The researcher rather finds 75.2 percent of the patients are not satisfied because of inadequate financial infrastructure. These statistics prove that patient's satisfaction is significantly related to inadequate financial infrastructure. It is observed that 52 percent of employees agree and strongly agree that inadequate financial infrastructure is very much related to satisfaction. The researcher rather finds 40.6 percent of the employees are not satisfied because of inadequate financial infrastructure. There are 19.8 percent of the employees who are neutral about inadequate financial infrastructure and its relation to satisfaction. It is observed that 61 percent of officers agree and strongly agree that inadequate financial infrastructure is related to satisfaction. The researcher rather finds 45 percent of the officers are not satisfied because of inadequate financial infrastructure. There are 25 percent of the officers who are neutral about inadequate financial infrastructure and its relation to satisfaction.

It is observed that 69.3 percent of patients, employees and officers strongly agree and agree that inadequate financial infrastructure is very much related to satisfaction. The researcher rather finds 61 percent of the patients, employees and officers are not satisfied because of inadequate financial infrastructure. There are 16.2 percent of the patients, employees and officers who are neutral about inadequate financial infrastructure in relation to satisfaction.

From the above Chi Square test the researcher concludes that there's a strong relationship between the inadequate financial infrastructure in relation to satisfaction.
So it may be concluded that **The Hypothesis** 'There's a significant relationship between the inadequate financial infrastructure and the satisfaction of the patients, employees and officers' is accepted or retained.

and the **Null Hypothesis**:
H0: 'There's no significant relationship between the inadequate financial infrastructure and the satisfaction of the patients, employees and officers' is rejected.

5.2.11 Relationship between Authority given to employees to make decisions and their Job Security

Table 5.41 AUTHORITY IS GIVEN TO EMPLOYEES FOR TAKING DECISIONS * THE EMPLOYEES FEEL THERE IS JOB SECURITY IN PLACE OF WORK * Accountability Crosstabulation

Authority				THE EMPLOYEES FEEL THERE IS JOB SECURITY IN PLACE OF WORK					Total
				STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	
Decision _Auth	AUTHORITY IS GIVEN TO EMPLOYEES FOR TAKING DECISIONS	STRONGLY DISAGREE	Count	2	7	10	18	71	108
			% of Total	0.5%	1.8%	2.5%	4.5%	17.8%	27.0%
		DISAGREE	Count	26	19	55	64	128	292
			% of Total	6.5%	4.8%	13.8%	16.0%	32.0%	73.0%
	Total		Count	28	26	65	82	199	400
			% of Total	7.0%	6.5%	16.2%	20.5%	49.8%	100.0%
Informed _Dec	AUTHORITY IS GIVEN TO EMPLOYEES FOR TAKING DECISIONS	STRONGLY DISAGREE	Count	15	14	44	34	73	180
			% of Total	3.8%	3.5%	11.0%	8.5%	18.2%	45.0%
		DISAGREE	Count	9	11	10	27	62	119
			% of Total	2.2%	2.8%	2.5%	6.8%	15.5%	29.8%
		NEUTRAL	Count	4	1	11	21	64	101
			% of Total	1.0%	0.2%	2.8%	5.2%	16.0%	25.2%
	Total		Count	28	26	65	82	199	400
			% of Total	7.0%	6.5%	16.2%	20.5%	49.8%	100.0%
Total	AUTHORITY IS GIVEN TO EMPLOYEES FOR TAKING DECISIONS	STRONGLY DISAGREE	Count	17	21	54	52	144	288
			% of Total	2.1%	2.6%	6.8%	6.5%	18.0%	36.0%
		DISAGREE	Count	35	30	65	91	190	411
			% of Total	4.4%	3.8%	8.1%	11.4%	23.8%	51.4%
		NEUTRAL	Count	4	1	11	21	64	101
			% of Total	0.5%	0.1%	1.4%	2.6%	8.0%	12.6%
	Total		Count	56	52	130	164	398	800
			% of Total	7.0%	6.5%	16.2%	20.5%	49.8%	100.0%

Table 5.41 provides information of relationship between employees given authority to make decisions and job security. It also provides information on relationship between informed decision making and job security. It has been observed that 73 percent disagree and 27 percent strongly disagree that they have the authority to take decisions when needed. All the 100 percent staff doesn't have the authority to make decisions when needed. There are a majority of 70.3 percent staff agree and strongly agree that there's job security for them and therefore informed decisions are not taken. It's also found that 74.8 percent of staff strongly disagree or disagree that the supervisor takes the employees feedback before making an important decision. This shows there's lack of

participative management and lack of informed decisions. It's observed that 70.3 percent employees feel there's job security and therefore informed decisions are not taken. It's also observed that 87.4 percent of employees disagree and strongly disagree that they are given the authority to make decisions when needed.

5.2.12 Status of Supervision Over Employees by the officers

Table 5.42 THERE ARE REGULAR VISITS BY OFFICERS TO MONITOR THE HOSPITAL FUNCTIONING * THE EMPLOYEES FEEL THERE IS JOB SECURITY IN PLACE OF WORK Crosstabulation

			THE EMPLOYEES FEEL THERE IS JOB SECURITY IN PLACE OF WORK					Total
			STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	
THERE ARE REGULAR VISITS BY OFFICERS TO MONITOR THE HOSPITAL FUNCTIONING	ONCE A WEEK	Count	1	1	4	4	18	28
		% of Total	0.2%	0.2%	1.0%	1.0%	4.5%	7.0%
	ONCE A MONTH	Count	4	5	13	11	38	71
		% of Total	1.0%	1.2%	3.2%	2.8%	9.5%	17.8%
	TWICE A MONTH	Count	7	12	26	21	39	105
		% of Total	1.8%	3.0%	6.5%	5.2%	9.8%	26.2%
	ONCE IN SIX MONTHS	Count	12	7	20	37	69	145
		% of Total	3.0%	1.8%	5.0%	9.2%	17.2%	36.2%
	NEVER	Count	4	1	2	9	35	51
		% of Total	1.0%	0.2%	0.5%	2.2%	8.8%	12.8%
Total		Count	28	26	65	82	199	400
		% of Total	7.0%	6.5%	16.2%	20.5%	49.8%	100.0%

Table 5.42 provides information on the supervision over employees and job security at work place. It has been observed that there are 36.2 percent employees feel the officers come once in six months for supervision and 26.2 percent feel there's supervision twice a month. It's also observed that 24.8 percent staff feel there's monthly and weekly supervision. It can be inferred that There's regular supervision of the rural healthcare services. It's also observed that 70.3 percent of the employees feel there's job security.

5.2.12.1 Relationship between Supervision by Officers and Their Job Security

Table 5.43 FREQUENCY OF OFFICER VISIT TO MONITOR THE HEALTHCARE WORK * THERE IS GOOD JOB SECURITY FOR HEALTHCARE OFFICERS Crosstabulation

			THERE IS GOOD JOB SECURITY FOR HEALTHCARE OFFICERS					
			STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	Total
FREQUENCY OF OFFICER VISIT TO MONITOR THE HEALTHCARE WORK	ONCE A WEEK	Count	0	0	1	0	10	11
		% of Total	0.0%	0.0%	1.0%	0.0%	10.0%	11.0%
	ONCE A MONTH	Count	0	0	0	1	13	14
		% of Total	0.0%	0.0%	0.0%	1.0%	13.0%	14.0%
	TWICE A MONTH	Count	1	0	0	8	12	21
		% of Total	1.0%	0.0%	0.0%	8.0%	12.0%	21.0%
	ONCE IN SIX MONTHS	Count	0	1	3	11	18	33
		% of Total	0.0%	1.0%	3.0%	11.0%	18.0%	33.0%
	NEVER	Count	0	0	2	3	16	21
		% of Total	0.0%	0.0%	2.0%	3.0%	16.0%	21.0%
Total		Count	1	1	6	23	69	100
		% of Total	1.0%	1.0%	6.0%	23.0%	69.0%	100.0%

Table 5.43 provides information about the frequency of officer's visit to healthcare facilities for supervision and monitoring. It has been observed that 33 percent of the officers visit once in six months and 21 percent twice in a month and 25 percent monthly and weekly to monitor healthcare facilities. There are only 21 percent of officers who opined that they never go even once for monitoring and supervising the rural healthcare facilities. It can be inferred that 79 percent of officers agree that they go for supervision and monitoring of rural healthcare services. There are 92 percent of the officers who strongly agree and agree that they have job security.

5.2.13 Status Of Feedback From Employees & Officers For Yearly Planning & Budgeting

Table 5.44 STATUS OF FEEDBACK FROM EMPLOYEES & OFFICERS FOR YEARLY PLANNING & BUDGETING OF HEALTHCARE FACILITY

		Officers		Employees	
		Frequency	Percent	Frequency	Percent
Valid	Once a Month	1	1.0	201	50.2
	Twice a Month	4	4.0	0	0
	Once in Six Months	4	4.0	0	0
	NEVER	91	91.0	199	49.8
	Total	100	100.0	100.0	100.0

Table 5.44 provides information on the feedback taken from officers and employees for planning and budgeting of the healthcare facilities. It has been observed that the 50.2 percent employees give feedback for the yearly planning and budgeting of the healthcare facility but 49.8 percent of the employees feel there's never a feedback taken. In the case of 91 percent of the officers feedback is never taken from employees for yearly planning and budgeting.

5.2.14 Confidence Of Employees & Officers On The Government About Improving Rural Health Care Services

Table 5.45 CONFIDENCE OF EMPLOYEES & OFFICERS ON THE GOVERNMENT ABOUT IMPROVING RURAL HEALTH CARE SERVICES

		EMPLOYEES		OFFICERS	
		Frequency	Percent	Frequency	Percent
Valid	STRONGLY DISAGREE	132	33.0	5	5
	DISAGREE	184	46.0	3	3
	NEUTRAL	56	14.0	21	21
	AGREE	28	7.0	37	37
	STRONGLY AGREE	0	0.0	34	34
	Total	400	100.0	100	100

Table 5.45 provides information the confidence the employees and officers have on the government that it will improve rural healthcare services. It is observed that 46 percent and 33 percent of the employees disagree and strongly disagree that government will improve rural healthcare services. A majority of 79 percent don't have the confidence on the government that it will improve rural healthcare services. There are 37 percent and 34 percent (71 percent) of officers who agree and strongly agree that government will improve things. Only 8 percent disagree and 21 percent are neutral without any opinion. It can be inferred that employees do not have confidence on the government whereas officers have the confidence that it will improve the rural healthcare services.

Table 5.46 DECISION_AUTH * THERE IS GOOD JOB SECURITY FOR HEALTHCARE OFFICERS * Group Crosstabulation									
Group				THERE IS GOOD JOB SECURITY FOR HEALTHCARE OFFICERS					Total
				STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	
DECISION_AUTH		STRONGLY DISAGREE	Count	0	0	0	1	2	3
			% of Total	0.0%	0.0%	0.0%	1.0%	2.0%	3.0%
		DISAGREE	Count	0	0	0	2	4	6
			% of Total	0.0%	0.0%	0.0%	2.0%	4.0%	6.0%
		NEUTRAL	Count	1	0	1	4	12	18
			% of Total	1.0%	0.0%	1.0%	4.0%	12.0%	18.0%
		AGREE	Count	0	0	1	4	17	22
			% of Total	0.0%	0.0%	1.0%	4.0%	17.0%	22.0%
		STRONGLY AGREE	Count	0	1	4	12	34	51
			% of Total	0.0%	1.0%	4.0%	12.0%	34.0%	51.0%
	Total		Count	1	1	6	23	69	100
			% of Total	1.0%	1.0%	6.0%	23.0%	69.0%	100.0%
INFORMED_DEC		STRONGLY DISAGREE	Count	1	0	3	9	17	30
			% of Total	1.0%	0.0%	3.0%	9.0%	17.0%	30.0%
		DISAGREE	Count	0	1	0	4	20	25
			% of Total	0.0%	1.0%	0.0%	4.0%	20.0%	25.0%
		NEUTRAL	Count	0	0	2	6	25	33
			% of Total	0.0%	0.0%	2.0%	6.0%	25.0%	33.0%
		AGREE	Count	0	0	1	4	7	12
			% of Total	0.0%	0.0%	1.0%	4.0%	7.0%	12.0%
	Total		Count	1	1	6	23	69	100
			% of Total	1.0%	1.0%	6.0%	23.0%	69.0%	100.0%

Table 5.46 provides information on the relationship between officers is given authority to take decisions and job security. It also provides information about officers taking feedback from employees to make informed decisions. It is observed that 73 percent of the officers strongly agree and agree that they have the authority to make decisions. They also strongly disagree and disagree (55 percent) that they take feedback from employees before making the decisions. There are 92 percent of the officers who strongly agree and agree that they have job security because of which maybe feedback is not taken from employees before making a decision.

5.2.15 Employees And Officers Likeness Of The Job They Perform

Table 5.47 EMPLOYEES AND OFFICERS LIKENESS OF THE JOB THEY PERFORM				
	EMPLOYEES		**OFFICERS**	
	Frequency	Percentage	Frequency	Percentage
STRONGLY DISAGREE	67	16.80%	13	13%
DISAGREE	246	61.50%	63	63%
NEUTRAL	20	5%	7	7%
AGREE	22	5.50%	17	17%
STRONGLY AGREE	45	11.30%	0	0
Total	400	100%	100	100%

Table 5.47 provides information of the employees and officers likeness of the job they perform daily. It has been observed that 61 percent of the employees and 63 percent of the officers disagree that they like their jobs. They are not enjoying their work. only 16.80 percent of employees and 17 percent of the officers agree and strongly agree that they like their job. The researcher can infer that majority of the employees and officers do not enjoy performing their respective jobs due to the work environment and only a paltry 16-17 percent of them like their jobs.

5.2.16 Relationship between Employees Recommendation and Satisfaction of Rural Hospitals Services

Table 5.48 THE EMPLOYEES RECOMMEND THE RURAL HOSPITALS TO THEIR FAMILY AND RELATIVES * SATISFIED ABOUT THE FUNCTIONING OF RURAL HOSPITALS * Group Cross Tabulation

Group				SATISFIED ABOUT THE FUNCTIONING OF RURAL HOSPITALS		Total
				YES	NO	
Employees	THE EMPLOYEES RECOMMEND THE RURAL HOSPITALS TO THEIR FAMILY AND RELATIVES	PROBABLY RECOMMEND	Count	4	21	25
			% of Total	1.0%	5.3%	6.3%
		DEFINITELY NOT RECOMMEND	Count	85	290	375
			% of Total	21.3%	72.5%	93.8%
	Total		Count	89	311	400
			% of Total	22.3%	77.8%	100.0%
Officers	THE EMPLOYEES RECOMMEND THE RURAL HOSPITALS TO THEIR FAMILY AND RELATIVES	STRONGLY RECOMMEND	Count	1	5	6
			% of Total	1.0%	5.0%	6.0%
		PROBABLY RECOMMEND	Count	1	8	9
			% of Total	1.0%	8.0%	9.0%
		DEFINITELY NOT RECOMMEND	Count	24	61	85
			% of Total	24.0%	61.0%	85.0%
	Total		Count	26	74	100
			% of Total	26.0%	74.0%	100.0%
Total	THE EMPLOYEES RECOMMEND THE RURAL HOSPITALS TO THEIR FAMILY AND RELATIVES	STRONGLY RECOMMEND	Count	1	5	6
			% of Total	0.2%	1.0%	1.2%
		PROBABLY RECOMMEND	Count	5	29	34
			% of Total	1.0%	5.8%	6.8%
		DEFINITELY NOT RECOMMEND	Count	109	351	460
			% of Total	21.8%	70.2%	92.0%
	Total		Count	115	385	500
			% of Total	23.0%	77.0%	100.0%

Table 5.48 provides information on the relationship between satisfaction of rural healthcare services and status of recommending their services. It has been observed that

93.8 percent of employees do not recommend and 77.8 percent of them are not satisfied about rural healthcare facilities. It's also found that 85 percent of the officers would definitely not recommend and 74 percent of them are not satisfied with rural healthcare facilities. Both the employees and officers (92 percent) do not recommend and there are 74 percent of them who are not satisfied with the rural healthcare services. In conclusion majority of the employees and officers do not recommend rural healthcare facilities as they are not satisfied with their services.

CHAPTER – 6

FINDINGS, CONCLUSIONS AND SUGGESTIONS

6.1 Introduction

The analysis of data has given a few major findings and conclusions which will be enumerated here. Using this data a few suggestions will be listed down to improve the rural healthcare scenario. The researcher has designed three questionnaires to highlight the scenario of rural healthcare services. All the respondents i.e. Patients, employees and officers related to this sector are covered. The collected data has been collated and analyzed. This chapter covers the major findings, conclusions of the study. Some suggestions and scope for further research is also enumerated.

6.2 Findings

6.2.1 Findings from Profile of the Sample study

- Majority of patients and officers are matured of age and have responded well to the questionnaire whereas the majority of employees are relatively younger and will be working in the rural healthcare system for a long time. There is a good balance between the male and female ratio among the patients and employees whereas among the officers we find more of males are respondents compared to females. This phenomenon of more males, maybe because the officers need to do extensive travelling in rural areas and therefore warrants a male person to work in the category of an officer.
- The total respondents of this survey are married and have two children. These patients will require maternal and child care services which are provided by the rural healthcare facilities. The respondents have a greater family responsibility in

caring for the spouse and two children. More the number of children, higher will be the levels of responsibility on the spouse and vice versa.

- The majority of patients are not so well educated and studied below 10^{th} standard. They are daily wage laborers earning less than Rs. 20,000 and are having the responsibility of managing their whole family. They don't own any assets such as cycle, TV, tube well or even a sanitary latrine. This data correlates to their educational status, income level and occupation type. It's been inferred that the respondents are socio-economically backward and are mostly below poverty line.

6.2.2 Findings on the impact of inadequate rural healthcare facilities in Surat district

- Majority of the patients are utilizing rural healthcare services since 2-5 years. The Patients who use the rural healthcare facility since long are well experienced about all challenges and difficulties faced by them.
- It's found that majority of 56.6 percent of the employees are working since 2 years to 10 years in the rural healthcare system. It's also observed that there are 44 percent of employees who are working since less than two years. Employees working in the rural healthcare facility are aware of the challenges faced by them and the difficulties patients undergo.
- Majority of the officers are working in rural healthcare since more than 10 years. The longer the duration of working with rural healthcare better is the knowledge and vice versa. Therefore its presumed that the data gathered from officers shows reliability and authenticity.
- The patients are availing the services of the PHC since 2-5 years. Majority of the rural patient's fall sick once in a month and the illness persists for long. They contact the village doctor at the PHC to take the treatment, yet the sickness

persists and the patients opined that these services are bad at the healthcare facility. Sometimes they are referred to outside private clinic or healthcare facility due to lack of those services with them. The patients are not aware of any preventive healthcare services.

- In spite of the affordability issues and financial borrowing it has been observed that patients are not satisfied with rural healthcare services and are therefore going to private healthcare facilities.
- It has been observed that 82.8 percent of the patients take more than six years to repay the loan they made for availing private healthcare facilities. yet they are not having satisfaction (96.2 percent) of rural healthcare services.

6.2.3 Findings on the relationship between rural healthcare facilities and satisfaction levels.

- Majority of **patients** strongly agree that equipment infrastructure is very vital and is an important determinant for satisfaction towards rural healthcare services. It has been observed that 76.8 percent of the patients are not satisfied with the rural healthcare because of lack of equipment infrastructure.
- Half of the **employees** agree and rather strongly agree, equipment infrastructure is required for providing satisfaction. It has been observed that only 39.7 percent of the employees are not satisfied due to lack of equipment infrastructure. There are 29.8 percent of the employees who are neutral and have no opinion whether equipment infrastructure has impact on their satisfaction. It can be inferred that employees might have other factors that determine their satisfaction levels.
- Majority of the **officers** agree and strongly agree that equipment infrastructure is very much required for satisfaction. The researcher rather finds 39 percent of the officers are not satisfied because of lack of equipment infrastructure. There

are 36 percent of the officers who are neutral about need for equipment infrastructure for satisfaction. The officers maybe feel there are other factors and not just adequate equipment that might determine satisfaction levels. Therefore other parameters are probed in the further section.

- To summarize, majority (69.4 percent) of all respondents (patients, employees and officers) strongly agree that equipment infrastructure is required for their satisfaction. It has been observed that 61.1 percent of them are not satisfied with rural healthcare because of lack of equipment infrastructure. There are 26 percent of them who are neutral and have no opinion about the requirement of equipment infrastructure for providing them satisfaction.
- There's a significant statistically proved relationship between the equipment infrastructure availability and the satisfaction of the patients, employees and officers who have experienced rural healthcare services.

6.2.4 Findings on the impact of vacant posts in rural healthcare facilities

- Majority (79.2 percent) of **patients** strongly agrees that inadequacy and incompetency of Healthcare Staff impacts their satisfaction. Its observed that 76.5 percent of the patients are not satisfied because of the same reasons. It can be inferred that patient's satisfaction is significantly related to the inadequacy and incompetency of rural healthcare staff.
- Half of the **employees** agree and strongly agree that inadequacy and incompetency of healthcare staff is impacting their satisfaction. The researcher rather finds 39.7 percent of the employees are not satisfied because of inadequacy and incompetency of healthcare staff. There are only 17.5 percent of the employees who are neutral without any opinion about need for adequate and competent healthcare staff for providing satisfaction. It can be inferred that the

employees may feel there are other factors that will determine their satisfaction levels. Therefore other parameters are probed in the further section.

- Half of the **officers** agree and strongly agree that inadequacy and incompetency of healthcare staff impacts their satisfaction. Its observed that 42 percent of the officers are not satisfied because of inadequacy and incompetency of healthcare staff. There are 19 percent of the officers who are neutral without any opinion about the impact on their satisfaction because of the inadequacy and incompetency of healthcare staff. It can also b inferred that the officers maybe having other factors and not just adequate competent manpower that might determine satisfaction levels. Therefore other parameters are probed in the further section.
- To summarize, 69.2 percent of all respondents (patients, employees and officers) strongly agree that inadequate and incompetent healthcare staff have an impact on their satisfaction. Its observed that 61.4 percent of them are not satisfied because of inadequate and incompetent healthcare staff. There are only 13.6 percent of them who are neutral without any opinion on need for adequate and competent healthcare staff for their satisfaction.
- The officers and employees maybe feeling there are other factors and not just adequate and competent healthcare staff that might determine satisfaction levels. Therefore other parameters are probed in the further section. There's a significant relationship between satisfaction levels and inadequate incompetent healthcare staff.

6.2.5 Findings on the funding of rural healthcare facilities in Surat District

- Majority (78.2 percent) of patients strongly agree that inadequate financial funding is impacting their satisfaction about rural healthcare services. Its observed that 75.2 percent of the patients are not satisfied with rural healthcare

facilities because of inadequate financial funding by the government. These statistics prove that patient's satisfaction is significantly related to inadequate financial funding.

- Half of the employees agree and strongly agree that inadequate financial infrastructure is having effect on their satisfaction of rural healthcare services. Its observed that 40.6 percent of the employees are not satisfied because of inadequate financial funding by the governmental authorities. There are only 19.8 percent of the employees who are neutral without any opinion about relationship between inadequate financial funding and their satisfaction.
- There are 61 percent of officers who agree and also strongly agree that inadequate financial funding is related to their satisfaction. The researcher rather finds 45 percent of the officers are not satisfied because of inadequate financial infrastructure. There are 25 percent of the officers who are neutral about inadequate financial infrastructure and its relation to satisfaction.
- To summarize, 69.3 percent of respondents (patients, employees and officers) strongly agree and agree that inadequate financial funding has relationship with their satisfaction levels. The researcher rather finds 61 percent of them are not satisfied because of inadequate financial funding by the government. There are 16.2 percent of them who are neutral about relationship between inadequate financial funding and their satisfaction. There's a significant relationship between the inadequate financial funding and satisfaction levels of the patients, employees and officers
- The Relationship between Affordability and Recommending Rural healthcare is done. Majority of patients who can't afford the private clinic or referred facility charges and are definitely not recommending (88.20 percent) rural healthcare services. All the patients have borrowed money to pay for private healthcare services yet they (88.20 percent) definitely do not recommend rural healthcare

services. The patients who are non affording and who had to borrow money to pay for private health services do not still recommend PHC but appears to be satisfied with private healthcare services which are fee for service. It is important to probe the reasons for this.

- Majority (82.8 percent) of the patients is taking more than 6 years to repay their loan and 73.5 percent of them don't recommend rural healthcare services. Even though they are still repaying loan taken to pay for private healthcare, still they do not recommend rural healthcare facilities to family friends or relatives.
- There are 91 percent of the patients who are not aware of state insurance schemes or government welfare programs and only 9 percent of them are aware of these schemes. The government needs to propagate the schemes to the public at large and focussed to rural population.
- Majority of the patients, employees and officers are not satisfied with the rural healthcare services.

6.2.6 Findings on Managerial aspects like Decentralized Planning, Execution, Monitoring of rural healthcare facilities in Surat district

- All the respondent employees strongly opined they don't have the authority to make decisions when needed while working in the rural healthcare facility.
- The employees strongly agree that there's good job security.
- The staff disagrees and also strongly disagrees that the supervisor takes their feedback before making any important decisions. This shows there's lack of participative management and lack of informed decisions.
- The employees opined that there's regular supervision of the rural healthcare services.

- Half of the employees opined that feedback for the yearly planning and budgeting of the healthcare facility is taken but the other half of the employees feel there's never a feedback taken.
- It's observed that employees do not have confidence on the government whereas officers have the confidence that it will improve the rural healthcare services.
- Its opined that majority of the employees do not enjoy performing their respective jobs due to the work environment.
- The officers opined that they never take feedback from employees for yearly planning and budgeting.
- It is opined that 73 percent of the officers strongly agree that they have the authority to make decisions.
- They also strongly disagree that they take feedback from employees before making the decisions.
- The officers opined strongly that they have job security.
- Majority of the officers do not enjoy performing their respective jobs due to the work environment
- It has been observed that the majority of patients, employees and officers do not want to recommend the rural healthcare services to family, friends and relatives.

6.2.7 Conclusion on the findings of the study

In conclusion it can be said that the rural healthcare services are in bad shape and requires a fresh rethink of policies and procedures to guide rural areas into vibrant Indian pockets. A majority of people turn to the local private health sector which is fee for service as their first choice of care rather than to the free rural healthcare services. The patients are non affording and had to borrow money to pay for private health services and do not recommend rural healthcare services. They are satisfied with private healthcare services which are fee for service.

There's a need for improving the rural healthcare infrastructure in terms of manpower, financing, and medical equipment since they have a significant relationship with satisfaction levels of patients availing the rural healthcare services.

The employees and officers need to be given a good working environment to perform their jobs. Good managerial principles such as decentralization, planning, execution and supervision needs to be brought in. It's important to give the impetus to the whole new concept of integrating the employees and administrative machinery and needs to be reorganized. They need to work in synergy to achieve the objective of overall enhancement of rural health.

Many patients due to dissatisfaction of rural services do not recommend these services to family friends and relatives. Therefore this is high time that rural healthcare is redefined and a determined effort taken, as an interdisciplinary team, allowing the experts and technocrats to implement innovative programs so everyone will be satisfied and will be willing to recommend rural healthcare services.

6.3 Suggestions

6.3.1 Suggestions for improving rural healthcare facilities accessibility

- In order to take public health services further close to people research scholar would suggest developing each health sub centre so that OPD/IPD and Institutional deliveries might happen at each health sub centre of the country on permanent basis.
- The upgradation and establishment of new health centers as per available human resources as infrastructure, logistics and work force must occur simultaneously.

- It is quite suggestive for the governments to spend more in a focused manner to avoid the rising mortalities from the infectious diseases that plague the poor in the society and the so-called non-communicable diseases of the growing middle classes.
- The instant health advice 'electronically' proposed by NIDAN would add to the quality healthcare. The model townships could be connected through telemedicine to the tertiary care centers for availability of specialty/ superspeciality consultation and also continuing medical education.

6.3.2 Suggestions for improving Manpower Planning in Rural Healthcare Services

- Research scholar would recommend establishment of new medical and paramedical institutions on priority basis at central, regional, state and sub state levels to overcome the deficient work force in the country.
- Research scholar would also suggest starting a new cadre of doctors namely Bachelor of Rural Health in the country as it would definitely produce doctors in numbers in shorter period.
- Manpower planning has to be done basing on the physical infrastructure present and training will enhance skills of the present staff. Posting at under functioning facilities at the beginning of their career erodes their nursing, technical and surgical skills and make them non-functional forever. Therefore a rotation system will help.
- Residential quarters with all required amenities, schools for children and other social requirements must be provided to all medical, managerial, supervisory and paramedical staff near to health facility even in remote and distant areas. This

will avoid social isolation among employees and attract more workforce to rural areas.

- Focusing on skill up gradation, capacity development and capability reinvigoration for rural manpower is essential. By doing this the patients are treated efficiently and the lost trust can be regained.
- MCI and Nursing council of India and all other medical and engineering councils should incorporate public health management and its issues into the syllabus of study to enable sensitization.
- The regulatory councils should also do quantitative assessment of staff, infrastructure, material and equipments and also quality or treatment audit. The qualitative assessment e.g. upgrading professional skills of staff, managerial skills of administrators, quality of health care provided, quality of students trained at these institutes are to be monitored and implemented.

6.3.3 Suggestions for improving the Economic aspects like funding & financing rural healthcare facilities in Surat district

- Universal healthcare and right to health will go a long way in providing affordability and accessibility to rural public.
- To reduce the out of pocket expenses, innovative insurance model with Schemes should be created for the rural public.
- National Rural Health Mission tried to implement social security schemes such as health insurance, financial assistance under Janani Suraksha Yojna to below the poverty line families.
- Preventive healthcare schemes need to be innovative and attractive for the rural populace. Proper marketing of these schemes needs to be looked into to create more awareness among the rural public. Incentives can be given to the staff for enrolment of these schemes.

- Provision of healthcare for rural areas hinge on the affordability of treatment and diagnostic costs. In order to propel the indigenous production of medical devices, drugs, surgicals and diagnostics, the biomedical scientists in the hospitals, research institutions and elsewhere can come together and translate their knowledge into affordable medical products. By instituting 'innovation clinics', the consulting scientists and doctors could join hands in order to translate their respective knowledge useful for bedside of patient around the Model Rural Research Centre of ICMR. This will be important in fulfilling the PM's concept of 'make in India' thereby saving both the costs of import thereby enabling affordable health care.
- A country like India must invest at least 10 percent of its GDP in the public health sector.
- Categorise the rural areas to high focus and low focus areas basing on the physical equipment, manpower and financial infrastructure needed. Allocate higher per capita funds release to high focus rural areas to bring equality of infrastructure.
- Funds need to be allocated separately as per local statistics of incidence to tackle the double burden of diseases due to spike in infectious diseases that caused maximum child and maternal mortality coupled with chronic non-communicable diseases - such as diabetes, heart diseases, mental health, cancers etc and put them on agenda.
- PPP Model could not only add to the quality results and management but would also provide public awareness in the rural areas for early diagnosis and planned preventive strategies. The PPP diagnostic model along with the innovative insurance scheme can generate huge financial resources (the State Government being partner) for the development both at primary and secondary care services.

- Collaboration of Public and Private healthcare through corporate social responsibility and sharing technical knowhow. Adoption of a few village health centres (PHC or SC) by the private healthcare players will go a long way ahead in providing accessibility and quality care. Incorporate "cooperative thinking" in the system by diverting efforts towards provision of universal basic care i.e. "Good for most rather than best for few". This is a huge task with an inherently contradictory objective, but essentially requires a planned trial. System now requires a radical surgery, no palliation. Theres a need to bring together the authority of public sector and efficiency and energy of private sector together.

6.3.4 Suggestions for improving Managerial aspects of Rural Healthcare Services

- Participative management, feedback mechanism and granting authority to take decisions will increase the satisfaction and retention of the already overburdened lean staff. Extra perks and incentives for long duration of working will motivate the staff.
- Introduction of a mechanism to measure accountability of health care workers and quality of work done by them as well as to reward the star performers can result in raising the bar of quality. Some important elements of NABH's guidelines have been proposed as a means to improve the management of health care delivery in both urban and rural regions.
- There is an absence of reward for excellence or punishment for failures in the system. Introduction of a mechanism to measure accountability of health care workers and quality of work done by them as well as to reward the star performers can result in raising the bar of quality.
- Longevity of employee- employer relationships, efficient performance based incentives and disincentives, talent management and leaderships are most

required in the public health sector of the country. Quality of health care could only improve with good and efficient doctors and paramedics in place. Lack of good people could result in bad planning and execution of the health programs.

- The proposal to effectively mainstream AYUSH in present rural health delivery systems would go a long way and also pave way for looking into the deep rooted indigenous system of medicine well accepted among people. There could be value addition of services by AYUSH staff if they are trained for national health programmes, identifying emergencies in facilitating a decrease in IMR, MMR and IFR. Needless to state, the huge work force of AYUSH is available with majority of the states in India.
- Attending to the needs of rural healthcare employees is very vital for the contribution of their services to the rural poor. Some issues to be handled with care are Migration of health workforce to cities, private practice by government doctors, lack of medical and paramedics staff, cadre conflicts such as contractual versus permanent staff are some problematic areas.
- If reporting the work would be more important than doing the work and submission of utilization certificate would be more important than proper utilization of funds, no public health system could develop. Therefore it required to develop appropriate staff friendly systems.
- Having proper accountability systems in place will provide a level playing. Proper human resource practices need to be implemented. Regular supervision, monitoring by officials will create a accountability system in place.
- An employee suggestion and feedback system will help the officials to know the problems and difficulties of the staff. The yearly planning of the activities and budgeting the financials with the help of all the staff department wise will create a participative management.

- The confidence and trust on the supervisors and officials will improve with transparency and dealing with strict systems in place for the functioning of the officials. The policy issues with a job description and flow charts with effective suggestion systems in place will improve the confidence of employees on the officials.
- It is most needed to press for proper organization of meetings of the executive committees and governing bodies of respective health societies and Rogi Kalyan Samities.
- A patient suggestion and feedback system will help the staff know the problems and difficulties of the patients. Remedial measures can be implemented to create satisfaction among the patients.
- A central IT enabled inventory management of pharmacy will help in smooth functioning of the pharmacies. Medical equipment procurement, maintenance with AMC and breakdown insurance with good central inventory management will increase the efficiency and downtime of the medical equipment.
- To avoid patients cross reference to outside facilities a proper electronic medical record with audit of treatment by checking if lab tests reports are generated here and drugs prescribed are available in the in-house pharmacy and they are issued. A stringent punitive measure for malpractice and corruption will avoid references to private clinics or hospitals.
- The hospitals need to be computerised with ERP system to ensure affective manpower management and creating transparency among employees and officials. Punching of attendance electronically will be good. A central monitoring cell with HIS reports for all rural hospitals HR practices will ensure proper manpower planning and recruitment services.
- Assign module creation to all students and professors of Information Technology government funded colleges and universities. India is a global superpower in

programming and can leverage innovative methodologies to create cost effective and efficient IT system. Each corporate and private enterprise can contribute towards the IT enabled rural healthcare.

- The NABH or JCI implementation with regional modifications could improve the quality of services.
- Improve public health data management and access and verify the scientific statistical authenticity of the data submitted from each rural health center by cross tallying. Proper sample selection based on accurate data will provide for effective planning and executing health programs.
- The only way which could lead to the goal of health inclusion is by incorporating impoverish needy rural population through community participation.

6.4 Conclusion

In India seventy percent of population lives in rural areas and healthcare delivery is a challenge for the government agencies. The Indian government is putting in lot of financial and manpower resources to improve the rural healthcare services. The patients are not satisfied with the rural healthcare services and are therefore availing private fee for services in spite of getting debt ridden and definitely would not want to recommend rural services to anyone. The reasons for dissatisfaction are probed and observed that lack of infrastructure related to physical equipment, manpower and finances are the cause. The working environment of the rural healthcare services is not professionally encouraging with unclear scientific human resource practices leading to no accountability and dissatisfaction with the way rural healthcare is managed. The models proposed to increase affinity for rural healthcare and accessibility is envisaged. The governments radical revamp of the policies and procedures with governmental schemes will bring a new lease of life to take the rural India along the journey of India becoming a developed nation.

6.5 Scope for further studies

The present study has dealt with the management and economic planning issues of rural healthcare services in Surat district and Gujarat state as a whole. The study is confining majorly to the rural parts of the country and the sample is chosen from these rural areas. The sample may not be completely representative to all segments of population with selected locations. Therefore a study can be carried out for the urban poor and the infrastructure status of these facilities. A comparative study can be done on rural healthcare status of neighboring states of Gujarat such as Maharashtra, Rajasthan and Madhya Pradesh.

BIBLIOGRAPHY

1. ”Arogya Raksha Yojana” Web. (30 Apr. 2012). Accessed January 10, 2016. http://forbesindia.com/blog/health/5-things-to-know-about-the-indias-healthcare-system/
2. AHA News (3/30/2009). Rural outreach for a healthier farming community. *AHA News*, Vol. 45, Issue 7, p.4-5, 2p.
3. Amato, Paul R. (1993). "Urban-Rural Differences in Helping Friends and Family Members", *Social Psychology Quarterly*, 56(4): 249-62.
4. Andoh, S.Y., Umezaki, M., Nakamura, K., et.al. (2006). Correlation between national income, HIV/AIDS and political status and mortalities in African countries. Public Health; 120: 624–633.
5. Aronovitz, Leslie G. (2006), Health Professional Shortage Areas: Problems Remain with Primary Care Shortage Area Designation System: GAO-07-84. *GAO Reports*, 10/24/2006, p.1, 66p.
6. Ashok Panagariya. The Challenges and innovative solutions to rural health dilemma. Ann Neuro sci. 2014 Oct; 21(4): 125–127.
7. Ashok Vikhe Patil, K.V. Somasundaram, and R. C. Goyal. (2002). "Current Health Scenario in Rural India." *Australian Journal of Rural Health,* 10, no. 2: 129–135.
8. Baleta, Adele. (2009). Rural hospital beats the odds in South Africa. Lancet, 9/5/2009, Vol. 374 Issue 9692, p771-772, 2p, 2 Color Photographs.
9. Balfour, Frederik; Zhao, Yidi. (2010). The Ka-Ching in China Luring Medical Giants. *Business Week*, 3/15/2010, Issue 4170, p. 58-58, 1p.
10. Beggs, J.J., V.A. Haines and J.S. Hurlbert. (1996). "Revisiting the Rural-Urban Contrast: Personal Networks in NonmetropoUtan and Metropolitan Settings." *Rural Sociology*, 6l(2):306-25.

11. Bhandari L, Dutta S. India Infrastructure Report; (2007). Health infrastructure in rural India.

12. Bhargava A., Jamison D.T., Lau L.J., Murray C.J. (2001). Modeling the effects of health on economic growth. *Journal of Health Economics,* 20: 423-440.

13. Bloom D., Canning D., Sevilla J. (2004). The effect of health on economic growth: A production function approach. *World Development,* 32: 1–13.

14. Booysen, Frikkie le R. (2003). Urban-rural inequalities in health care delivery in South Africa. *Development Southern Africa*, Dec 2003, Vol. 20 Issue 5, p659-673, 15p

15. Brown, Theodore M.; Fee, Elizabeth (2008). The Bandoeng Conference of 1931: A Milestone in Health and Development. American Journal of Public Health, Jan2008, Vol. 98 Issue 1, p42-43, 2p.

16. Census of India 2011, Gujarat (2011). *Brief History of the District,* published by Directorate of Census Operations Gujarat, 12-13.

17. Chakrabarti, Anindita; Chaudhuri, Kausik (2007). Antenatal and maternal health care utilization: evidence from northeastern states of India. *Applied Economics*, 4/10/2007, Vol. 3 Issue 6, p.83-695.

18. Chatterjee, Patralekha. (2006). India's government aims to improve ruralhealth. Lancet, 10/28/2006, Vol. 368 Issue 9546, p1483-1484, 2p

19. Chatterjee, Patralekha. (2010). Hospital train provides lifeline to rural India. Lancet, 5/29/2010, Vol. 375 Issue 9729, p1860-1861,

20. CII-McKinsey and Company Report (2002). *Healthcare in India: The Road Ahead*.

21. ClifFord, William B., and Yevonne S. Brannon (1985). "Rural-Urban Differences in Mortality." *Rural Sociology*, 50(2): 210-24.

22. Commissionerate of Geology and Mining, Government of Gujarat (2005-06).

23. Das, Jishnu, and Jeffrey, Hammar (2007). "Money for Nothing: The Dire Straits of Medical Practice in Delhi, India" *Journal of Development Economics*, 85(1).

24. District Level Household and Facility Survey DLHS 3 (2007-2008). http://rchiips. org/pdf/rch3/state/India.pdf.

25. Dongfu, Qian; Pong, Raymond W.; Aitian Yin; Nagarajan, K.V.; Qingyue Meng. (2009). Determinants of health care demand in poor, rural China: the case of Gansu Province. *Health Policy & Planning*, Sep. 2009, Vol. 24 Issue 5, p324-334.

26. Drummond, M., Jonsson B., Rutten F. (1997). The role of economic evaluation in the pricing and reimbursement of medicines. *Health Policy*, 40: 199–215.

27. Duggal, R. (1997). Health Care Budgets in a Changing Political Economy. *Economic and Political Weekly*, May: 17–24.

28. Dummer, Trevor J.B.; Cook, Ian G. (2007). Exploring China's rural health crisis: Processes and policy implications. *Health Policy*, Sep. 2007, Vol. 83, Issue 1, p.1-16.

29. Dussauit, Gilles, and Maria Christina Franceschini. (2006). Not Enough There, Too Many Here: Understanding Geographic Imbalances in the Distribution of the Health Workforce. *Human Resources for Health*, 4 (12): I -16.

30. Feldman, Roger; Deitz, David M.; Brooks, Edward F. (1978), The Financial Viability of Rural Primary Health Care Centers. *American Journal of Public Health*, Oct. 78, Vol. 68 Issue 10, p.981, 8p.

31. FICCI-KPMG Report, 2007. (http://articles.economictimes.indiatimes.com/2015-09-01/news/66107692_1_healthcare-sector-healthcare-delivery-social-sector).

32. Frost & Sullivan, LSI Financial Services, Deloitte, TechSci Research. http://www. india-opportunities.es/archivos/publicaciones/Healthcare-January-2016.pdf, p. 9.

33. Gnawali, Devendra Prasad; Pokhrel, Subhash; Sié, Ali; Sanon, Mamadou; De Allegri, Manuela; Souares, Aurélia; Dong, Hengjin; Sauerborn, Rainer. (2009). The effect of community-based health insurance on the utilization of modern health care services: Evidence from Burkina Faso. *Health Policy*, May 2009, Vol. 90 Issue 2/3, p214-222, 9p.

34. Goesling, Brian. (2001). Changing Income Inequalities Within and between nations: New Evidence, *American Sociological Review*, 66(5): 745-6l.

35. Goldberg, J., Hayes, W., and Huntley, J. (November 2004). *Understanding Health Disparities*. Health Policy Institute of Ohio, p. 3.

36. Gonzalez-Pier, E., Gutierrez-Delgado C., Stevens G. et.al. (2006). Priority setting for health interventions in Mexico's System of Social Protection in Health. Lancet; 368: 1608–1618.

37. Goudge, Jane; Russell, Steven; Gilson, Lucy; Gumiede, Tebogo; Tollman, Steve; Mills, Anne. (2009). Illness-related impoverishment in rural South Africa: Why does social protection work for some households but not others? *Journal of International Development*, Mar 2009, Vol. 21 Issue 2, p231-251, 21p, 5 Charts, 2 Graphs.

38. Government of India, Ministry of Health and Family Welfare, Statistics Division Rural Health Statistics, 2014-2015.

39. Government of India, Bulletin on Rural Health Statistics in India, December 1999. New Delhi: Rural Health Division, Ministry of Health and Family Welfare, 2000.

40. Gravelle, H., Sutton M., Morris S. et.al. (2003). Modelling supply and demand influences on the use of health care: implications for deriving a needs-based capitation formula. *Health Economics*, 12: 985–1004.

41. Gupta, Rajat K.; Kumra, Gautam; Maitra, Barnik C. (2005). A foundation for public health in India. *McKinsey Quarterly*, Special Edition, p.6-8, 3p.

42. Hajizadeh, Mohammad; Connelly, Luke B. (2010). Equity of Health Care Financing in Iran: The Effect of Extending Health Insurance to the Uninsured. Oxford Development Studies, Dec. 2010, Vol. 38 Issue 4, p. 461-476.

43. Hayward, Mark D., Amy M. Pienta and Diane K. Mclaughlin (1997). "Inequality in Men's Mortality: The Socio-economic Status Gradient and Geographic Context." *Journal of Health and Social Behavior*, 58{4):3\3-50.

44. Health Issues in the Parliament. Rajya Starred Question No. 489, (27 August 2001). Health for Million, Voluntary Health Association of India, 2000; 27: 5–6.

45. High Level Expert Group Report on Universal Health Coverage for India Planning Commission of India New Delhi, (November, 2011). Available from: http://planningcommission. nic.in/reports/genrep/rep_uhc0812.pdf, accessed on October 10, 2012.

46. House, James S., James M. Lepkowski, David R. Williams. Richard K Mero, Paula M. l^ntz, Stephanie A. Robert and Jieming Chen. (2000). "Excess Mortality Among Urban Residents: How Much, For Whom, and Why?" *American Journal of Public Health*, 90 (12): 1898-1904

47. House, James S., Karl R. Landis, Debra Umberson. (1988). *Social Relationships and Health*. 5a><«fi'24]{4865):540-45.

48. http://siteresources.worldbank.org/INTWDR2006/Resources/477383-1127230817535/WDR2006overview.pdf

49. http://www.in.undp.org/content/dam/india/docs/inequality_adjusted_human_ development_index_for_indias_state1.pdf

50. http://www.who.int/healthsystems/topics/equity/en/

51. https://counterview.org/2015/10/20/healthcare-gujarat-governments-low-budgetary-provisioning-has-resulted-in-high-out-of-pocket-expenditure-for-the-poor/

52. Hua, Li; Gene, Hsin Chang. (2008). Disparity in Health Resource Allocation Between Rural and Urban Areas in China: Is It Getting Worse? *Chinese Economy*, Nov/Dec. 2008, Vol. 41 Issue 6, p45-55, 11p, 6 Charts;

53. Hudson, Sara. (2009). Shopping for Health Policy, *Summer* 2009/2010, Vol. 25 Issue 4, p.27-33, 7p.

54. Hutubessy, R., Chisholm, D., Edejer T.T. (2003). Generalized cost-effectiveness analysis for national-level priority-setting in the health sector. *Cost Effectiveness and Resource Allocation*, 1: 8.

55. *Ibid*. Census of India 2011, Gujarat (2011).

56. *Ibid*. Census of India 2011, Gujarat (2011).

57. *Ibid*. www.census2011.co.in

58. Iglesias, C.P., Drummond, M.F., Rovira, J. NEVALAT Project Group (2005). Health-care decision-making processes in Latin America: problems and prospects for the use of economic evaluation. *International Journal of Technology Assessment in Health Care*, 21: 1–14.

59. India Guide Gujarat (2007). *Tourist Flow in Gujarat, Annual Report (2006-07),* Tourism Corporation of Gujarat.

60. Indian Real Estate Growth & New Destination, FICCI- Earnest & Young Report-2007.

61. Iyengar, S., Dholakia, R.H. (2012). Access of the rural poor to primary healthcare in India. *Rev Market Integr.*; 4: 71–109.

62. JAN. Economic Analysis For Management And Policy [e-book]. Open University Press; (2005). [cited 2013 Mar 21]. Available from: MyiLibrary. <http://lib.myilibrary.com?ID=95419).

63. Jat, T.R., Ng, N, San, Sebastian, M. (2011). Factors affecting the use of maternal health services in Madhya Pradesh state of India: A multilevel analysis. *Int. J. Equity Health*, 10: 59.

64. Jugal, Kishore (2005). *National health programs of India: national policies & legislations related to health.* Century Publications. ISBN 978-81-88132-13-3. Retrieved 2 September 2012. Kumar R. Academic institutionalization of community health services: Way ahead in medical education reforms. J Family Med Prim Care. 2012;1:10–9.

65. Jutting, Johannes P. (2004). Do Community-based Health Insurance Schemes Improve Poor People's Access to Health Care? Evidence From Rural Senegal. *World Development*, Feb. 2004, Vol. 32, Issue 2, p. 273, 16p.

66. K.V. Ramani, Dileep Mavalankar (2006). Health system in India: opportunities and challenges for improvements. *Journal of Health Organization and Management*. Volume 20 issue 6. pp. 560-572

67. K.V. Ramani, Dileep Mavalankar (2006)[122], Health system in India: opportunities and challenges for improvements. Journal of Health Organization and Management. Volume 20 issue 6. pp. 560-572

68. Kawachi, I., Subramanian, S., Almeida-Filho, N. (2002). A glossary for health inequalities. *J. Epidemiol Community Health*, 56: 647–652.

69. Kearns, G. (1988). "The Urban Penalty and the Population History of England." Pp. 213-36. *Society, Health and Population During the Demographic Transition*. A. Brandstrom and L. Tedebrand, editors. AJmquist and Wiskell International.

70. Kearns, G. (1988). "The Urban Penalty and the Population History of England." Pp. 213-36. Society, Health and Population during the Demographic Transition. A. Brandstrom and L. Tedebrand, editors. AJmquist and Wiskell International.

71. Kinra, Sanjay; Ben-Shlomo, Yoav. (2010). Rural MBBS degree in India. Lancet, 10/16/2010, Vol. 376 Issue 9749, p1284-1285, 2p, 1 Color Photograph;

72. Kinsella, Kevin. (2001). Urban and Rural Dimensions of Global Population Aging: An Overview. *Journal of Rural Health*, 17(4): 314-22.

73. Kitagawa, Evelyn M., and Phillip M, Häuser. (1973). *Differential Mortality in the United States: A Study of Socio-economic Epidemiology*. Harvard University Press.

74. Krasovec, Katherine and Shaw, Paul R. (2000). *Reproductive health and health sector reform linking outcomes to action*, World Bank Institute, The World Bank, Washington D.C. USA.

75. Kumar, R. (2012). Academic institutionalization of community health services: Way ahead in medical education reforms. *J. Family Med Prim Care*, 1: 10–9.

76. Laditka, James N., Sarah B. Laditka, Bankole Olatosi and Keith T. Elder. (2007). "The Health 7rade-0ff of Rural Residence for Impaired Older Adults: Longer Life, More \mp2ATmem." *Journal of Rural Health*, 23(2): 124-32.

77. LaFleur, Elizabeth K.; Taylor, Susan Lee; Sumrall, Delia A. (1997). Assessing the Health Care Needs of a Rural Community. Marketing Health Services, Winter 97, Vol. 17 Issue 4, p12-19, 8p, 1 Color Photograph.

78. Lakshmanswami Mudaliar Committee (1959). Available from: http://nrhm-mis.nic.in/ui/who/PDF/A%20Lakshmanaswami%20Mudaliar%20committee%201959.pdf, accessed on October 8, 2012.

79. Langmore, John. (2001). Rural Aging: A Global Challenge, *Journal of Rural Health*, 17 (4): 305-306.

80. Li, Jie; Runderson, Robert, A.; Burnham, Judy F.; Staggs, Geneva Bush; Robertson, Justin C.; Williams, Thomas L. (2005), Delivering Distance Training to Rural Health Care Professionals. *Medical Reference Services Quarterly*, Spring 2005, Vol. 24, Issue 1, p41-54, 14p.

81. Madhav G. Deo. (April 2013). Doctor population ratio for India - The reality, *Indian J Med Res*, 137, pp. 632-635.

82. Madon, Shirin; Krishna, S.; Michael, Edwin. (2010). Health information systems, decentralisation and democratic accountability. *Public Administration & Development*, Oct 2010, Vol. 30, Issue 4, p.247-260, 14p. Abstract.

83. Mahoney, M.; Mahoney, Mary; Townsend, Mardie; Hallebone, Erica; Nesbitt, Pat. (2001). An 'upside-down' view of ruralhealth care. *International Journal of Consumer Studies*, Jun 2001, Vol. 25 Issue 2, p102-113, 12p

84. Managed Care Outlook, (10/1/2009). Remote Monitoring Devices Help Rural Health Centers Keep A Closer Eye on the Chronically III. Managed Care Outlook, 10/1/2009, Vol. 22 Issue 19, p9-11, 3p;

85. Mann, J.M., Gostin, L., Gruskin, S., Brennan, T., Lazzarini, Z., Fineberg, H.V. (1994). Health and human rights. *Health Hum Rights*, 1: 6-23.

86. Mavlankar, D., Singh, A., Patel, S.R., Desai, A., and Singh, P.V. (2009). Saving mothers and newborns through an innovative partnership with private sector obstetricians: Chiranjeevi scheme of Gujarat, India. *International Journal of Gynecology and Obstetrics*, 271-276.

87. MBBS could become a 6.5-year course soon. Available from: http://www.shiksha.com/mbbs-could-become-a-6-5-year -course-soon-article-4868-1, accessed on October 8, 2012.

88. McLaughlin, Curtis P.; Ricketts, Thomas C.; Freund, Deborah A.; Sheps, Cecil G.. (1985), An Evaluation of Subsidized Rural Primary Care Programs: IV. Impact of the Rural Hospital on Clinic Self-sufficiency. *American Journal of Public Health*, Jul 85, Vol. 75, Issue 7, p. 749-753, 5p.

89. McMichael, A.J., McKee, M., Shkolnikov, V., Valkonen, T. (2004). Mortality trends and setbacks: global convergence or divergence? Lancet, 363: 1155–1159.

90. Medical Council of India, Annual Report 2010-2011. Available from: http://www.mciindia.org/pdf/Annual%20 Report.pdf, accessed on October 8, 2012.

91. Ministry of Health and Family Welfare. "Draft National Health Policy 2015". Retrieved 1 April 2015.

92. Montgomer, Mark R., Paul C. Hewett. (2005). Urban Poverty and Health in Developing Countries: Household and Neighborhood Effects. *Demography,* 42(3):397-425.

93. Montgomery, Mark R., Richard Stern, Barney Cohen, Holly E. Reed, editors. (2003). *Cities Transformed: Demographic Change and Its Implications in the Developing World*. National Academy Press.

94. Mosvovice, Ira; Christianson, Jon. (1995), Rural hospital networks: Implications for rural health reform. *Health Care Financing Review*, Fall 95, Vol. 17 Issue 1, p.53, 15p, 4 Charts;

95. Mukherjee, Srabanti; Bandhopadhyay, N. R.; Bhattacharya, B. K.. (2007), Reasons for Non-Utilization of Institutional Healthcare Service in Rural West Bengal: A Perspective. Decision (0304-0941), Jul-Dec, 2007, Vol. 34, Issue 2, p.113-132.

96. Murawski, Lisa; Church, Richard L. (2009), Improving accessibility to rural health services: The maximal covering network improvement problem. *Socio-Economic Planning Sciences*, Jun 2009, Vol. 43 Issue 2, p102-110, 9p

97. Nandan D, Agarwal D. (2012). Human resources for health in India: urgent need for reforms. *Indian J Community Med.*, 37: 205-6.

98. Nayak, Amar K.J.R. (2006). Managing Health without Doctors: A Case of Mobile Health Units (MHU). Mobile Health Unit -- Managing Health Without Doctors Case Study, p. 1-18.

99. Neckerman, Kathryn M., Florencia Torche. (2007). Inequality: Causes and Consequences. *Annual Review of Sociology*, 33:335-57.

100. O'Toole, Kevin; Schoo, Adrian; Stagnitti, Karen; Cuss, Kate. (2008). Rethinking policies for the retention of allied health professionals in rural areas: A social relations approach. *Health Policy*, Sep. 2008, Vol. 87 Issue 3, p326-332, 7p;

101. Olden, Peter C.; Szydlowski, Steven I. (2004). Health Promotion and Disease Prevention by Small Rural Hospitals: Reasons, Obstacles, and Enablers. *Journal of Healthcare Management*, Mar/Apr, 2004, Vol. 49 Issue 2, p.89-101, 13p.

102. Paslidis, Nick; Schlesier, Sarah; Collier, Steven. (2008). Introducing EHRs to a Rural Practice. *Physician Executive*, May/Jun. 2008, Vol. 34, Issue 3, p30-33, 3p, 1 Color Photograph, 1 Chart;

103. Pathman, Donald E.; Konrad, Thomas R.; Dann, Rebekkah; Koch, Gary. (2004). Retention of Primary Care Physicians in Rural Health Professional Shortage Areas. *American Journal of Public Health*, Oct. 2004, Vol. 94, Issue 10, p.1723-1729, 7p.

104. Peek-Asa, Corinne; Zwerling, Craig; Stallones, Lorann. (2004). Acute Traumatic Injuries in Rural Populations. *American Journal of Public Health*, Oct. 2004, Vol. 94, Issue 10, p.1689-1693, 5p, 2 Charts, 1 Graph;

105. Planning Commission of India. 2. High level expert group report on universal health coverage for India. 2011. Available from: http://planningcommission. nic.in/reports/genrep/rep_uhc0812.pdf, accessed on August 6, 2014.

106. Ponton, Kevin T. (2004). An unusual capital source for rural hospitals: agriculture. *Healthcare Financial Management*, Nov. 2004, Vol. 58 Issue 11, p116-120, 3p.

107. Preston, Samuel H. and Etienne van de Walle. (1978). Urban French Mortality in the Nineteenth Century. *Population Studies*, 32 (2): 275-97.

108. Purohit, Brijesh C. (2008). Efficiency of the Health Care System: A Sub-State Level Analysis for West Bengal (India). *Review of Urban & Regional Development Studies*, Nov. 2008, Vol. 20, Issue 3, p212-225, 14p, 10 Charts.

Read more: http://forbesindia.com/blog/health/5-things-to-know-about-the-indias-healthcare-system/#ixzz3zAzjokip

109. Reilley, Brigg; Frank, Thorsten; Prochnow, Thomas; Puertas, Gloria; van der Meer, Joost. (2004). Provision of Health Care in Rural Afghanistan: Needs and Challenges. *American Journal of Public Health*, Oct. 2004, Vol. 94 Issue 10, p.1686-1688, 3p.

110. Roh, Chul-Young; Moon, M. Jae. (2005). Nearby, but Not Wanted? The Bypassing of Rural Hospitals and Policy Implications for Rural Health Care Systems. *Policy Studies Journal*, Vol. 33, Issue 3, p377-394, 18p.

111. Rural Health Statistics in India (2011). Available from: http:// nrhm-mis.nic.in/UI/RHS/RHS%202011/RHS%202011%20 Webpage.htm, accessed on October 8, 2012.

112. Rural Health Statistics in India (2015-16). Available from: https://nrhm-mis.nic.in/Pages/RHS2016.aspx?RootFolder=%2FRURAL%20HEALTH%20STATIS

TICS%2F%28A%29RHS%20%202016&FolderCTID=0x01200057278FD1EC909F429B03E86C7A7C3F31&View=%7B3EF44ABD-FC77-4A1F-9195-D34FCD06C7BA%7D Webpage.htm, accessed on August 1, 2017.

113. Rural Health Statistics in India (2015-16). https://data.gov.in/catalog/rural-health-statistics-2016

114. Rural India (2002). *Australian Journal of Rural Health*, 10, 129–135

115. Rural spending outpaces urban consumption. Available 12. from: http://www. business-standard.com/india/news/ruralspending-outpaces-urban-consumption/ 484859/, accessed on October 10, 2012.

116. S.K. Mishra. (2004). Telemedicine Initiatives in Indian sub-continent Question 14-1/2: Application of telecommunications in health care. Study Group-2, Document RGQ14-1/2/023-E. Rapporteur's Group Meeting On Question 14-1/2 - Hiratsuka, Japan, 25-27 June 2004.

117. Sarah, Atkinson; Luclia Fernandes; Andrea Caprara; Jasmine Gideon. (2005). Prevention and promotion in decentralized rural health systems: a comparative study from northeast Brazil. *Health Policy & Planning*, Mar 2005, Vol. 20, Issue 2, p.69-79, 11p.

118. Sarosh, Kuruvilla, Mingwei, Liu. (2007). Health security for the rural poor? A case study of a health insurance scheme for rural farmers and peasants in India. *International Social Security Review*, Vol. 60, 4/2007.

119. Scheffler, Richard M.; Kushman, John E. (1978). New Health Practitioners and Rural Health Care. *American Journal of Agricultural Economics*, Nov 1978, Vol. 60, Issue 4, p.691, 4p.

120. Sharma, R.K., Dhawan, S. (1986). Health problems of rural women, *Health Popul. Perspect. Issues*. 9:18–25.

121. Shukla, S. (2012). India probes corruption in flagship health 9. programme. Lancet; 379: 698.

122. Smith, R.D., Yago, M., Millar, M., Coast, J. (2005). Assessing the macroeconomic impact of a healthcare problem: the application of computable general equilibrium analysis to antimicrobial resistance. *Journal of Health Economics*, 24: 1055–1075.

123. Smith, Mark H. Roger T. Anderson, Douglas D. Bradham and Charles F. Longino. (1995). "Urban and Rural Differences in Mortality Among Americans 55 Years and Older: Analysis of the National Longitudinal Mortality Study." *The foumal of Rural Health*, 11(4): 274-85.

124. Surat and Tapi District Profile. *Industrial Commissionerate,* Government of Gujarat. Retrieved July, 2017

125. Suryanarayana, M.H., Agrawal, A., and Prabu, S.K. (2011). Inequality adjusted Human Development Index for India's States. Retrieved August 2012, from United Nations Development Program (UNDP), India.

126. Szreter, S. (1997). "Economic Growth, Disruption, Deprivation, Disease and Death: On the Importance of che Politics of Public Health for Development." *Population and Development Review*, 23(4): 693-728.

127. United Nations Habitat (2003). The Challenge of Slums: Global Report on Human Settlements. Earthscan.

128. Vandemoortele, Milo (2010). The MDGs and equity Overseas Development Institute.

129. Voluntary Health Association of India (VHAI). (1997). Report of the Independent Commission on Health in India.

130. Walaiporn Patcharanarumol; Mills, Anne; Viroj Tangcharoensathien. (2009). Dealing with the cost of illness: The experience of four villages in Lao PDR. *Journal of International Development*, Mar 2009, Vol. 21, Issue 2, p.212-230.

131. Walker, Judi. (1999). Partnerships to Improve Rural and Remote Health Care. *Australian Journal of Public Administration*, Sep. 99, Vol. 58 Issue 3, p72, 4p.

132. Weinstein M.C. (2006). Recent developments in decision-analytic modelling for economic evaluation. *Pharmacoeconomics*, 24: 1043–1053.

133. WHO Equity. (n.d.). WHO. Retrieved February 27, 2014, from http://www.who. int/healthsystems/topics/equity/en/

134. World Bank: World Development Report (1993). *Investing in Health*. New York: Oxford University Press.

135. World Health Organization. Country cooperation strategy at a glance India. (2013). Available from: http://www.who. int/countryfocus/cooperation_strategy/ ccsbrief_ind_en.pdf, accessed on March 20, 2014.).

136. World Health Organization. Preventing chronic diseases: a vital investment. Geneva: World Health Organization, 2006.

137. World Health Report (1999). Making a difference. Geneva: World Health Organization.

138. www.census2011.co.in. Retrieved July, 2017.

139. www.msmediahmedabad.gov.in. *Industrial Scenario of Surat.* Retrieved July, 2017. Department of Agriculture, Government of Gujarat. Retrieved July, 2017.

140. www.surat.dp.gujarat.gov.in.,https://suratdp.gujarat.gov.in/surat/jilavishe/itihas1 .htm. Retrieved June 26, 2017.

141. Yardim, Mahmut Saadi; Cilingiroglu, Nesrin; Yardim, Nazan. (2010). Catastrophic health expenditure and impoverishment in Turkey. Health Policy, Jan 2010, Vol. 94, Issue 1, p.26-33, 8p.

142. Yuanli Liu; Keqin Rao. (2006). Providing Health Insurance in Rural China: From Research to Policy. Journal of Health Politics, Policy & Law, Feb. 2006, Vol. 31, Issue 1, p71-92, 22p.

143. Zactiary Zimmer, Toshiko Kaneda, Zhe Tang. (2010), Explaining Late Life Urban vs. Rural Health: Discrepancies in Beijing, Social Forces 88 (4) 1885-1908, June 2010.

144. Ziller, Erika C.; Coburn, Andrew F.; Yousefian, Anush E. (2006). Out-Of-Pocket Health Spending And The Rural Under insured. Health Affairs, Nov/Dec2006, Vol. 25 Issue 6, p1688-1699, 12p.

145. Zimmer, Zachary. (2006). "Population aging." Pp. 936-40. Encyclopedia of Gerontology. R. Schulz, L.S. Noelker, K. Rockwood and R.L. Sprott, editors. Springer.

LIST OF ABBREVIATIONS

ANM	:	Auxiliary Nurse Midwife
AYUSH	:	Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
ASHA	:	Accredited Social Health Activist
BEE	:	Block Extension Educator
BMS	:	Basic Minimum Services CBR : Crude Birth Rate
CHC	:	Community Health Centre
HFWTC	:	Health and Family Welfare Training Centre
GDMO	:	General Duty Medical Officer
HA (F)/LHV	:	Health Assistant (Female)/Lady Health Visitor
HA (M)	:	Health Assistant (Male)
HFWTC	:	Health And Family Welfare Training Centre
HW (F)	:	Health Worker (Female)
HW (M)	:	Health Worker (Male)
IMR	:	Infant Mortality Rate
IPHS	:	Indian Public Health Standards
ISM & H	:	Indian System of Medicine and Homeopathy
LHV	:	Lady Health Visitor
MCH	:	Maternal and Child Health
MMU	:	Mobile Medical Unit
MNP	:	Minimum Needs Programme
MO	:	Medical Officer
MOHFW	:	Ministry of Health & Family Welfare (GOI)
PHC	:	Primary Health Centre
QPR	:	Quarterly Progress Report
RCH	:	Reproductive and Child Health
RKS	:	Rogi Kalyan Samiti

BPL	:	Below Poverty Line
CBR	:	Crude Birth Rate
CDR	:	Crude Death Rate
CGHS	:	Central Government Health Scheme
CHC	:	Community Health Centre
ESIS	:	Employee State Insurance Scheme
GDP	:	Gross Domestic Product
GSDP	:	Gross State Domestic Product
HLEG	:	High Level Expert Group
ICICI	:	Industrial Credit and Investment Corporation of India
IFC	:	International Finance Corporation
ILO	:	International Labour Organisation
IMR	:	Infant Mortality Rate
IRDA	:	Insurance Regulatory and Development Authority
JSY	:	Janani Suraksha Yojana
MMR	:	Maternal Mortality Rate
MNC	:	Multi National Corporation
NAC	:	National Advisory Council
NCMP	:	National Common Minimum Programme
NEP	:	Net Earned Premium
NFSA	:	National Food Security Act
NHAM	:	National Health Assurance Mission
NIC	:	National Insurance Company
NICE	:	National Institute for Health and Care Excellence
NRHM	:	National Rural Health Mission

OOP	:	Out-of-Pocket
PHC	:	Primary Health Centre
PHFI	:	Public Health Foundation of India
PPP	:	Public Private Partnership
RSBY	:	Rashtriya Swasthya Bima Yojana
SAP	:	Structural Adjustment Programme
TFR	:	Total Fertility Rate
UHC	:	Universal Health Coverage
UN	:	United Nations
UNDP	:	United Nations Development Programme
UNSDSN	:	United Nations Sustainable Development Solutions Network
WDR	:	World Development Report
WHO	:	World Health Organization

ANNEXURE – 1

QUESTIONNAIRE FOR PATIENTS

1. How long have you been visiting this hospital?
    a. Less than one year
    b. One year – Less than 2 years
    c. Two Years – Less than 5years
    d. Five Years – Less than Ten Years
    e. Ten years and more
2. What is your age?
    a. Under 21
    b. 21 – 34
    c. 35 – 44
    d. 45 – 54
    e. 55 and above
3. What is your Sex?
    a. Male
    b. Female
4. What is your Marital Status?
    a. Married
    b. Unmarried
5. What are the items owned by you?
    a. Cycle
    b. Motorcycle
    c. Car
    d. T V
    e. Tube well
    f. Sanitary Latrine

6. How many children do you have?

    a. None
    b. One
    c. Two
    d. Three
    e. Four
    f. Five and More

7. What is your total (before-tax) annual income from this job, including overtime and bonus?

    a. Less than Rs.20,000.00
    b. Rs.20,000.00 – Rs.29, 999.00
    c. Rs.30,000.00 – Rs.49,999.00
    d. Rs.50,000.00 – Rs.74,999.00
    e. Rs.75,000.00 and more

8. What is your occupation?

    a. Farmer
    b. Daily Wage Worker
    c. Businessman
    d. Retiree

9. Any illness during the last 14 days including today?

    a. Yes b) No

10. How often do you and your family member's fall sick?

    a. Once a week
    b. Once a month
    c. Twice a Month
    d. Once in Six Months

11. Status of illness today:

    a. Cured b. Sick

12. Type of first healthcare provider contacted:

    a. MBBS
    b. Paramedic
    c. Village Doctor
    d. Homeopathy Doctor
    e. Pharmacist
    f. Religious Healer
    g. Not applicable

13. Where was the provider contacted?

    a. District Hospital
    b. Medical College
    c. Primary Health centre
    d. MBBS Doctor's Clinic
    e. Private Clinic
    f. Pharmacy
    g. Provider's residents
    h. N A

14. What do you think of the services of the village Doctors in your area?

    a. Very good
    b. Good
    c. Not Sure
    d. Bad
    e. Very Bad

15. Did the provider refer the patient somewhere else?

    a. Yes b. No

16. If yes where to?

    a. District Hospital
    b. Medical College
    c. Primary Health Centre
    d. MBBS Doctor Clinic
    e. Private Clinic
    f. Pharmacy
    g. Provider's Residence
    h. N A

17. Could you pay for all the expenses?

    a. Yes b. No

18. Did you borrow money from anyone to pay for the hospital bill?

    a. Yes b. No

19. How long did it take to repay the loaned money?

    a. One Month
    b. One Year
    c. Less than 3 years
    d. 3 – 6 years
    e. More than 6 years.

20. Have you heard of the hospital conducting any preventive healthcare programs in your community?

    a. Yes b. No

21. How often is your feedback taken in the yearly planning and budgeting of the hospital?

    a. One Month
    b. Twice a Month
    c. Once in Six months
    d. Never

Infrastructure related issues: (Please circle one number for each statement).

	Disagree Strongly				Agree Strongly
22. I Feel there are adequate number of Medical equipments in the hospital.					
23. I Feel the lab is not equipped to do basic tests	1	2	3	4	5
24. The Staff refers me to an outside diagnostic facility for Tests.	1	2	3	4	5
25. I feel I am put through lot of expenses in outside Referred labs.	1	2	3	4	5
26. The staff refers me to outside pharmacy always	1	2	3	4	5
27. I feel the hospital is very much.	1	2	3	4	5
28. I feel I can trust what the doctors or hospital staff Tells me.	1	2	3	4	5
29. I feel there are no sufficient number of doctors	1	2	3	4	5
30. I feel the funding sanctioned is very less to this hospital.	1	2	3	4	5
31. I feel there is disparity in health resource allocation In rural area.	1	2	3	4	5
32. I have confidence in the government. It will improve Rural healthcare.	1	2	3	4	5

33. How likely would recommend this hospital to your family members or relatives?

    a. Strongly Recommend

    b. Probably Recommend

    c. Definitely not Recommend

34. What can the government do to increase effectiveness or rural hospitals?

35. Overall, are you satisfied with this hospital as a consumer?

    a. Yes ___ b. No ___

36. Any other Suggestions:

    a. Yes b. No.

QUESTIONNAIRE FOR EMPLOYEES

1. How long have you been visiting this hospital?

    b. Less than one year

    c. One year – Less than 2 years

    d. Two Years – Less than 5years

    e. Five Years – Less than Ten Years

    f. Ten years and more

2. What is your age?

    a. Under 21

    b. 21 – 34

    c. 35 – 44

    d. 45 – 54

    e. 55 and above

3. What is your Sex?

    a. Male

    b. Female

4. What is your Marital Status?

    a. Married

    b. Unmarried

5. What are the items owned by you?

    a. Cycle

    b. Motorcycle

    c. Car

    d. T V

    e. Tube well

    f. Sanitary Latrine

6. How many children do you have?

    a. None
    b. One
    c. Two
    d. Three
    e. Four
    f. Five and More

7. What is your total (before-tax) annual income from this job, including overtime and bonus?

    a. Less than Rs.20,000.00
    b. Rs.20,000.00 – Rs.29, 999.00
    c. Rs.30,000.00 – Rs.49,999.00
    d. Rs.50,000.00 – Rs.74,999.00
    e. Rs.75,000.00 and more

8. What is your occupation?

    a. Nurse
    b. Doctor
    c. Technician
    d. Housekeeping
    e. Security
    f. Pharmacist
    g. Others

How do you feel about the following specific matter? (circle the number for Each statement:

Your role at the hospital	Strongly Disagree				Strongly Agree
9. I am given enough authority to make decisions	1	2	3	4	5
Whenever necessary.	1	2	3	4	5
10. I like the type of work I do	1	2	3	4	5
11. I believe my job is secure	1	2	3	4	5
12. My Supervisor asks me for my input to help make decisions.	1	2	3	4	5
13. I have confidence in the leadership of our health authorities.	1	2	3	4	5

Infrastructure related issues: (Please circle one number of each statement).

	Disagree				**Agree**
14. I Feel there are adequate number of Medical equipments in the hospital.	**Strongly**				**Strongly**
15. I Feel the lab is not equipped to do basic tests	1	2	3	4	5
16. The Staff refers me to an outside diagnostic facility for tests.	1	2	3	4	5
17. I feel I am put through lot of expenses in outside referred labs.	1	2	3	4	5
18. The staff refers me to outside pharmacy always	1	2	3	4	5
19. I feel the hospital is very much understaffed	1	2	3	4	5
20. I feel I can trust what the doctors or hospital staff tells me.	1	2	3	4	5
21. I feel there are no sufficient number of doctors	1	2	3	4	5
22. I feel the funding sanctioned is very less to this hospital	1	2	3	4	5

23. I feel there is disparity in health resource allocation in rural area. 1 2 3 4 5

24. I have confidence in the government. It will improve rural healthcare. 1 2 3 4 5

25. How often does someone come to your hospital to check if all is going well?

    a. Once a week
    b. Once a month
    c. Twice a month
    d. Once in six months
    e. Never

26. Have you been involved with the hospital in conducting any preventive healthcare programs in your community?

    a. Yes b. No

27. How often is your feedback taken in the yearly planning and budgeting of the hospitals?

    a. Once a month
    b. Twice a month
    c. Once in six month
    d. Never

28. Are you involved in the day to day affairs of the functioning of the hospital programs?

    a. Yes b. No

29. Is there anyone to whom you send your daily report?

    a. Yes b. No

30. If yes, do you receive any analysis of the compiled daily reports?

    a. Yes b. No

31. How likely would you recommend this hospital to your family members or relatives?

a. Strongly recommend d
b. Probably recommend
c. Definitely not recommend

32. What can the government do to increase effectiveness of rural hospitals?

33. Overall, are you satisfied with this hospital as a consumer?

a. Yes b. No

QUESTIONNAIRE FOR OFFICERS

1. How long have you been visiting this hospital?
    a. Less than one year
    b. One year – Less than 2 years
    c. Two Years – Less than 5years
    d. Five Years – Less than Ten Years
    e. Ten years and more
2. What is your age?
    a. Under 21
    b. 21 – 34
    c. 35 – 44
    d. 45 – 54
    e. 55 and above
3. What is your Sex?
    a. Male
    b. Female
4. What is your Marital Status?
    a. Married
    b. Unmarried
5. What are the items owned by you?
    a. Cycle
    b. Motorcycle
    c. Car
    d. T V
    e. Tube well
    f. Sanitary Latrine

6. How many children do you have?
    a. None
    b. One
    d. Two
    e. Three
    f. Four
    g. Five and More
7. What is your total (before-tax) annual income from this job, including overtime and bonus?
    a. Less than Rs.20,000.00
    b. Rs.20,000.00 – Rs.29, 999.00
    c. Rs.30,000.00 – Rs.49,999.00
    d. Rs.50,000.00 – Rs.74,999.00
    e. Rs.75,000.00 and more
8. What is your occupation?
    a. Hospital Administrator
    b. District Health Office
    c. Health Commissioner
    d. Municipal Health Officer
    e. Others

How do you feel about the following specific matter? (Circle the number for Each statement) Your role at the hospital:

	Strongly Disagree				Strongly Agree
9. I am given enough authority to make decisions	1	2	3	4	5
whenever necessary.	1	2	3	4	5
10. I like the type of work I do	1	2	3	4	5
11. I believe my job is secure	1	2	3	4	5
12. My Supervisor asks me for my input to help make decisions.	1	2	3	4	5
13. I have confidence in the leadership of our health authorities.	1	2	3	4	5

Infrastructure related issues: (Please circle one number of each statement).

14. I Feel there are adequate number of Medical equipments.	1	2	3	4	5
15. I Feel the lab is not equipped to do basic tests	1	2	3	4	5
16. The Staff refers me to an outside diagnostic facility for tests.	1	2	3	4	5
17. I feel I am put through lot of expenses in outside referred labs.	1	2	3	4	5
18. The staff refers me to outside pharmacy always	1	2	3	4	5
19. I feel the hospital is very much understaffed	1	2	3	4	5
20. I feel I can trust what the doctors or hospital staff tells me.	1	2	3	4	5
21. I feel there are no sufficient number of doctors	1	2	3	4	5
22. I feel the funding sanctioned is very less to this hospital	1	2	3	4	5
23. I feel there is disparity in health resource allocation in rural area.	1	2	3	4	5
24. I have confidence in the government. It will improve rural healthcare.	1	2	3	4	5

25. How often does someone come to your hospital to check if all is going well?
    a. Once a week
    b. Once a month
    c. Twice a month
    d. Once in six months
    e. Never
26. Have you been involved with the hospital in conducting any preventive healthcare programs in your community?
    a. Yes b. No.

27. How often is your feedback taken in the yearly planning and budgeting of the hospitals?

a. Once a month
b. Twice a month
c. Once in six month
d. Never

28. Are you involved in the day to day affairs of the functioning of the hospital programs?

a. Yes b. No

29. Is there anyone to whom you send your daily report?

a. Yes b. No

30. If yes, do you receive any analysis of the compiled daily reports?

a. Yes b. No

31. How likely would you recommend this hospital to your family members or relatives?

a. Strongly recommend d
b. Probably recommend
c. Definitely not recommend

32. What can the government do to increase effectiveness of rural hospitals?

33. Overall, are you satisfied with this hospital as a consumer?

a. Yes b. No

Annexure 2

Performance Gap Index

Table 2: Performance Gap Index (PGI) for Health Outcome, Output and Input Indicators of Gujarat						
	PGI- Gujarat (per cent)	**Value Gujarat**	**Best Performer**	**Value**	**Least Performer**	
Outcome indicators (2008-10)						
Male Life expectancy	44	**67.2**	Kerala	72	Chhattisgarh	61
Female Life expectancy	41	**71**	Kerala	76.8	Assam	62.8
Neo Natal Mortality (NN)	56	**33.5**	Kerala	11.5	Chhattisgarh	51.1
Infant Mortality Rates (IMR)	63	**44**	Kerala	13	MP	62
Under 5 Mortality (U5MR)	59	**60**	Kerala	14	MP	92
Maternal Mortality Rate (MMR)	22	**148**	Kerala	81	Assam	390
Birth Rate	52	**21.8**	Kerala	14.8	UP	28.3
Death Rate	27	**6.7**	WB	6	Orissa	8.6
Total Fertility Rate	36	**2.5**	Kerala	1.7	Chhattisgarh	3.9
Output Indicators (2005-06)						
Undernourishment Related (Children Below three Years of Age)						
Stunted (too short for age)	84	**42**	Kerala	21	UP	46
Wasted (too thin for height)	31	**17**	Punjab	9	Maharashtra	35
Underweight (too thin for age)	62	**47.4**	Punjab	27	MP	60
Percentage Children with birth weight <	36	**22**	Kerala	16.1	Haryana	32.7
Immunization Related (Percentage children of 13-23 Months Received)						
BCG	34	**86.4**	TN	99.5	UP	61
DPT	52	**61.4**	TN	95.7	UP	30
Polio	99	**65.3**	TN	87.8	Orissa	65.1
Measles	49	**65.7**	TN	92.5	UP	37.7
No Vaccinations	39	**4.5**	TN	0	Orissa	11.6
Percentage with vaccination card	71	**36.4**	Kerala	75.3	UP	20.3
All Vaccinations	62	**45.2**	TN	80.9	UP	23

Maternal Care						
Percentage pregnant women received ANC	19	**87.4**	Kerala	99.7	Bihar	34.3
Percentage of pregnancies with PNC	39	**61.4**	TN	91.3	UP	14.9
Percentage deliveries in Health facilities	55	**52.7**	Kerala	99.3	Chhattisgarh	14.3
Percentage deliveries assisted by Health	50	**63**	Kerala	99.4	UP	27.2
Input Indicators (2008-10)						
Infrastructure Related (Nos. per hundred thousand Population*)						
No. SCs @	55	**20.98**	Chhattisgarh	33.6	Bihar	10.5
No. PHCs @	62	**3.13**	Kerala	6.2	WB	1.5
No. CHCs @	33	**0.81**	Kerala	1.3	Bihar	0.1
Total Govt. Hospitals	96	**0.6**	Uttar	7.0	WB	0.3
No. of Beds on Govt. Hospital	64	**48**	Karnataka	104.3	UP	16.3
AYUSH Hospitals	99	**0.1**	Rajasthan	5.6	Assam	0.0
Beds in AYUSH Hospitals	86	**1.53**	Rajasthan	5.8	Maharashtra	0.5
AYUSH Dispensaries	81	**1.22**	Kerala	7.0	Bihar	0.3
Manpower Related (Nos. per hundred thousand Population*)						
ASHA (Per 1000 Rural Population) @	74	**0.86**	Chhattisgarh	3.1	TN	0.1
MPW @	22	**12.9**	Chhattisgarh	17.7	UP	1.1
ANM @	83	**18.5**	AP	38.4	UP	14.5
HA @	57	**2.19**	TN	5.1	Orissa	0
LHV @	52	**2.52**	Chhattisgarh	5.3	WB	0
Staff Nurse at PHC and CHC @	51	**4.01**	Assam	8.1	Jharkhand	0
General Doctors at PHC @	90	**2.94**	Jharkhand	9.1	MP	1.5
Specialist Doctors at CHC @	95	**0.22**	Kerala	4.4	TN	0
Total Doctors (Allopathic)	50	**76.91**	Karnataka	142.8	Jharkhand	9.8
Total AYUSH Doctors	66	**57.69**	Bihar	160.6	Assam	5.3
Total Nurses @	45	**145**	Kerala	256.5	Bihar	8.6
Notes: '*' – Population as per Census of India 2011; '@' – Only Rural Population is considered.						
Source: (Government of India, 2011), (Vital Statistics-Indiastat, 2010), (SRS Bulletin, 2011), (IIPS, 2007), (RHS - MoHFW, 2012),						