SUMMARY OF THESIS

ON

PUBLIC HEALTH MANAGEMENT – A STUDY OF REPORODUCTIVE AND CHILD HEALTH PROGRAMME IN GUJARAT

BY

T. NATARAJAN

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DR. KIRANKUMAR M. JOSHI

PROFESSOR, FACULTY OF MANAGEMENT STUDIES
MAHARAJA SAYAJIRAO UNIVESIRY OF BARODA

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Reproductive and Child Health Program seeks to provide accessible, affordable and quality health care, especially to the vulnerable sections. It also seeks to reduce infant mortality, maternal mortality and total fertility rates in the country by increasing public expenditure on health, reducing regional imbalance in health infrastructure, integration of organizational structures, optimization of health manpower, decentralization and community participation. National Rural Health Mission is a major initiative to improve health care in the country which is implemented from 2005. Significant share of resources under health department is channelized under the mission and hence it is imperative to evaluate health outcomes under NRHM. While the whole chain of service delivery from policy to outcome is important, more focus is required at cutting edge level where ideas translate into action to understand the dynamics of public health management.

Importance of Public Health

Public Health is the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society (WHO). Directive Principles of State Policy of Indian Constitution consider that the State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties under Article 47. In addition, under Article 42, the State shall make provision for securing just and humane conditions of work and for maternity relief.

Evolution of Public Health System in India

In the few decades after independence, Central Government has given the policy direction and thrust to healthcare based on recommendations of a number of expert committees. An analysis of **reports of various expert committees** reflects the changes and developments in public health delivery system in India. Primary health care unit suggested by Bhore committee has become focal point of public health delivery. Programs based approach of Mudaliar committee has been adopted to control major communicable diseases affecting the community. Family planning was given impetus as a special activity after the recommendation of Mukherjee committee. Creation of multipurpose health workers and female health workers were the hallmark of recommendations of Kartar Singh Committee.

The strategy for health care development shifted from committee to policy based approach with the formulation **of National Health Policy, 1983.** Major goals of policy were to provide universal and comprehensive primary health care. An important problem

identified was the state of Maternal and Child Health Care (MCH). Reproductive and Child Health (RCH-phase I) program was launched in 1997. Subsequently, RCH-phase II which aims at an outcome-oriented program based approach was launched in 2005 along with NRHM.

National Population Policy, 2000 provided policy framework for family planning and child health goals. The immediate objective was to address contraception, health care infrastructure, and health care personnel and to provide integrated delivery of RCH services.

Millennium Development Goals (MDG) is eight development goals the members of United Nations have to achieve by the year 2015. The goals for health care are: to reduce child mortality rates by two-thirds; to reduce maternal mortality rate by three quarters; to achieve universal access to reproductive health; to combat HIV/AIDS, Malaria, and other diseases with target to halt and begin to reverse the spread of HIV/AIDS; and to achieve universal access to treatment for HIV/AIDS by 2010.

National Health Policy, 2002 was formulated from the recommendations of NPP, 2000 with key objectives to address the problem of declining sex ratio and total fertility rate. The approach was to increase the access to public health system by involving panchayat raj institutions; awareness generation activities; empowerment of women and finally, by establishing new infrastructure and upgrading existing infrastructure.

Table 1	Comparison of Goals and Outcome								
Indicator	Gujarat					India			
	Status in 2002	Goal		Achievement		Status in 2002	Goal		Achievement	
		2006 -07	2009 -10	2004 -06	2009 -10		2006 -07	2009 -10	2004 -06	2009 -10
IMR	60	45	<30	54	44	66	45	<30	58	47
TFR	2.9		2.1	2.8	2.5	3.2		2.1	2.9	2.6
MMR	389	200	<100	160	148	407	200	<100	254	212

Source: National Health Policy and Sample Registration System

Gujarat Population Policy, 2002 aims to steer the State to achieve better human development indicators. The State has achieved huge strides in economic development with growth rate higher than national average on a consistent basis. However, the state has recognised the prevalence of marked socio-economic disparities and aims to address these issues. The aim is to reduce TFR from the 3.0 to 2.1 by 2010; increase the

contraceptive prevalence from 54.2% to 70%; reduce IMR from 63 to 16 per 100 births; and reduce MMR from 389 in 1992-93 to <100 by 2010.

Rationale for Research; Review of Literature and Sources of Data

NRHM is the vehicle for realizing the objectives laid in NHP, 2002 under RCH and other programs, and was launched in 2005. Evaluation of its performance, by comparison of goals and achievements, once in mid-period and finally towards the end of policy period in 2010 (later extended to 2012) is given in Table 1. Analysis shows that the country lags behind in achieving both mid-period and final goals. Gujarat could achieve mid-period goals but lags behind in final goals. This phenomenon requires thorough understanding to bring about suitable modifications or reforms in the policy and implementation of the program. Hence, there is rationale for detailed study of the public health management during this period.

Literature of the Subject

There is reasonably good literature in the subject of public health both at national and international level. Many books, papers and reports have been publichsed from time to time by national and international organizations like ICMR, WHO, UNDP and World Bank.

A paper on Public Management and Essential Public Health Functions, published by World Bank[1] provides an overview of how different approaches to improve public sector management relate to essential public health functions.

Another paper published by Public Health Foundation of India, deals with quality of health care in Malaysia, India and Ethiopia. In case of India, the study identifies the persistence of high proportion of maternal and neonatal deaths and low institutional delivery. The study has observed that issues such as poor access, poor infrastructure and facilities, ineffective treatment, poor skills, corruption and lack of responsiveness as major problems.

A working paper by Planning Commission of India[2] evaluates quantity and quality of service delivery in rural public health facilities under NRHM. The paper identifies

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[1]Khaleghian and Monics Das Gupta - Public Management and Essential Public Health Functions, World Bank, 2005.
[2] Gill, Kaveri: A Primary Evaluation of Service Delivery under the National Rural Health Mission: Findings from a study in Andhra Pradesh, Uttar Pradesh, Bihar and Rajasthan – Planning Commission of India, Working Paper 1/2009 – PEO, May 2009.

factors affecting the implementation of NRHM, but falls short of assessing the underlying management practices in delivery of health care services.

The challenges and opportunities for health care managers are discussed in the book, "Strategic Issues and Challenges in Health Management". The lowest income groups in India receive the smallest share of subsidies for curative health care[3]. A judicious combination of supply and demand side strategies will be required to tackle this. Supply-centric strategy practised for a long time failed to reach the poor. A demand-driven approach requires improvement in availability of essential services, accountability and empowerment of clients.

The book on public health, "Essentials of Public Health Management"[4] discusses public health management as the art of using all available resources to accomplish a given set of tasks in a timely and economical manner. An important aspect of public health leadership is monitoring activities of practitioners. Governance is the oversight in the public health system, whereas management is implementation of activities.

Given the poor health indicators in the country, the book "Primary/Rural health Care System and Hospital Administration" suggests three urgent reforms[5]. First, it is time to accept that the government has at best limited capacity to deliver health services and hence a radical shift in strategy that gives greater opportunity to poor to choose between private or public health care providers is needed. Second, the Government must introduce long term training courses for practitioners engaged in treating routine illness. And finally, there is urgent need to accelerate availability of qualified doctors.

According to Jeffrey D Sachs[6], NRHM is the single largest mobilization of public health measure in the world. This has broken three common myths: First, the burden of disease among the poor is somehow inevitable. Second myth is that the aid from rich countries is wasted. But poor countries are capable of managing effective health care programs when helped. Thirdly, there is myth that families have more children because of fear of high childhood mortality. With effective health care this declines since families feel confident that their children will survive.

[3] Mahal,Ajay, J.Singh, F. Afridi, V. Lamba, A.Lumber and V. Selvaraju. 2002. Who Benefits from Public Sector Spending in India? National Council of Applied Economic Research, New Delhi.
[4] Fleming Fallon, L Jr., and Eric J Zgodzinski: Essentials of Public Health Management – Jones and Bartlett Learning, - ISBN-13: 978 1-4496-1896-4.
[5] Goel, S.L: Primary/Rural Health Care System and Hospital Administration, Deep & Deep Publications Private Ltd, New Delhi, 2010.
[6] Sachs, D Jeffrey: The Healthier Poor – Economic Times, 3rd September, 2007.

A report by the World Bank[7] defines six core performance domains: quality, efficiency, utilization, access, learning, and sustainability and provides a compendium of metrics used to measure organizational performance.

Human Development Report for Gujarat published in 2004 focuses on the link between economic growth and human development and makes suggestions to achieve higher levels of human development. The report focuses on growth in agriculture, industry, labour and expenditure on social sectors and links it with development of education, health, poverty, gender and weaker sections like tribal people.

A detailed analysis of books, papers and reports shows that there have been studies on health sector both at macro and micro level. The studies cover evaluation of national health policies, management of health care delivery, performance in health care functions and improvement in indicators and human development. The works on the subject dwell mostly on achievements and shortcomings, organizational structure of public health, inequity in health care and shortage of resources. However, it is observed that no significant research has been undertaken to study and assess management of public health delivery after launch of NRHM in 2005, which can reveal the areas of strengths and weaknesses in implementation and take necessary measures to achieve the desired goals.

Sources of Data

Many agencies collect and collate data on health care indicators through population and sample surveys. These data provide valuable details of health care status in the country. The key sources of data are **decadal census reports** which are a valuable source of information on demography, and many other socio-cultural and demographic parameters. **District Level Health Survey** provides estimates of maternal and child health, family planning and other reproductive health indicators. **National Family Health Survey** provides state and national information on mortality, family planning, maternal and child health and nutrition. **SRS bulletins** provide estimates of birth, death and infant mortality rates. **Socio-Economic review of Gujarat** gives a profile of socio-economic activities and achievements in different sectors of the state's economy. **Gujarat Health Statistics** presents the recent health statistics of State and National programs for all the districts[8].

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[7] Bradley H Elizabeth, Sarah Pallas, Chhitj Bashyal, Leslie Curry, Peter Berman: Developing Strategies for Improving Health Care Delivery: A User's Guide to Concepts, Determinants, Measurement, and Intervention Design by World Bank.
[8] Health Statistics, Gujarat, 2009-10: Vital Statistics Division, Commissionerate of Health, Medical Services, Medical Education and Research, Gujarat State, January, 2011.

Purpose of Research

From the above analysis, the purpose of research is to study the management of public health delivery system in Gujarat was undertaken in following steps.

1. To study changes in key health care indicators in primary health with particular focus on maternal and child health during RCH Phase II under NRHM in the country, Gujarat State and districts of Gujarat.

2. To study the status of health sector in the country and state: Socio-economic status; structure and functioning of health sector; health organizations; stakeholders; health legislation; health infrastructure; health personnel; health programs and; health status.

3. To study the RCH program under NRHM: Objectives, Evolution, Approach and Management before and after the introduction of NRHM.

4. To assess the performance of the RCH indicators in all districts of Gujarat before and after introduction of NRHM and estimate improvement in performance. And, on this basis, select 3 districts for field survey.

5. To study the supply and demand side of health care delivery by undertaking field survey of health workers and beneficiaries by administering questionnaires. The purpose is to ascertain the planning, organization, implementation, infrastructure, human resources, monitoring and finance from health workers. Beneficiary survey is to assess the awareness, availability, access and affordability of health services.

6. To undertake statistical analysis of data collected from the field survey; χ^2-test of hypothesis to estimate the significance of association between various factors and identify factors responsible for changes in key health parameters in these districts.

7. Based on above, to propose appropriate suggestions to policy makers to improve public health delivery in Gujarat.

Healthcare System in India

An analysis of demographic pattern shows a steady fall in crude birth and death rates from 39.3% and 18.9% in 1961 to 22.5% and 7.3% in 2009 in India. IMR, TFR and MMR too have consistently decreased during this period. Rate of decline in birth rate is likely to accelerate in future. Life expectancy has been improving over this period and sex ratio has improved from 930 in 1961 to 940 in 2011. However, the country has a long way to go before attaining the levels achieved by developed countries and many developing countries.

Socio-Economic Profile shows that between 2005 and 2010, the GDP and per capita income increased by 49% and 40% respectively. Human development index has increased from 0.482 to 0.547 in the same period. The multi-dimensional poverty index estimated on the basis of income, consumption, access to resources etc has improved from 0.313 to 0.283. However, the level of poverty in the country has declined only marginally from 28.6% in 2004-05 to 27.5% in 2010. The period has also witnessed a **modest increase in public expenditure in health a**nd education from 3.8% to 4.2% and 4.1% to 4.2%.

Health Profile

Subsequent to the launch of NRHM, CBR, CDR and population growth have decreased. However, the rate of improvement is slowing down in MMR and TFR, whereas improvement in IMR has accelerated after NRHM. While the institutional delivery has improved at a steady level, improvement in full ante-natal check up and full immunization has accelerated. Contraceptive use has shown only marginal improvement.

District is the vital link between the State and primary health centres and sub-centres. The 3-tier of health centres comprising of CHC, PHC and sub-centre provide preventive and promotive health care. **FHW is crucial in providing RCH services and is supported by MPHW,** village health guides, traditional birth attendants and Anganwadi workers.

Private sector, voluntary organizations and indigenous medical practitioners play an important role in health delivery system. Looking to the past experience, it can reasonably be expected that private sector's contribution would be substantial in the urban tertiary sector.

Health Organizations in India: The **Medical Council of India** supervises quality and standards of medical education in India; grants recognition of medical qualifications; gives accreditation to medical colleges; grants registration to medical practitioners; and monitors medical practice in India. **Indian Medical Association** is a national organization of doctors which looks after the interest of doctors and the well being of the community at large. **Nursing Council of India, Dental Council of India and Pharmacy Council of India** regulate the respective professions. The **Indian Council of Medical Research** is the apex body for formulation, coordination and promotion of biomedical research in India which has a special focus on public health.

Health Legislations: Constitution of India outlines the duties of the State in provision of health care in Articles 42 and 47 of Directive Principles of State Policy as discussed earlier. **Medical Termination of Pregnancy Act, 1971** provides for abortion services to woman in an approved clinic or hospital under stipulated conditions. **The Pre-Natal Diagnostic Techniques (PNDT) Act, 1994** has provisions to regulate use of ultra sound machines to curb their misuse for determination of sex of the foetus. **Food Safety and Standards Act, 2006** lays down standards for articles of food and to regulate availability of safe and wholesome food for human consumption. **Drugs and Cosmetics Act, 1940** aims to curb the prevalence of spurious drugs which is a major public health concern.

Health Programs in the Country: **Second phase of RCH program, RCH II commenced from 2005 along with NRHM** for five years after the end of RCH Phase I[9]. The main objective of the program is to bring about a change in three critical health indicators: reducing total fertility rate, infant mortality rate and maternal mortality rate. **National Vector Borne Disease Control Program is** for prevention and control of vector borne diseases i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya in India. **Revised National Tuberculosis Control Program (RNTCP)** comprises of detection by sputum smear microscopy examination among symptomatic patients; administration of anti-TB drugs under the direct observation of health care provider. **National Leprosy Eradication Program aims at** elimination of leprosy based on early diagnosis, prevention of disability and medical rehabilitation.

Integrated Disease Surveillance Project (IDSP) is a decentralized surveillance program intended to detect early warning signals of impending outbreaks and help initiate timely and effective response. **Rashtriya Swastha Bhima Yojna** is a new health insurance scheme for the BPL families in unorganized sector to provide insurance cover from major health shocks that involve hospitalization. **Janani Surakhsha Yojna i**s a safe motherhood intervention under the NRHM with the objective to reduce maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women under the supervision of FHW and the medical officer,

Health Care Delivery in Gujarat

Gujarat State, located in the western part of India possesses a total land area of 196924 sq. km and was established in the year 1960. For administrative purposes the State

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[9]Meeting people's health needs in rural areas, National Rural Health Mission – Framework of Implementation 2005-12, Ministry of Health and Family Welfare, Government of India.

is organized into 26 districts, 225 talukas and 18066 villages. There are 242 towns and urban agglomerations including 8 municipal corporations. From the inception, the State has witnessed not only significant rise in the State domestic product but a structural change in economy which has become highly industrialized and getting rapidly urbanized.

Demography: The population of the State increased from 506 lakhs in 2001 to 603 lakhs in 2011. Analysis shows a drop in annual growth rate in population from 2.06% during 1991-2001 to 1.77% in 2001-11. Urban population has increased from 37.35% in 2001 to 42.58% in 2011. The sex ratio has marginally declined from 920 to 918 between 2001 and 2011.

Socio-Economic Profile: Gujarat has strived to attain a high and balanced socio-economic development. The overall literacy was 79.31% in 2011 with a female literacy of 70.73% which was an increase from 69.14% and 57.80% respectively in 2001. The State domestic product has witnessed a strong annual growth of 12.63% during 2001-11 compared to 9% for the country. The growth in per capita income is 11% compared to 7.6% for the country. BPL population was 16.8% in Gujarat compared to 27.5% for the country in 2004-05. Poverty is higher in rural areas at 19.1% and 16.8% in urban areas.

Health Profile of Gujarat: An analysis of major health indicators shows progressive improvement in health status in the State. Life expectancy of both female and male has increased from 1998-2002 to 2008 by 6.4 and 1.5 years, higher than national average of 4.6 and 1.5 years. Though IMR and MMR have improved, attaining outcome targets of less than 30 for IMR and less than 100 by 2012 appears to be a tough challenge. Improvement is seen in institutional delivery, total immunization and contraceptive prevalence.

Number of PHC and sub-centres has remained the same in Gujarat, between 2005 and 2009. However, the state has better average in terms of average number of villages and population covered per health centre. New CHC were started during the period. Analysis of health personnel shows a shortfall level of 27% for health workers and 5% for doctors.

Evolution of Maternal and Child Health Program: In 1952, **National Family Planning Program** was launched with the objective of population stabilization. Family planning services were integrated with MCH and nutritional programs from fifth five year plan.

Universal immunization program was launched in 1985 to provide universal immunization to infants and pregnant women and was strengthened in 1992-93 under

Child Survival and Safe Motherhood (CSSM) project. **In 1996, Reproductive and Child Health Program (RCH I)** was launched with following components: planning, CSSM, reproductive health and prevention/management of RTI/STD/HIV. Client-centric approach, participatory community needs assessment; capacity building, management information system and target free approach.

RCH Phase II Program: The second phase of RCH program commenced from April, 2005 along with NRHM for five year period up to 2010 (later extended to 2012). The main goals were to bring about a change in three critical health indicators: to reduce the IMR; to reduce maternal mortality; and to reduce TFR. To achieve these goals, NRHM will facilitate improved access and utilization of quality health services; forge partnership between central, state and local Governments; involve panchayat raj institutions; provide flexibility to states to promote local initiatives and; develop framework to promote inter-sectoral convergence.

NRHM in Gujarat

NRHM is the umbrella program of Government of India, launched in 2005 subsuming all majorpublic health initiatives including RCH II.

Vision: The overall goal is to improve the quality of life of people of Gujarat as articulated in the Gujarat Vision 2010 and State Population Policy 2002. The specific objectives are

1. Reduce MMR from 172 (in 2006) to 100 per 100000 live births by 2012
2. Reduce IMR from 50 to 30 by 2012
3. Stabilize population by reducing TFR from 2.4 to 2.1 by 2012

NRHM Plan

1. **Institutional Strengthening:** The State would engage the service of experts/ consultants and put effective management systems to strengthen the state health society, state empowered committee on RCH, state supervisory board and other authorities.

2. **Training:** Capacity building is recognised as priority intervention in RCH II. For this, a capacity building of program management staff at district level has been planned.

3. **Financial Management:** Program Director is responsible for disbursement and accounting of funds. Tailor made accounting software is provided for disbursement of funds and its monitoring.

4. **Quality Assurance:** Quality Assurance is important to minimize variations in health care by standardizing managerial and clinical practices and procedures to improve

outcomes. This is institutionalized by establishing quality assurance teams at State and district level.

5. **Behaviour Change Communication**: To achieve the goals set under the program, there is a need to increase the coverage, demand and utilization of services. Communication strategy is to be formulated keeping in mind these objectives.

6. **NGOs involvement in RCH II:** Gujarat is well known for its voluntary movements and cooperative movement. NGOs partnership is envisaged for running PHC, programs like pulse polio, HIV/AIDS and ICDS, training and awareness programs.

7. **Convergence and Coordination:** To achieve synergy, NRHM plan seeks convergence in planning, activities and resources among concerned departments. State Health Society and District level committee monitor convergence.

8. **District Implementation plans:** These plans are prepared based on local needs with community specific interventions and thrust on demand generation. After two years the objectives are revisited based on information collected through community needs assessment.

9. **Thrust Activities under NRHM/RCH II:**

a. **Comprehensive malnutrition Scheme:** Realizing the need to address malnutrition in the state, a life cycle approach aimed to improve quality of food intake, universal coverage of pregnant, lactating mothers and children up to 14 years through Mamta Abhiyan, ICDS and MDM and iron supplementation for adolescent girls is incorporated in the plan. **b. Strengthening Outreach Services:** Mamta Abhiyan[10] is an approach to strengthen outreach of RCH Services. It aims at preventive, promotive and curative services through convergence with ICDS and participation of community. **c. Services to difficult areas and marginalized communities:** To address equity issues in health, initiatives like Chiranjeevi yojna to provide access of indigent sections to quality maternity services were taken up. To reach out to marginalized communities living in far-flung areas, the state has Mobile health units functioning in tribal, peri-urban and difficult areas. **d. Public Private Partnerships:** Under Chiranjeevi Yojna, a PPP initiative, all BPL families are covered. Under this scheme, an expectant mother from BPL family is given entitlement coupon for deliveries. She can use it to go to an identified private provider for delivery.

10. Reporting System

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[10] Yoong, Joanne- Does Decentralization Hurt Childhood Immunization?- Department of Economics, Stanford University, October 20, 2007.

The program lays special emphasis on timely submission of reports. Software and MIS tools have been developed for use up to PHC level where they will ensure uniformity and regularity in data collection and reporting.

Research Approach and Methodology

As the purpose of the research is to study the management of public health delivery, the focus of the study is field, at the level of health centres. District is the unit for the implementation of RCH Program. Therefore, the effectiveness of functioning of public health delivery system can be evaluated by analysis of performance of health care outcomes at district level.   At the cutting edge level, health care is provided by FHW and MPHW at sub-centres and PHC.   Thus the availability, quality, efficiency and effectiveness of management of health centres in terms of infrastructure, manpower and resources are critical for the performance of the public health delivery system.

On the other hand, demand for health services emanates from people, mainly women and children in case of RCH program. Beneficiaries of these services who seek preventive and curative health care are potential consumers of the services. The aim of NRHM is to enhance the demand for health care to improve the indicators.

Two Stage Study

Considering all these aspects, methodology for research requires a two stage study of public health management. In the first stage, performance of all districts is evaluated for various health care outcomes by measuring key RCH indicators. The aim is to evaluate the performance of districts before and after the introduction of NRHM and assess the improvement during the period. Based on this, three districts are selected for second stage of research. The steps involved in the first stage are:

First Stage Research

1. The key indicators chosen to evaluate the maternal, child and family planning outcomes were: institutional delivery, full ANC check-ups, full immunization of children, prevalence of contraceptive use, total fertility rate and sex-ratio were selected. The main source of data was Census, DLHS and NFHS reports, and SRS bulletins.

2. Assess the performance of indicators in all the districts before and after the implementation of NRHM program and estimate improvement during the period.

3. Actual performances for each district are estimated by calculating the relative performance with respect to the overall performance in Gujarat, taking State's

performance as benchmark. Districts above zero have performed better than state average and those below zero have performed below state average.

4. Percentage improvement (or otherwise) for each of the selected parameter is estimated. An equal weighted average of the percentages is estimated to ascertain the overall improvement in the district performance.

5. In the next step, districts were ranked for performance before the launch, after the launch and improvement during the period. Based on the ranks, districts were classified into three groups: above average, average and sub-average performers.

6. One district from each category was selected for field survey on a random basis. District selected were Junagadh, Ahmedabad and Bharuch.

Second Stage Research- Field Survey: Assessment, Analysis & Findings

After selection of districts, field survey was undertaken in the second stage which has two components: survey of health workers to ascertain supply of public health delivery and survey of beneficiaries to ascertain the demand and satisfaction with services.

Survey of Health Workers

Supply side management was studied through survey of health workers at PHC and sub-centres to ascertain factors which affect public health delivery: planning; organization; human reources; infrastructure and facilties; activities and targets; time management; finance and monitoring & review. Survey aims to identify the key work areas of health workers from their point of view. Efforts for improving the awareness of beneficiaries, and targeted activities were also assessed. Availability of infrastructure and facilities are also evaluated. Key issues related to human resource management which is the most critical factor in delivery of health care was also assessed. Time management, monitoring and review, and exercise of financial powers were also assessed in the survey.

Survey of Beneficiaries/ Patients

Though public health services are made available to the entire population, the actual market depends on socio-economic and demographic profile of the people. Health care providers in the market include traditional health practitioners, health healers, nurses and qualified private practitioners apart from health centre facilities. The target group was persons who had availed RCH services in recent past. The purpose was to ascertain the impact of initiatives under RCH II and NRHM from them.

The purpose of beneficiary survey was to assess the management of public health delivery at health centres from a demand side perspective. Socio-economic factors like

literacy, income, poverty, occupation, caste, age, family and gender of beneficiaries affect the health seeking behaviour. The survey ascertained: awareness of public health programs; availability of health care personnel and resources; accessibility in terms of physical infrastructure and facilities and; affordability in terms of cost of health care, spending on private health care and willingness to pay for better services. Purpose of visit, quality of health care and repeat visits to health centres in future was also assessed.

Sampling Strategy and Data Collection

Sample for survey of health workers was selected randomly among all the health workers of the districts. In case of beneficiaries, respondents who had availed health care service in health centres in the last 2 years were selected on a random basis. Thus, a stratified random sampling method was adopted in case of beneficiaries/patients.

Sample size was estimated based on the population size of the health workers in these districts and for 5% confidence level of estimating statistical variates. In case of health workers, the sample size was 50, 67 and 55 in Ahmedabad, Bharuch and Junagadh districts. In case of beneficiaries/patients the sample size was estimated at 95, 91 and 94 respectively with a total of 280 for all districts.

Separate questionnaires were prepared for Health Workers and Beneficiaries/patients for field survey and both were administered in Gujarati. The questionnaire was organized to gather the response of health workers and beneficiaries to obtain their experience, feedback and assessment on different issues of management of health delivery. To obtain different type of information nominal, ordinal and cardinal responses, ranking and continuous scales were used in the questionnaire.

Data Analysis

The collected data was verified for completeness and consistency. Then the data was entered in MS-Excel spreadsheets with proper codification based on the type of data. Codified data was classified and organized into different categories to facilitate analysis.

Based on the above, tabulations were made for further analysis. In case of health workers, tables were generated with district and gender as basic parameters. The broad categories were health functions, planning, infrastructure, facilities, human resources management, monitoring and time management. In case of beneficiaries tables were generated for each demographic and socio-economic factor: age, family size, occupation, income, poverty, caste and education of beneficiaries/patients against key behavioural variables, attributes and opinions.

Tables were generated with numeric as well as percentage distribution for different categories. Thus, the tables could be used for further statistical analysis and ascertaining key relationships to make meaningful interpretations

χ^2 - Test of Hypothesis

The strength of association between various factors and attributes, behaviour and opinions were ascertained by χ^2 - Test of hypothesis. This was carried out for various factors and parameters across the districts[11].

Pearson's chi-square statistic was used for comparison based on tests of goodness of fit and tests of independence. For estimating the chi-squared test statistic, X^2, degrees of freedom, d and probability, p, **Version 4.0 of PEPI software** was employed. Null hypothesis was defined as absence of significant difference between the districts in the chosen parameters. This was evaluated at 95% confidence level based on which the null hypothesis was accepted or rejected (rejected for $p <= 0.05$) [12].

Based on this, the tabulated data was further analyzed to deduce and derive interpretations[13] for districts, State, category of health worker and category or group of beneficiaries on the basis of which recommendations are formulated.

Multiple Linear Regressions (MLR)

MLR is a very useful statistical model which can explain the strength of relationship between dependent and independent variables and significance of each independent variable. The regression equation generated from MLR[14] has predictive value to the extent these factors affect the dependent variable and also gives the directional impact based on the sign of the coefficient. MLR was performed for key dependent variables: Target Achievement and Motivation Level in case of health workers and Quality of Service and Repeat visit in case of beneficiaries. MLR was performed with the **Statistical Package for Social Sciences[15] (SPSS) version 19.**

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[11] Stockburger, David W- Introductory Statistics - Concepts, Models and Applications, Missouri State University, Revised Version, 1998
[12] DiMaria, Rose Ann- Understanding and Interpreting the Chi-square Statisitic (χ^2): WVU School of Nursing, Charleston Division
[13] McCreery, Charles: The Chi-Square Test- A test of association between categorical variables, Oxford Forum, Psychological Paper No. 2007-1.
[14] Trammer, Mark and Mark Eliot: Multiple Linear Regression, Cathie Marsh Centre of Census ans Survey Research.
[15] Field,A: Discovering Statistics Using SPSS (Introducing Statistical Methods Second Edition), Sage Publications, 2005.

For each of the dependent variable, SPSS was run for all the possible independent factors obtained from the survey in the first iteration. In subsequent iterations, independent variables which have no significant impact or correlation were eliminated. Eventually, the process identifies key factors significantly affecting the dependent variable. Null hypothesis was that each independent variable has no significant impact at 95% confidence level. The key test statistics applied for analysing and interpreting the output are: sigma (if $p <= 0.05$, then the hypothesis is rejected); R^2, the coefficient of determination explains the percentage of variation in dependent variables due to the selected independent variables and; Beta β, the coefficient of the independent variable. The magnitude and direction of β indicates the nature of influence on dependent variable.

Key Findings from First Stage Study: The first stage research of the performance of the districts reveal that in overall improvement, Junagadh district (31.8%) has done better than other districts. Navsari (43%) had done better than other districts before NRHM and Rajkot (25.8%) after NRHM.

Indicatorwise analysis shows that while some districts have done well in many indicators, some of them have fared poorly in many indicators. In TFR, Banaskantha, Surendranagar and Bhavnagar have shown good improvement whereas Valsad, Dahod and Sabarkantha have low improvement. In ANC full coverage highest improvement was in Junagadh, Amreli and Rajkot and the lowest in Sabarkantha, Dangs and Narmada. Improvement in institutional delivery was the highest in Junagadh, Kutch and Jamnagar and lowest in Dangs and Sabarkantha. Improvement in full vaccination was the highest in Dahod, Surat and Narmada and lowest in Bharuch and Amreli. Improvement in contraceptive prevalence was highest in Banaskanta, Patan and Valsad and lowest in Narmada, Bhavnagar and Navsari. Sex ratio witnessed highest improvement in Dangs, Kheda and Ahmedabad and lowest in Kutch, Amreli and Surat.

For the purpose of field survey districts of Junagadh, Ahmedabad and Bharuch were selected. Junagadh had below average performance (-7%) before and above average performance after NRHM (20%) with highest improvement during NRHM (31.8%). Ahmedabad had above average performance before (12%) and after (12.1%) NRHM with an improvement (3.5%) which is near State average. Bharuch had above average (11.1%) performance before and below average (3.6%) performance after NRHM with an improvement (0.5%) below the State average. These districts are also located in distinct

geographical regions: Ahmedabad in north-central, Junagadh in Saurashtra and Bharuch in South Gujarat thereby representing different geogrpahical regions and social groups.

Key Findings from Field Survey

Supply of Health Care: Health Workers

Health Planning: It is found that the involvement of local bodies like Gram Panchayat and Gram Sabha and NGO in preparation of health plan is weak. Even when there is involvement, the quality is below desired level. Significant difference across the districts is observed in quality of involvement of groups.

Infrastructure: Though health centres have been built, connectivity by road and transport infrastructure has to be improved in one-third of cases, especially in remote villages. In most cases, visit to beneficiary houses is by walk which can be time consuming and reduce the productivity. **Facilities:** Condition of health centres and amenities like toilet, sitting etc., was found to be good or very good. No significant difference is found in infrastructure and facilities across districts. **Resources:** In one-third of cases, health workers have reported stock-out of drugs. Condition of equipments is mostly good or very good.

Activities: Though target based planning and execution is prevalent in some activities like family planning, it is nearly absent in key child health care activities like immunization. Significant variation is observed in level of difficulty in achieving the targets. An important objective of NRHM is to improve the demand for health care among the people. However, it is revealed that more than $1/3^{rd}$ rarely approach for services. Home visit to beneficiaries were found to be low in Ahmedabad. Significant difference is observed in place of visiting beneficiaries.

Human Resources: The level of motivation in found to be good or very good in less than half the cases. Involvement in decision making was good in quarter of the responses in which there is variation across districts. Quality of evaluation is perceived to be good in 40% cases. Similarly, satisfaction with pay and allowances was found to be good in 44% cases. As much as 42% feel very high burden of work and 73% think the clarity of work is low. More than 50% perceive poor opportunity for career growth. Most of them find quantum of training to be sufficient and quality of training to be good or very good. Significant variation is observed across districts except in clarity of work, satisfaction with pay and allowances and quality of training.

Monitoring & Review: Reporting and reviews are found to be useful in most cases. However, many of them think that the number of reports is high. No significant difference is found in reviews whereas there is significant difference in reporting.

Time Management: Though there is significant difference in activity-days across districts, only around half of the health workers feel that they can use their time productively.

Financial Powers: A quarter of health workers feel that it is easy to exercise financial power to undertake repairs and maintenance works and 30% feel they can do emergency purchases when they need it. Significant difference is observed across districts in emergency purchases and no significant difference in repairs and maintenance works.

Regression:

In case of health workers, Target Achievement (TarAch) and Motivation (Mot) are the key outcome and output factors which are influenced by many other factors. MLR on all independent variables gives an R^2 of 0.368 which can explain 36.8% of performance. Factors which have significant (Sig $<=$ 0.05) impact on target achievement are involvement in decision making (IDecM), burden of work (BWrk), chances for promotion (CProm) and reporting(Rep). These factors explain 23.2% of performance ($R^2 = 0.232$).

TarAch =   1.757+ 0.273*IdecM+0.583*Bwrk+0.149*Cprom-0.171*Rep

Regression for motivation as dependent variable was performed on all the independent variables with an estimated R^2 of 0.525. Thus these factors explain 52.5% of level of motivation of health workers. Key factors are involvement in decision making (IdecM), evaluation of work (EvaWrk) and review of work (RevWrk) which significantly explain the level of motivation ($R^2 = 0.411$).

Motivation =   -0.282+ 0.301*IdecM+0.315*EvaWrk+0.230*RevWrk

A comparison of common factors clearly show that involvement in decision making and monitoring emerge as key factors for target achievement whereas promotion and evaluation of work are important for motivation of health workers.

Demand of Health Care: Beneficiaries/Patients

Demographic Factor: Majority of beneficiaries in Ahmedabad were less than 25 years whereas in Bharuch and Junagadh majority were 26-35 years group. Female respondents

were younger than the male. Significant difference was observed in age groups across districts. No significant difference was observed in family size of respondents.

Socio-Economic Factors: No significant difference was observed in occupation, which in majority cases was household work for female and Labour for male. Majority of respondents had below Rs 3000 monthly income, especially in Ahmedabad. Most of the respondents were BPL, with highest share in Ahmedabad. Most of the beneficiaries were non-literates in Ahmedabad and primary level educated in Bharuch and Junagadh. Caste composition varies depending on the region. Significant difference is observed in these factors.

Awareness Programs: Largest participation was in immunization followed by family planning and communicable diseases programs. ASHA workers are the most visited health personnel which show the strong penetration of NRHM. No significant difference was found in type and extent of participation whereas significant difference is found in utility of awareness programs.

Health care Seeking Behaviour: Health workers tend to have strong influence on beneficiaries, but decisions are taken by spouse or parents. Purpose of visit to health centre is immunization followed by communicable diseases and family planning. No significant difference is found except in purpose of visit.

Infrastructure & Facilities: Availability of transport and condition of roads vary significantly. Situation is same for condition of health centre and amenities and cleanliness.

Quality of Service: In majority of cases Doctors/ Health workers were available in health centre. Though majority found the quality of service as good, there is a significant variation.

In many cases drugs//lab services had to be obtained from outside. Majority would return to health centre in future, though there is variation in this regard. Significant variation is observed in most of parameters of quality.

Documentation: This was found to be useful but not available uniformly in all centres.

Financial Issues: Majority of the beneficiaries availed service from private practitioners and most of them spent less than 3000 in previous year. Majority of respondents are willing to pay for better services.

Demographic and Socio-Economic Factors: Analysis of these factors with respect to health care reveals interesting associations. Age group has significant impact on health seeking behaviour but not on awareness and willingness to pay for better services. Family

size has no significant impact on health seeking behaviour and willingness to pay for better services but has impact on awareness and purpose of visit. Income, poverty level and literacy have impact on all aspects of health care. Same is the case with caste of the respondents. Occupation of the respondents has impact on the health seeking behaviour but not on awareness and willingness to pay for better services.

Regression: In case of beneficiaries, the dependent factors identified were quality of service availed (QualServ) and repeat visit to the health centre (RepVist). Linear multiple regressions were performed on socio-economic variables and health delivery variables obtained in the survey.

Regression performed for quality of services with all socio-economic factors as independent variables generated an estimated R^2 of 0.066 which indicate that socio-economic factors do not explain the quality of service availed by beneficiaries. None of the factors have significant impact on the quality of services. The R^2 for regression performed on Health delivery factors is 0.57, which indicates that a substantial 57% of quality of services is explained by these factors. Among the factors, utility of awareness programs (UtilAwar), vehicle availability (VehAval), cleanliness (Clean) and counselling (Couns) emerge as statistically significant factors affecting the dependent variable. MLR performed on these four factors has an estimated R^2 of 0.499, which indicates that 50% of quality of services is explained by these factors.

QualServ = 0.178+0.148*UtilAwar+0.142*VehAval+0.275*Clean+0.374*Couns

In case of repeat visit to health centre, the regression on socio-economic factors gives an R^2 of 0.151. Regression performed on Health delivery factors generates an R^2 of 0.247. Only quality of service (QualServ) is found to have statistically significant impact on repeat service to health centre. Simple linear regression performed on this factor generated an R^2 of 0.208 and β coefficient of 0.456.

RepVisit = 0.279+ 0.456* QualServ

Thus among beneficiaries utility of awareness programs, vehicle availability, cleanliness and counselling are the key and significant factors in improving the quality of services as well as repeat visit of beneficiaries.

Recommendations

Findings from survey of health workers and beneficiaries provide insight into practices in public health management from both supplier and consumer sides of health care. These findings reveal the extent to which the intentions in NRHM are translated into action. They are the basis for formulating recommendations for improvement in the health care delivery in Gujarat and Country and also identify future scope for further study.

Health Workers

Health Planning: The extent and quality of involvement of local bodies like Gram Panchayat and Gram Sabha in preparation of health plan is weak. Though there is institutional mechanism for participation, it requires proper implementation. It is desirable to have a mechanism for approval of health plan at gram panchayat level with an inbuilt incentive mechanism to encourage preparation of well thought-out plans.

Infrastructure: Though health centres have been built, connectivity by road and transport infrastructure has to be improved, especially in remote villages. These centres can be given priority in District Planning funds. In order to improve mobility of health workers, subsidised loan for purchase of 2-wheelers can be provided. **Facilities:** Condition of health centres and amenities like toilet has to be more women-friendly as they constitute larger share of service providers as well as beneficiaries.

Activities-Target Determination: It is observed that there is significant variation in difficulty in achieving the target. This requires that the process of target setting should be scientific while taking into account of the local issues.

Demand for Health Care: An important objective is to improve the demand for health care among the people. However, it is revealed that more than $1/3^{rd}$ rarely approach for services. Thus the latent demand for these services needs to be converted to real demand which will improve the health care outcome. Socio-economic and demographic characteristic of those people can be identified for focussed targeting of awareness programs.

Drug Availability: In some cases, health workers have reported stock-out of drugs. Supply chain management and storage of drugs has to be addressed depending on the consumption pattern, distance from main storage centre and other emergency supplies available. A proper real time inventory management system can help to overcome the problem to a large extent.

Vacancy of Health Personnel: The vacancy level in health workers is 27%. There is an urgent need to recruit personnel to fill these vacancies and have larger share of female as health workers.

Burden and Clarity of Work: Burden of work improves the performance in terms of target achievement. However, absence of clarity of work among the health workers in their day-to-day work has to be addressed at the district level by preparing and updating job chart, prioritising tasks of each health worker and reviewing the performance on that basis. Though health organization must be capable of responding to emergency and unforeseen situations, all the regular activities must be planned and organized properly. Absence of clarity can be significant reason for high burden of work.

Involvement in Decision Making: This emerges as key factor for improvement of performance and motivation of health workers. Since health workers are the main interface in public health delivery system, their knowledge and feedback are important for success of health care initiatives. An institutional mechanism for their involvement in decision making would enhance the effectiveness of delivery system.

Opportunity for Career Growth/ Promotion: Though there is limited scope for improvement in this respect, health workers can be considered for posting as staff nurse in addition to public health nurse after providing relevant short/medium duration training.

Performance Evaluation: High degree of variation is found across the districts which require reasonable level of standardization, uniformity and timely submission. Moreover, this may have detrimental effect on the morale and motivation of employees if it is not seen to be just and fair.

Pay & Allowances: Substantial proportions of health workers are not fully satisfied with the pay & allowances. Since pay and allowances in Government are based on periodic pay commission recommendations, it is difficult to make any major changes. However, Health Department may devise monetary and non-monetary rewards to recognize outstanding achievements and contribution to health care personnel at different levels.

Training: Though the quality of training was found to be good in all districts, it was found to be inadequate in some cases. Training and workshops have to be conducted to meet minimum level of requirements for all health workers. In addition, need-based

training programs can be designed after assessing the feedback of health workers and doctors.

Monitoring & Review: In reporting, there is significant variation across districts. This can be standardized to some extent using information technology and based on the experience in the districts to ensure optimality and effectiveness. Since too much of reporting has adverse impact on performance, this has to be optimized with use of technology.

Financial Powers: NRHM and RCH II provide for financial powers to health workers to undertake minor repairs and emergency purchases. In practice, it is not easy to exercise these powers and hence requires simplification of procedures and training of health workers in procurement.

Demand for Health Care: Beneficiaries/Patients

Age of Beneficiaries: Most of the male beneficiaries avail health care only after the age of 25. Thus, they do not have proper guidance and counselling before the marriageable age. In general, RCH activities tend to be women and child centric and rightfully so. However, men being key decision makers in most of the households, they have to be targeted for adolescent, pre-marriage and peri-conceptional counselling and awareness programs.

With increase in age, the type of health service required undergoes a change: from maternal health to immunization to family planning. Maternal health and nutrition have moderate demand in all age groups. Thus, right services have to be made available to the right age groups by the health care system

Income and Literacy: Income level of respondents is a key differentiator of various aspects of health care and right and relevant health care can be designed based on the income level of families within a given social milieu.

Migration: It is observed that Scheduled Tribe population in Ahmedabad have low participation in awareness programs. People of tribal community migrate to urban centre for seasonal and short term work with families. Special attention may be required for migratory population to avail health care.

Awareness Programs: Since level of participation in maternal health programs require to be increased and sustained over a longer period, it can be linked to some other activities or

incentives so that there is meaningful participation by beneficiaries. Utility of awareness programs has to be assessed for their impact to improve quality of services

NGO: It was found that they were active in Ahmedabad which is an urban centre but nearly absent in other two districts which are largely rural. Funds provided to NGO under NRHM should have incentive structure to provide services in remote and rural areas of the State.

Guidance seeking / Decision Making Behaviour: While the source of guidance could be family or health workers, decision making is a personal choice or by spouse. Thus members of the family especially spouses and parents must be engaged in awareness programs.

Purpose of Visit to Health Centre: Maternal health and nutrition do not constitute key reasons for visit to health centre even among female. This situation needs rectification so that the beneficiaries are well targeted and demand for these services improves.

Infrastructure: Similar to findings from health workers surveys, sizeable share of beneficiaries indicate the need to improve availability of transport and road connectivity. Hence priority has to be given to provide funds to improve road connectivity in weak areas.

Facilities: Condition of health centre, cleanliness and availability of water, toilet etc., varies across districts. During this survey, the need for improvement was found in Ahmedabad, followed by Junagadh and Bharuch.

Counselling at Health Centre: This has a strong bearing on the quality of services. There is significant variation in counselling and quality of service across the districts. This is particularly low in Ahmedabad on both the counts. Even repeat visit is low in Ahmedabad. Socio-economic and other characteristics require detailed study to examine and understand the problem.

Drug/Lab Services: In nearly 50% cases, beneficiaries had to get drugs or laboratory services from outside. This needs to be addressed with proper supply chain and inventory management as discussed earlier. Similarly reliable lab services must be made available and can even be outsourced by providing space for laboratory at the health centre premises.

Documentation & Records: This was found to be extremely useful by beneficiaries. However, the availability is not extensive and uniform. Effective use of information technology tools can ensure a reliable and useful database for this purpose.

Repeat Visit to Health Centre: Analysis of repeat visit shows that beneficiaries with higher literacy are likely to visit again compared to those with low literacy. Similarly BPL beneficiaries are less likely to return compared to non-BPL. Thus, the low literacy and low income beneficiaries require extra focus so that they return to health centre for health care.

Future Scope

Multi-Agency Approach for Immunization: Target based planning and execution is nearly absent in key child health activities like immunization. Given the need to improve immunization level in the State, it can be evaluated whether there is a case for multi-agency approach involving private partners to address the issue by involving qualified private health practitioners by providing reasonable service charges.

Time Management: Nearly half of the health workers think they are not able to use their time very effectively. This is an issue which depends on many factors like planning, local issues, burden of work and personal issues. Information technology can be an important tool for effective time management. However, it requires a detailed study to understand this issue properly as this is linked to many other factors like local priorities and emergencies.

Income: In Ahmedabad which is an urbanized district most of the beneficiaries were from low income groups whereas in Bharuch and Junagadh, which are largely rural, sizeable proportion of non-low income groups avail health centre services. This relationship has to be explored with further detailed study to understand the implication of income in totality.

Literacy: Similar to income, in Ahmedabad more proportion of beneficiaries are non-literate compared to other districts. Multiple interpretations similar to the above can be made in this case also and hence requires further study.

Migration: People of tribal community migrate to urban centre for seasonal and short term work with families. But they may not have access to public health services during the stay which is the reason for low percentage of demand for service. This issue also requires thorough study and assessment to make proper policy initiatives.

Purpose of Visit: It was observed that the purpose of visit of poor, low income, low literate and backward caste beneficiaries is mainly to treat communicable diseases. In contrast, other groups visited for immunization and family planning services. This shows that the vulnerable sections approach for curative rather than preventive health care. Detailed further study is required to understand this phenomenon to make suitable policy initiatives.

Visit to other health practitioners: Majority of the beneficiaries had visited other health practitioners before coming to health centre. This resistance to visit health centres as first choice of health care is a phenomenon which requires thorough study and examination.

Finance: Nearly 3/4th of beneficiaries are willing to pay for better services. Strangely, this share is high among the low income group, less literate and labour groups. It is important to evaluate this phenomenon, ascertain the factors driving this opinion and make meaningful deductions.

Conclusion

Management of public health delivery at the field level requires multi-pronged reforms in health delivery system. At one level this includes, improving the process of preparation of health action plan, reducing gaps in the availability of health personnel, meaningful involvement of stakeholders at the local level, improving the motivation, eliminating factors which hamper productivity, reorganize health workers and simplification of procedures to facilitate exercise of financial powers. At another level, a customer-centric approach needs to be inculcated in the health care service to enhance demand for these services. This is the recurring theme in the work as assessed from the surveys. This requires an approach in which the socio-economic and demographic factors of the target population must be understood and incorporated in formulating policy and devising the action plan.

PUBLIC HEALTH MANAGEMENT- A STUDY OF REPRODUCTIVE & CHILD HEALTH PROGRAMME IN GUJARAT

BY

T. NATARAJAN

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DR. KIRANKUMAR M. JOSHI

PROFESSOR, FACULTY OF MANAGEMENT
MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

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Faculty of Management Studies
M. S. University of Baroda
Vadodara

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This is to certify that this Ph.D work, entitled

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Student   **Guide**

T Natarajan, IAS   **Dr Kirankumar M. Joshi**
Commissioner of Technical Education   Professor
Government of Gujarat   Faculty of Management Studies
                                           Maharaja Sayajirao University
                                           Vadodara

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Graphs

Chart/Pictures

Abbreviations

ASHA:	Accredited Social Health Activist
ANC:	Ante Natal Care
ANM:	Auxiliary Nurse & Midwife
AIDS:	Acquired Immuno-Deficiency Syndrome
BPL:	Below Poverty Line
CBR:	Crude Birth Rate
CBHI:	Central Bureau of Health Intelligence
CBHV:	Community Based Health Volunteers
CDR:	Crude Death Rate
CHC:	Community Health Centre
CSSM:	Child Survival and Safe Motherhood
DLHS:	District Level Household Survey
FHW:	Female Health Worker
FSSAI:	Food Safety and Standards Authority of India
GDP:	Gross Domestic Product
HDI:	Human Development Index
HDR:	Human Development Reports
ICDS:	Integrated Child Development Services
ICMR:	Indian Council of Medical Research
IEC:	Information; Education and Communication
IMA:	Indian Medical Association
IMR:	Infant Mortality Rate
IDSP:	Integrated Disease Surveillance Project
JSY:	Janani Surakhsha Yojna
MCH:	Maternal and Child Health
MCI:	Medical Council of India
MDG:	Millennium Development Goals
MMR:	Maternal Mortality Rate
MNP:	Minimum needs Program
MOHFW:	Ministry of Health and Family Welfare
MPHW:	Multi-Purpose Health Worker
MTP:	Medical Termination of Pregnancy
NABH:	National Accreditation Board for Hospitals & Healthcare Providers
NACO:	National AIDS Control Organization
NFHS:	National Family Health Survey
NHP:	National Health Policy
NIFHW:	National Institute of Health & Family Welfare
NMEP:	National Malaria Eradication Program
NPP:	National Population Policy

NRHM:	National Rural Health Mission
NSSO:	National Sample Survey Organization
PCI:	Pharmacy Council of India
PHC:	Primary Health Centre
PHFI:	Public Health Foundation of India
PNDT:	Pre-Natal Diagnostic Techniques
QCI:	Quality Council of India
RCH: (MCH)	Reproductive and Child Health
RGCC:	Registrar General and Census Commissioner
RKS:	Rogi Kalyan Samiti
RSBY:	Rashtriya Swastha Bhima Yojna
RTI:	Reproductive Tract Infection
SIHFW:	State Institute of Health & Family Welfare
SRS:	Sample Registration System
STI:	Sexually Transmitted Infection
TFR:	Total Fertility Rate
UNDP:	United Nations Development Program
UNICEF:	United Nations Children's Fund
WB:	World Bank
WHO:	World Health Organization

Chapter I

I. Public health system in India: An Introduction and Evolution

This chapter gives an account of national health policies, health infrastructure, priorities and initiatives in health sector during the years after independence.

1.1   Introduction

Health is a positive state of well being in which harmonious development of physical and mental capacities of individual lead to enjoyment of rich and full life. Health is thus vital for concurrent and integrated development of the individual and community and for socio-economic development of the country. According to World Health Organization, Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity[1].

Public Health is the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society (WHO). Public health is a social and political concept aimed at improving health, prolonging life and quality of life among whole populations through health promotion, disease prevention and other forms of health intervention.

Directive Principles of State Policy of Indian Constitution considers that the State shall regard raising of the level of nutrition and standard of living of its people and improvement of public health as among its primary duties under Article 47. In addition, under Article 42, the State shall make provision for securing just and humane conditions of work and for maternity relief. The health system in India is expected to perform with objectives based on these principles and evolve its spirit and structure to achieve these objectives.

1.2 Evolution of Public Health System in India

After independence, India embarked on a planned effort to raise standard of living of the people and impetus was given to health care, which was made integral part of socio-economic development. Over the past six decades, public health infrastructure and services has undergone remarkable changes and huge expansion in scale and nature based

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[1]Health Promotion Glossary: Division of Health Promotion, Education and Communications (HPR) Health Education and Health Promotion Unit (HEP), World Health Organization, Geneva, 1998.

on recommendations by a number of expert committees[2]. Health being a State subject under the Constitution, State Governments has undertaken various initiatives to improve healthcare in their respective States. The Central Government has given the policy direction and thrust to healthcare through many national programs.

1.2.1 Expert Committee Reports

1. Bhore Committee

Just before independence Bhore committee[3] was constituted in 1943 to survey existing health conditions and organizations to make recommendations for future development. The committee emphasized the need for social orientation of medical practice, a high level of public participation and consequent development of environmental health. The two key recommendations are:

i) A blue print for Primary Health Centres (PHC), to serve a population of 10000 to 20000 and

ii) Formation of village health committees to obtain the active cooperation and support in development of health programs.

2. Mudaliar Committee

A committee under the chairmanship of Dr. Lakshmanaswami Mudaliar was set up in 1959 to assess the field of public health and medical relief. The important features of the recommendations are:

i. Strengthening of district hospitals

ii. Upgrading and strengthening of PHC

iii. Extension of functions of University Grants Commission to education in the field of medicine.

iv. Institution of National programs for malaria eradication, small pox, cholera, leprosy, tuberculosis and filariasis.

v. Levying of small fee for those availing hospital services, except those who are really poor.

3. Chadha Committee

A committee was constituted under the chairmanship of Dr M S Chadha in 1963 to go into the details of requirements related to planning and functioning of PHC and

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[2] Kumar, Virendra – Government of India: Committees and Commissions in India Vol. 7: 1966.

[3] Health and Survey (Bhore) Committee Report: Government of India, Volume 1, Delhi Publications Division, 1946.

performance of National Malaria Eradication Program. The committee recommended strengthening of rural health services, vigilance through medical institutions and developing multipurpose domiciliary health services for all health programs.

4. Mukherjee Committee

The Central council of health, in 1965, appointed this committee to undertake a review of family planning and its strategy. The committee while recommending strengthening of administrative set up from PHC to State headquarters also recommended delinking of family planning from malaria eradication program, so that the former can receive undivided attention.

5. Jain Committee

A study group was constituted in 1966 under the chairmanship of Sri A P Jain to look into medical care services. The group studied the working of different hospitals in the country to improve the standards of medical care. The key recommendations were to provide specialist medical care at district hospitals, and improving the capacity and coverage of PHC to provide maternity facilities.

6. Kartar Singh Committee

This committee was constituted based on recommendation of central family planning council to study the issues of integrated services, training and mobile services. The main recommendations of the committee are:

i. MPHW for the delivery of health, family planning and nutrition services to the communities.

ii. At least one FHW/ANM to be made available for a population of 10000 to 12000.

iii. Each PHC should ultimately serve a population of 50000 and should have sub-centres spread over its area.

iv. Training for all workers engaged in the fields of health, family planning and nutrition.

7. Shrivatsava Committee

A committee was formed in 1974 to study medical education and manpower under Dr. J B Shrivatsava. The major courses of action recommended by the committee are:

i. Organization of basic health services (family planning, nutrition and health education) within the community itself and training the personnel for this purpose.

ii. Creation of national referral services by developing proper linkages between PHC and higher level referral and service centres.

iii. Creation of administrative and financial machinery to reorganize medical and health education in tune with the objective of national health services.

8. Analysis of Committee Reports

An analysis of recommendations of various expert committees reflects the changes and developments in public health delivery system in India. The basic framework suggested by Bhore committee for primary health care unit, continues till date as the focal point of public health delivery. The programs based approach of Mudaliar committee has been adopted to control major communicable diseases affecting the community.

Family planning is given impetus as a special activity after the recommendation of Mukherjee committee. Creation of multipurpose health workers and female health workers were the hallmark of recommendation of Kartar Singh Committee. Thus, in first few years of independence, development of public health delivery system was the product of recommendations of these committees constituted from time to time.

1.2.2 National and State Health Policies

1. Alma Ata Declaration

The Alma Ata declaration[4] in 1978 led to the launch of "Health for all by 2000" signed by 137 countries including India. The declaration advocated provision of first contact services and basic medical care within the framework of integrated health services. It was declared that PHC is essential for health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families through participation. The responsibility of the state to provide comprehensive primary health care as per this declaration led to the formulation of country's first National Health Policy in 1983.

2. National Health Policy, 1983

The strategy for health care development shifted from committee to policy based approach with the formulation of National Health Policy, 1983. The major goal of policy was to provide universal and comprehensive primary health services. The elements of this policy covered identification of problems requiring urgent attention and recommendations to ameliorate them, population stabilization, provision of primary health care, medical and health education, role of indigenous and other systems of medicine, medical industry, health insurance and legislation and medical Research.

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[4] Primary Health: Indian Scenario: Section 11- Origin and evolution of primary health care in India, WHO India.

An important problem identified was the state of Maternal and Child Health Care (MCH). The NHP accorded highest priority to MCH services to focus on underserved sections of society. In order to achieve its goals, the policy identified key indicators and time bound targets to be achieved in respect of these indicators. Some key indicators identified were infant mortality rate, maternal mortality rate, life expectancy at birth, crude birth and death rate, effective couple protection, net protection rate, family size, pregnant mothers receiving antenatal care, deliveries by trained birth attendants and immunization status. Consequently, Reproductive and Child Health (RCH-phase I) program which incorporated child health, maternal health, family planning, treatment and control of reproductive tract infections and adolescent health was launched in 1997. Subsequently, RCH-phase II which aims at an outcome-oriented program based approach with emphasis on decentralization, monitoring and supervision based approach was launched in 2005.

Table 1.1	Health Outcomes in India		
Indicator	**1951**	**1981**	**2000**
Life Expectancy	36.7	54	64.6[5]
Crude Birth Rate	40.8	33.9	26.2
Crude Death Rate[6]	25	12.5	8.7
IMR	146	110	70

Source: Vital Statistics, Sample Registration System

To achieve these objectives, some noteworthy initiatives were undertaken in the policy:

1. A phased and time bound program for setting up a well dispersed network of comprehensive PHC services;

2. Intermediation through "Health Volunteers" having appropriate knowledge and skills;

3. Establishment of a well-worked out referral system to ensure that the patient load at the higher levels is not burdened by those who can be treated at the decentralized level and

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[5]Birth Rate, Death Rate, IMR and TFR: India & States, National Commission on Population, Government of India.
[6]Sample Registration System Bulletins, Vital Statistics Division, Registrar General, Government of India

4. An integrated network of evenly spread specialty and super specialty services by encouraging private investment for patients who can pay so that Government facilities are limited to those entitled free use.

Graph 1.1: Health Care Outcomes in India

	Crude Birth Rate	Crude Death Rate	IMR
1951	41	25	146
1981	34	13	110
2000	26	9	70
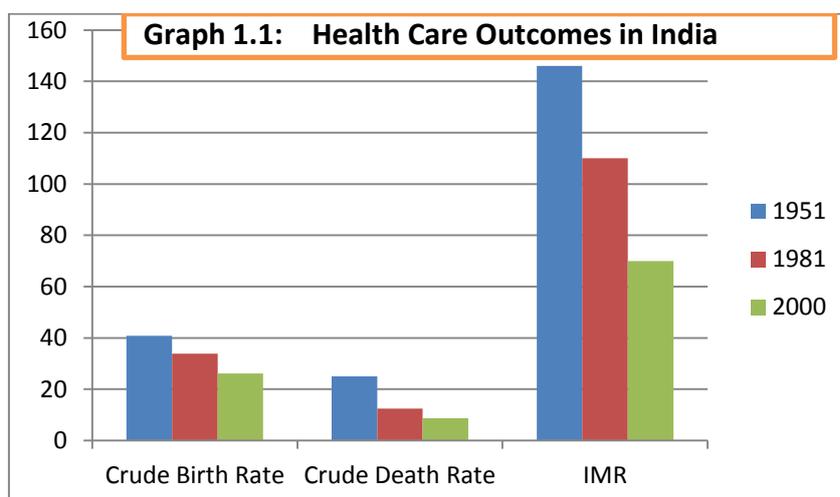
These initiatives in public health were successful in eradicating small pox and guinea worm diseases; vastly improved coverage of polio vaccination; and drastic reduction in Kala Azar, Leprosy and Filariasis. Significant fall was witnessed in total fertility rate and infant mortality rate too. IMR[7] reduced from 146 in 1951 to 110 in 1981 and then further to 70 in 2000 (Table 1.1)

On the other hand, the levels of morbidity and mortality were still high compared to many other developing countries. Incidence in Malaria witnessed resurgence; new communicable diseases like HIV/AIDS emerged as serious threats and there has been rapid increase in life-style diseases like diabetes, cancer and cardiovascular diseases[8].

3. National Population Policy, 2000

NPP, 2000 provided overreaching policy framework for family planning and child health goals. The immediate objective was to address the unmet needs of contraception, health care infrastructure, health personnel and, to provide integrated delivery of reproductive and child care services. It envisaged one-stop integrated and coordinated delivery at village level for basic RCH services through a partnership of Government with voluntary and NGO organizations. The medium-term objective was to bring the TFR to replacement levels by 2010, through vigorous implementation of inter-sectoral operational

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[7] Sample Registration System, Registrar General of India, Government of India.
[8] Health: Morbidity, Healthcare and Condition of the Aged - National Sample Survey 60th Round Report, Ministry of Statistics and Program Implementation.

strategies. The long-term objective was to achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development, and environmental protection.

To pursue these objectives, the following national socio-demographic goals were formulated to be achieved by 2010: Make school education up to age 14 free and compulsory, and reduce drop outs at primary and secondary school levels to below 20% for both boys and girls; Reduce infant mortality rate to below 30 per 1000 live births; Reduce maternal mortality ratio to below 100 per 100,000 live births; Achieve universal immunization of children against all vaccine preventable diseases; Promote delayed marriage for girls, not earlier than age 18 and preferably after 21 years of age; Achieve 80% institutional deliveries and 100% deliveries by trained persons; Achieve universal access to information/counseling, and services for fertility regulation and contraception; Achieve 100 per cent registration of births, deaths, marriage and pregnancy; Contain the spread of AIDS, and promote greater integration between the management of reproductive tract infections (RTI), sexually transmitted infections (STI) and the National AIDS Control Organisation; Prevent and control communicable diseases.; Integrate Indian Systems of Medicine (ISM) in the provision of RCH services, and in reaching out to households; Promote small family norm to achieve replacement levels of TFR; and bring about convergence in implementation of related social sector programs so that family welfare becomes a people centered program.

4. Millennium Development Goals

The Millennium Development Goals is eight international development goals that all 193 members of United Nations and many international organizations have agreed to achieve by the year 2015. They include eradicating extreme poverty, reducing child mortality rates, fighting disease epidemics such as AIDS, and developing a global partnership for development.

The MDG are a synthesis of the most important commitments made at the international conferences and summits in 1990s; to recognize explicitly the interdependence between growth, poverty reduction and sustainable development; to acknowledge that development rests on the foundations of democratic governance, rule of law, respect for human rights and peace and security; are based on time-bound and measurable targets accompanied by indicators for monitoring progress; and bring together the responsibilities of developing countries with those of developed countries.

The MDGs were developed out of the eight chapters of Millennium Declaration, signed in September 2000[9]. There are eight goals with 21 targets[10], and a series of measurable indicators for each target by 2015. Goal 1 is to eradicate extreme poverty and hunger with targets to halve the proportion of people living on less than $1 a day, achieve decent employment for women, men, and young people and halve the proportion of people who suffer from hunger. Goal 2 is to achieve universal primary education and ensure that all girls and boys complete a full course of primary schooling by 2015. Goal 3 is to promote gender equality and empower women with target to eliminate gender disparity in primary and secondary education by 2015.

Goal 4 is to reduce child mortality rates with targets to reduce it by two-third. Goal 5 is to improve maternal health with target to reduce maternal mortality rate by three quarters and achieve universal access to reproductive health by 2015; Goal 6 is to combat HIV/AIDS, malaria, and other diseases with target to halt and begin to reverse the spread of HIV/AIDS, achieve universal access to treatment for HIV/AIDS by 2010, halt and begin to reverse the incidence of malaria and other major diseases by 2015.

Goal 7 is to ensure environmental sustainability with target to integrate the principles of sustainable development into country policies and programs and reverse loss of environmental resources, reduce biodiversity loss by achieving a significant reduction in the rate of loss by 2010, halve the proportion of the population without sustainable access to safe drinking water and basic sanitation by 2015; to achieve a significant improvement in the lives of at least 100 million slum-dwellers by 2020; and Goal 8 is to develop a global partnership for development with target to develop an open, rule-based, predictable, non-discriminatory trading and financial system, provide essential drugs to developing countries in co-operation with the private sector pharmaceutical companies and make available the benefits of new technologies, especially information and communications. As a member of UNDP, India has adopted MDG wherein goals 3, 4 and 5 deals with public health issues of child health, maternal health and diseases in which the country has made huge commitment to achieve the universal targets[11].

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[9] United Nations Millennium Declaration: Resolution 55/2 adopted by the general assembly - 55th session, 18/09/2000.

[10] Haines, Andy and Andrew Cassels. 2004. Can The Millennium Development Goals Be Attained? - BMJ: British Medical Journal, Vol. 329, No. 7462 (Aug. 14, 2004).

[11] Butler, John: Reaching the MDG in India, Oxfam India, Centre for Legislative Research and Advocacy, 2009

5. National Health Policy 2002

Health care scenario was evaluated as a precursor to new health policy. The public health investment which was already low declined from 1.3% to 0.9% between 1990 and 1999. Only 17% of the aggregate expenditure was public health spending and the balance was out-of-pocket expenditure. Hence, the issue of resource availability was a key concern in the formulation of new policy. Attainment of health indices has been very uneven with rural-urban divide, wide difference in attainment of goals between better-performing and low-performing states (Table 1.2) and between better-endowed and vulnerable sections of society (Table 1.3). Hence the new policy aimed to reduce the inequality and provide access to disadvantaged sections of society.

Table 1.2	Health Indicators: Regional Inequity				
Region/ State	BPL Population (%)	IMR Per 1000 (1999 SRS)	< 5 Mortality Per 1000 (NFHS II)	MMR per lakh (Annual Report 2000)	Underweight (% Children under 3 years)
India	26.1	70	94.9	408	47
Rural	27.09	75	103.7		49.6
Urban	23.62	44	63.1		38.4
Kerala	12.72	14	18.8	87	27
Maharashtra	25.02	48	58.1	135	50
Tamil Nadu	21.12	52	63.3	79	37
Orissa	47.15	97	104.4	498	54
Bihar	42.60	63	105.1	707	54
Uttar Pradesh	31.15	84	122.5	707	52
Rajasthan	15.28	81	114.9	607	51
Madhya Pradesh	37.43	90	137.6	498	55

Source: National Health Policy, 2002

A comparison of public health spending in select countries shows that the ratio is less in India compared to developing as well as developed countries[12] (Table 1.4). Vertical implementation structures have been created for major disease control programs which resulted in independent manpower had become expensive and difficult to sustain. For a

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[12] Report of the National Commission on Macroeconomics and Health: National Commission of Macroeconomics and Health, Ministry of Health & Family Welfare, Government of India, New Delhi, September, 2005.

country of vast size and diversity, national health programs must be flexible enough to permit local modifications which must be implemented through State Governments' decentralized public health machinery. Hence there must be incentive to enhance the role of local self governments by devolving programs and funds at different levels of panchayat raj institutions. In addition, there were issues like education of health care personnel, need for specialists in public health, and availability of drugs and vaccines.

Table 1.3	Health Indicators: Social Inequity		
Category	Infant Mortality Per 1000	< 5 Mortality Per 1000	% Children underweight
All 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	41.1

Source: National Health Policy, 2002

The NHP, 2002 was formulated from the recommendations of National Population Policy, 2000 with key objectives to address the problem of declining sex ratio, total fertility rate and speedy implementation of minimum needs program. A key area of recommendation was to focus on MCH, its administration, priorities, approach and goals for 2010. The goals envisaged under the policy are given in Table (1.5).

Table 1.4	Health Indicators: International Comparison		
Country	Population with income of <$1 a day	Infant Mortality rate (per 1000)	Health Exp to GDP (%)	Public Health Exp to Total Health Exp (%)
India	44.2	70	5.2	17.3
China	18.5	31	2.7	24.9
Sri Lanka	6.6	16	3	45.4
UK	-	6	5.8	96.9
USA	-	7	13.7	44.1

Source: Report of National Commission on Macroeconomics and Health

The policy approaches the issues from the perspective of outcomes, outputs and inputs. With an objective[13] to achieve acceptable standard of good health among the population of the country, some major initiatives were envisaged under the policy. The approach was to increase the access to decentralized public health system by involving panchayat raj institutions; Information, Education and Communication activities to disseminate public health related information to people; enhance the role of private sector particularly for the income group which can afford to pay for services; empowerment of women for overall improvement in community health and finally; establish new infrastructure in deficient areas and upgrade infrastructure in existing institutions.

Graph 1.2: Health Indicators: International Comparison
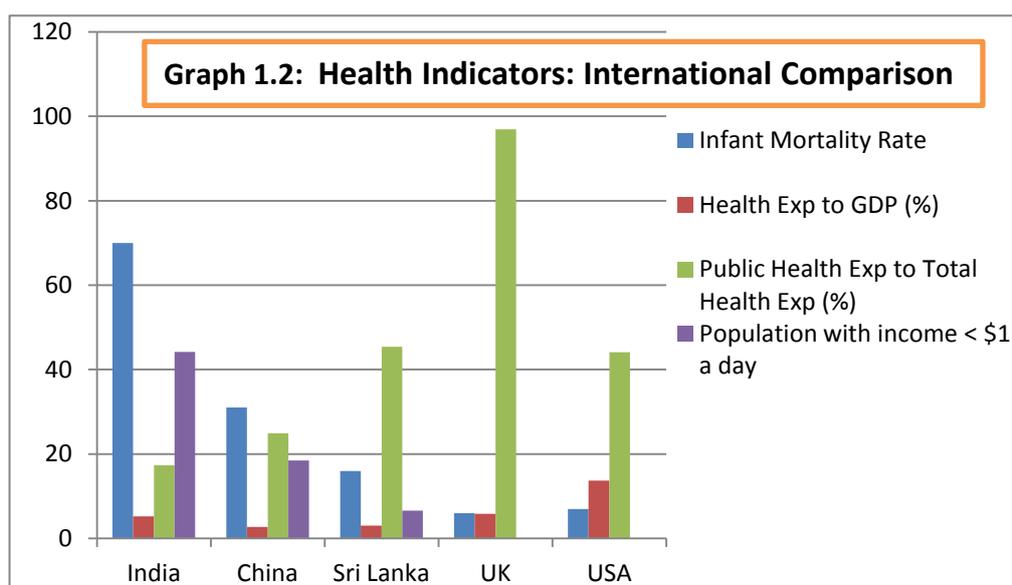
Careful consideration was also given to issues of health care personnel which include improvement in infrastructure in medical and dental colleges, need-based and skill oriented syllabus with sizeable component for practical training, specialized education in public health and family medicine, and improve the availability and skill level of nurses. NHP 2002 envisages setting up of an organized urban primary health care structure with two tiers. Spending on health research was proposed to increase from 1% to 2% of health expenditure by 2010. Thus, the policy envisages providing increase in financial and material resources to achieve the desired outcomes through structural improvement: decentralization, integration and participation of all stakeholders in public health care delivery in the country.

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[13] National Health Policy, 2002: Government of India New Delhi, Ministry of Health and Family Welfare, 2002.

Table 1.5	Goals under National Health Policy	
Goal		**Time Limit**
Eradicate Polio		2005
Eliminate Leprosy		2005
Eliminate Kala Azar		2010
Eliminate Lymphatic Filariasis		2015
Achieve zero level growth in HIV/AIDS		2007
Reduce mortality by 50% on account of TB, Malaria and other Vector and Water borne diseases		2010
Reduce prevalence of blindness to 0.5%		2010
Reduce IMR to 30 per 1000 and MMR to 100 per 100000		2010
Increase utilization of public health facilities from current level of <20 to >75%		2010
Establish integrated system of surveillance, national health accounts and health statistics		2005
Increase health expenditure by Government as a % of GDP from 0.9% to 2%		2010
Increase share of Central grants to constitute at least 25% of total health spending		2010
Increase State health spending from 5.5% to 7% of the budget and; Further increase to 8%		2005 2010

Source: National Health Policy, 2002

Gujarat Population Policy, 2002

Gujarat has achieved huge strides in economic development with state domestic growth rate ranking among the top eight states of the country on a consistent basis. However, the State has recognised the prevalence of marked socio-economic disparities within the State, among districts, and between rural and urban areas. Sustained development of State depends primarily on human development for which conscious efforts have to be for significant improvement. To achieve this, in harmony with National Population Policy, 2000 and Gujarat Vision, 2010, Government of Gujarat released the State Population Policy 2002[14].

The goal of the policy was to improve the quality of life of the people. It aims at reducing gender discrimination, empowering women and ensuring extensive service support to achieve replacement level fertility by 2010. The objective of the policy was to

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[14] Population Policy: Government of Gujarat, Health and Family Welfare Department, March 2002.

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provide integrated reproductive health care services, including addressing the unmet need for contraception. The state aims to strengthen health care infrastructure and support systems to improve access to these services. The objective was to reduce TFR from the 3.0 to 2.1 by 2010; increase the contraceptive prevalence from 54.2% to 70%; reduce IMR from 63 to 16 per 1000 births; and reduce MMR from 389 in 1992-93 to less than 100 by 2010 (Table 1.6).

The key strategies to achieve these goals and objectives were: paradign shift from population control to reproductive and child health approach[15]; improve quality of services and make them client-oriented; promote gender equality, women empowerment and male paritcipation; decentralization, structural changes and financial reforms; promote inter-sectoral coordination and partnership between Government organizations, NGO, corporate sector, co-operatives and private sector; enforce accountability of public, private health and social service sector; resource mobilization, alternative financing and better financial utilization; and social mobilization through information, education and communiction.

Table 1.6	Targets under Gujarat Population Policy	
Health Indicators	Current Status	2010
Total Fertility Rate	3.0 (1998)	2.1
Couple Protection Rate (%)	54.2 (2001)	70
MMR, per lakh	389 (1992-93)	< 100
IMR, per 1000	63 (1999)	16
Under 5 mortality rate, per 1000	20.4 (1996)	< 10
Immunization (%)	48 (1998-99)	100
Delivery by trained attendants (%)	74.2 (1998-99)	100
Institutional Delivery (%)	46 (1998-99)	80

Source: Gujarat Population policy, 2002

. Thus the policy has recognized that infant mortality, maternal mortality and incidence of infectious diseases can be curtalied only by enhancing awareness among women; increased involvement of stakeholders; improved performance of health delivery system and establishing an effective monitoring system. In consonance with the NPP,

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[15] Khanna, Renu: Women's Perspective on Population Policies; Feminist Critique of Population Policies: Population Policy of Gujarat – Medico Friend, July-Oct 2001.

Gujarat Population Policy also focuses on improving quality of life of people and improving women empowerment. The state has constituted Gujarat Population Commission (GPC) to oversee the implementation of the policy, review the progress and act as advisory body to the Government on population and development matters.

Chapter II

2. Rationale for Research; Review of Literature; Purpose of Research and Sources of Data

The National Health Policy proposes to optimize utilization of public health delivery at primary level by gradual convergence of all health programs under a single field administration. Vertical programs like RCH, Universal Immunization Programs,TB, Malaria and HIV/AIDS would be integrated to bring about desirable outcomes through convergence of all public health inputs. The impact of the policy is measured based on outcomes in key health indicators. A comparison of goals set in the policy and achievements made, once in mid-period and finally towards the end of policy period in 2010 (later extended to 2012) is given below. Analysis shows that the country lags behind in achieving the goals set for both mid-period and final targets. Gujarat could achieve mid-period goals but lags behind in final goals (Table 2.1). This phenomenon is required to be understood thoroughly so that the areas of policy which require reform can be identified. Hence, there is reason and merit for detailed study of impact of public health delivery during this period. NRHM is the flagship program for health care delivery and hence needs to be evaluated for this purpose.

Table 2.1	Comparison of Health Care Outcome: Gujarat & India								
Indicator	**Gujarat**					**India**			
	Status in 2002	**Goal**		**Achievement**		**Status in 2002**	**Goal**		**Achievement**
		2006-07	**2009-10**	**2004-06**	**2009-10**		**2006-07**	**2009-10**	**2004-06**	**2009-10**
IMR	60	45	<30	54	44	66	45	<30	58	47
TFR	2.9		2.1	2.8	2.5	3.2		2.1	2.9	2.6
MMR	389	200	<100	160	148	407	200	<100	254	212

Source: National Health Policy and Sample Registration System

Graph 2.1 Comparison of Health Care Outcomes: IMR & MMR

	IMR	MMR
Gujarat		
Status in 2002		
Goal 2006-07		
Goal 2009-10		
Achievement 2004-06		
Achievement 2009-10		
India		
Status in 2002		
Goal 2006-07		
Goal 2009-10		
Achievement 2004-		
Achievement 2009-10		

Graph 2.2   Comparison of Health Care Outcomes: TFR

2.1 Literature Review

There are reasonably good literature in the subject of public health in India. Many books, papers and reports have been publichsed from time to time by national and international organizations like ICMR, WHO, UNICEF, UNDP and World Bank.

2.1.1 Articles and Papers

A paper on Public Management and Essential Public Functions, published by World Bank[16] provides an overview of how different approaches to improve public sector management relate to essential public health functions such as disease surveillance, health education, monitoring and evaluation, work force development and health policy development. Managerial autonomy is important for promoting adaption and innovation. Strengthening hierarchial accountability within public health system is essential and requires not only changes in the capacity, autonomy and behaviour of service managers, but also requires change in monitoring systems.

Social Science and Medicine Journal[17] examines the patterns and determinants of maternal health care utilization across different social settings in south India: in the States of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. Results show that utilization of maternal health care services is not only associated with a range of reproductive, socio-economic, cultural and program factors but also with the State and type of health service. The interstate differences in utilization could be partly due to variations in implementation of maternal health care program as well as differences in availability and accessibility of services between States. In case of antenatal care, there was no significant rural–urban gap, thanks to the role played by the health workers working in rural areas to provide these services. The findings of this study provide insights for planning and implementing appropriate maternal health programs in order to improve the health and well-being of both mother and child.

Another paper published by Public Health Foundation of India,[18] deals with the quality in health care in terms of safety, efficiency, timelines, responsiveness, equity, and human and physical resources. The study is based on outcomes assessed over time in safe delivery and maternal and neonatal mortality. The study was carried out for Malaysia, India and Ethiopia. In case of India, the study identifies the persistence of high proportion of maternal and neonatal deaths and low institutional delivery. Further, it is observed that

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[16]Khaleghian and Monica Das Gupta - Public Management and Essential Public Health Functions, World Bank, 2005.

[17]Navaneetham K and A Dharmalinga: Utilization of Maternal Health Care Services in Southern India – Asia Metacentre of Population and Sustainable Development Analysis, Institute of Asian Research, Singapore.

18 Dr. Clar, Chrisitine, Dr. Bilal Iqbal Avan: Evolution of the concept of quality of care with respect to clean delivery in health system in high, middle and low income countries.- Public Health Foundation of India, 2010.

issues such as poor access, poor infrastructure and facilities, ineffective treatment due to poor skills, corruption and lack of responsiveness as major problems.

A working paper by Planning Commission of India[19] aims to evaluate quantity and quality of service delivery in rural public health facilities under NRHM. The former is assessed on the static and dynamic condition of physical infrastructure; by number of paramedical, technician and medical staff employed; by the supply, quality and range of drugs; by availability and usage of maintenance funding of centres; and by actual availability of laboratory, diagnostics and service facilities. Quality is defined in relation to the condition of the above tangibles, and also supplemented by subjective data on intangibles, such as patient satisfaction, gathered from exit interviews. The findings across four States of Uttar Pradesh, Bihar, Rajasthan and Andhra Pradesh, resulted in reflecting context-specific driving factors and identifying problems where implementation is less than desirable. Thus, while the study attempts to identify factors which affect implementation of NRHM, it falls short of assessing the underlying   management practices and the mechanism for delivery of health care services.

2.1.2 Books

There are many challenges and opportunities for health care managers which are discussed in the book, "Strategic Issues and Challenges in Health Management"[20] which should be used to stimulate action, thought, reflective practice and service provision. Health system has to respond to issues relating to management. This includes potentially new health systems structures with greater emphasis on quality and performance of management. Information management is becoming more important with the explosion of information. The lowest income groups in India receive the smallest share of subsidies for curative health care[21]. To reduce inequity and make services pro-poor, programs and facilities must be targeted better and made more accessible to poor. A judicious combination of supply and demand side strategies will be required for this. Supply-centric strategy practiced for a long time without any parallel demand from the community has failed to reach the poor. This is because of lack of awareness about availability of services

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[19] Gill, Kaveri: A Primary Evaluation of Service Delivery under the National Rural Health Mission: Findings from study in Andhra Pradesh, Uttar Pradesh, Bihar and Rajasthan – Planning Commission of India, Working Paper 1/2009 – PEO, May 2009.

[20] Ramani, K.V, Mavalankar, Dileep and Govil, Dipti; Strategic Issues and Challenges in Health Management, SAGE Publications India Private Ltd, New Delhi, 2008.

[21] Mahal, Ajay, J.Singh, F. Afridi, V. Lamba, A.Lumber and V. Selvaraju: Who Benefits from Public Sector Spending in India? National Council of Applied Economic Research, New Delhi, 2002.

or lack of access due to social barriers. A demand-driven approach requires improvement in availability of essential services, accountability mechanisms and empowerment of clients.

Leadership in health care management has to adapt to changes in terms of style, process and structure. With transition from feudalistic and paternalistic society towards knowledge society, the leader is expected not necessarily to have all right answers but all right questions. People and technology management will be important issues. Leaders of future should think of integrating internal processes and systems to external needs. Organizational structures will move from pyramidal to spherical structures within which the locus of control will continually shift. With rapid changes in information technology, leaders of future should perceive change; conceive change and; deliver change, thus leading change with change.

A recent edition of book on public health, "Essentials of Public Health Management",[22] discusses the theoretical models, day to day activities and realities in public health management. Management is the art of using all available resources to accomplish a given set of tasks in a timely and economical manner. Its success depends on ability to understand local organizational milieu as well as larger environment in which it exists. Governance is a critical component of all aspects of public endeavour and is oriented to both process and outcome. An important aspect of public health leadership is monitoring activities of practitioners. Governance is the oversight in the public health system, whereas the management implements the activities to make the system effective. The organization of public health varies from state to state in United Sates of America. The most common structure is a local public health department with six basic service areas: collecting and analysing vital statistics, sanitation, communicable disease control, maternal and child health, health education and laboratory services. The leadership for the majority of health departments is provided by board of health. The most familiar form of organizational structure is the classic bureaucracy which is widely used in Government, militaries and churches. This was first systematically described by Max Weber[23] in bureaucratic theory in which bureaucracy follows a rational code of conduct.

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[22] Fleming Fallon, L Jr., and Eric J Zgodzinski: Essentials of Public Health Management – Jones and Bartlett Learning, - ISBN-13: 978 1-4496-1896-4.
[23] Gerth H.H, and C.W. Mills- Max Weber: Essays in Sociology. Fair Lawn, New Oxford University Press, 1958.

Three major theories describe the attitude and behaviour of individuals towards subordinates in the organization. In his book, "The professional Manager", by Douglas McGregor[24] discusses Theory X which gives a traditional view of direction and control. A more humanistic Theory Y integrates individual and organizational goals. Theory Z[25] is a recent theory of management, based on management practices in Japan. In this, management makes long term commitments to the employees

Organizations are affected by interpersonal and intergroup factors where positional authority has to be accompanied by the need to understand political factors. From the perspective of public health professional, organizational behaviour can be defined as the study of how groups function and the psychological underpinnings contributing to that behaviour. Some key tenets concerning individual behaviour are significant components of organizational behaviour. Causality is forces acting on people are responsible for human behaviour. These forces can be internal or external to an individual and include influence of genetics, experience and environment. Directedness means human behaviour is not only caused, it is also pointed towards something. This is referred to as goal directed. Motivation: As a result of underlying behaviour, a push, need, drive or motive can be found to explain most rational actions taken by individuals.

Abraham Maslow made major contribution to the understanding of individual behaviour with five level of hierarchy of needs: physiological; safety; love and belonging; esteem and self-actualization. Sociologist Homans characterized social behaviour as being an exchange. When in groups, people interact to receive a reward. Each person communicates with others in the group, and each tries to make contribution to the group. Groups usually refer to small number of individuals in which membership is related to both technology and pace of work. The status within the group is an outcome of internal and external factors. Internal factors refer to titles, job, perquisites, offices, work schedules, mobility and methods of evaluation. External factors refer to influences that are brought to work place like age, gender, race, education and seniority.

In the increasingly complex nature of modern public health organizations, the use of complex technological tools and concepts, and the need to increase productivity have contributed to the growth and importance of profession.

The district health administration is considered the bridging administrative unit between National and State Government and the community at village level. Given the

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[24] McGregor D- The Professional Manager, New York: Mc Graw Hills, 1967.
[25] Ouchi, W.G- Theory Z: How American Business can meet Japanese challenge, 1981.

poor health indicators in the country, the book "Primary/Rural health Care System and Hospital Administration" suggests three urgent reforms[26]. First, it is time to accept that the Government has at best limited capacity to deliver health services and hence a radical shift in strategy that gives the poor greater opportunity to choose between private and public providers is needed. Second, the Government must introduce one year long term training courses for practitioners engaged in treating routine illness. Finally, there is urgent need to accelerate availability of qualified doctors to displace the unqualified doctors who operate in both rural and urban areas.

As primary health care approach is people-oriented, the organization of health care starts with the people, individuals and families and communities. The book compares the national rural health mission initiative with health initiatives in countries like Democratic Republic of Korea, Singapore and Sweden. According to Jeffrey D Sachs[27], NRHM is the single largest mobilization of public health measures in the world. Half-million young women have been hired as health workers to link impoverished households and public hospitals. This has broken three common myths: First, the burden of disease among the poor is somehow inevitable and unavoidable. Second, it breaks the myth that the aid from rich countries is wasted. Poor countries are capable of establishing effective health care programs rapidly when they are helped. Thirdly, there is myth that saving poor people will worsen the population explosion. But in reality households have many children because of fear of high childhood death rates. This declines since families feel confident that their children will survive.

2.1.3 Reports on Public Health

The report by the World Bank[28] defines six core performance domains: quality, efficiency, utilization, access, learning, and sustainability and provide a compendium of metrics that have been used to measure organizational performance in each of these six domains. Based on this, the report identifies seven major strategy areas potentially useful for improving performance among health care organizations: 1) standards and guidelines 2) organizational design 3) education and training 4) process improvement and technology and tool development 5) incentives 6) organizational culture and 7) leadership and

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[26] Goel, S.L: Primary/Rural Health Care System and Hospital Administration, Deep & Deep Publications Private Ltd, New Delhi, 2010.
[27] Sachs, D Jeffrey: The Healthier Poor – Economic Times, 3rd September, 2007.
28 Bradley H Elizabeth, Sarah Pallas, Chhitj Bashyal, Leslie Curry and Peter Berman: Developing Strategies for Improving Health Care Delivery: A User's Guide to Concepts, Determinants, Measurement, and Intervention Design by World Bank, June 2010.

management. It also provides illustrations of facility-level interventions within each of the strategy areas and highlight the conditions under which certain strategies may be more effective than others and proposes that the choice of strategy targeted at organizational level to improve performance should be informed by the identified root causes of the problem, the implementation capabilities of the organization, and the environmental conditions faced by the organization.

Human Development Report for Gujarat[29] published in 2004 focuses on the link between economic growth and human development and suggests modifications to achieve higher levels of human development. The report studies the growth in agriculture, industry, labour and expenditure on social sectors and links it with development in education, health, poverty, gender and weaker sections like tribal people.

2.2 Rationale for Research

A detailed analysis of books, papers and reports shows that there have are both macro and micro level studies and scholarly works on health sector. These works cover theory and practice of public health delivery system, national health policy, health functions, inter-state comparison, human development at state and country level, improving accountability of public health managers and performance evaluation. However, it is observed that no significant research has been undertaken to study and assess management of public health delivery. Huge financial and other resources are committed for RCH program under NRHM to bring time-bound health care outcomes. Already under implementation for 5 years, the mission needs to be rigorously evaluated to make meaningful policy interventions.

From the recent report of UNDP in 2011[30], the achievement in comparison to MDG in the area of child and maternal health can be ascertained. Though IMR for the country as a whole declined by 30 points (rural IMR by 31 points vis-à-vis urban IMR by 16 points) in the last 20 years at an annual average decline of 1.5 points, it declined by three points between 2008 and 2009. With the present improved trend due to sharp fall during 2008-09, the national level estimate of IMR is likely to be 45.04 against the MDG target of 26.67 in 2015.

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[29] Hirway, Indira and Darshini Mahadevia: Gujarat Human Development Report, 2004 – Mahatma Gandhi Labour Institute, Ahmedabad.

[30] Millennium Development Goals in India: Country Report 2011- Central Statistical Organization, Ministry of Statistics and Programme Implementation, Government of India.

Similarly, in case of maternal mortality ratio, SRS data indicates India has recorded a decline in MMR of 35% from 327 in 1999-2001 to 212 in 2007-09 with a fall of about 17% during 2006-09. The decline in MMR from 1990 to 2009 is 51%. From an estimated MMR level of 437 in 1990-91, India is required to reduce MMR to 109 by 2015. At the historical pace of decrease, the country is expected to reach MMR of 139 per 100,000 live births by 2015, falling short of target by 29 points.

2.3 Purpose of Research

Thus the analysis of outcome reveals the gap between goals and achievement of key RCH indicators: IMR, TFR and MMR. This issue needs detailed study and research to ascertain various reasons as no major studies have been undertaken in the country in this regard. The research study, while analyzing the gaps in achievement must go in to details regarding the management of public health delivery to make any meaningful contribution to the subject and issue.

RCH program aims to bring about significant improvement in maternal and child health indicators in the country. NRHM is a major initiative to improve health care in the country which provides flexible financing, convergence of services, decentralization and a strong monitoring system in major departure from existing approach and is implemented from 2005-12. The experience of implementing RCH under NRHM has to be evaluated in a scientific manner to assess gaps in inputs and outputs leading to low outcome. Gaps in demand and supply of services need to be ascertained to find weak as well as strong elements of management. While the entire link of service delivery from policy to outcome is important, field study at cutting edge level, where ideas translate into action requires more focus to understand the dynamics of public health management.

Thus, the purpose of research is to study the management of public health delivery system in Gujarat, and propose suggestions for improvement in delivery of public health services. The detailed purposes of research are

1. To study and examine the changes in key health care outcomes in primary health with particular focus on maternal and child health indicators during RCH Phase II under NRHM in the country and Gujarat.

2. To assess the demographic trends of population, socio-economic changes like structure of economy, income, education, poverty and unemployment, and infrastructure in the country and Gujarat during this period.

3. To study the status of health sector in the country and state: structure and functioning of health sector; health care organizations and stakeholders; health legislation; health programs; health infrastructure and health status of the population.

4. To study the Reproductive and Child Health Program: objective, evolution, approach and management strategy before and after introduction of NRHM. Describe the vision, strategy, goals and objectives under NRHM.

5. To assess the performance of the RCH indicators in all districts of Gujarat before and after introduction of NRHM and ascertain relative improvement in districts. And, based on comparative performance, select districts for field survey.

6. To study the supply and demand side of health delivery by undertaking survey of health workers and beneficiaries at field level in districts selected for field study. The purpose is to assess the planning, organization, infrastructure, human resources, monitoring and finance at health centres by administering questionnaires to health workers in field survey. In case of beneficiaries, the survey is to assess the awareness, availability, access and affordability of health services by administering questionnaire during field survey.

7. To undertake statistical analysis of data collected from the field survey, evaluate the linkages between various factors and identify factors which are responsible for improvement or otherwise of various parameters in these districts.

8. Based on above, to propose appropriate suggestions to policy makers to improve public health delivery in Gujarat.

2.4 Sources of Data

Given the fact that health care is of immense importance to improve human development in the country, many studies and research works have been undertaken to ascertain the impact of health policies and programs. Many governmental and non-governmental organizations collect and collate data on health care indicators through population and sample surveys. These data provide valuable insight into the changes in health care outcomes in the country.

1. Census

The Census Act enacted in 1948[31] provides scheme for conducting population census based on which steps were initiated for systematic collection of statistics on the

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[31] The Census Act, 1948, as amended in 1994- Ministry of Home Affairs, Government of India.

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size of population, its growth, etc., and for this purpose Registrar General and ex-Officio Census Commissioner was established under the Ministry of Home Affairs. This organisation was made responsible for generating data on population statistics including Vital Statistics and Census. Later, this office was also entrusted with the responsibility of implementation of Registration of Births and Deaths Act, 1969. The Indian census is a valuable source of information on demography, economic activity, literacy, housing, urbanisation, fertility, mortality, language, religion, migration, disability and many other socio-cultural and demographic data since 1872. Decadal population census is conducted to obtain this data. This information is useful in analyzing the demographic trends in the country and relates them to health care indicators to ascertain the underlying reasons causing these changes through further studies and research.

2. District Level Health Survey

In order to meet the need to monitor the health and family welfare programs at the district level, household and facilities survey was undertaken for the first time in 1998-99 which is referred to as DLHS-1. Subsequently DLHS-2 was undertaken in 2002-04 and DLHS-3 in 2007-08. The survey provides estimates of maternal and child health, family planning and other reproductive health indicators. Survey is carried out throughout the country to assess facilities at the village level and socio-economic and health characteristics at household level.

The main focus and objectives of DLHS-3 was to estimate the coverage of antenatal and immunization services; proportion of institutional/safe deliveries; Janani Suraksha Yojna beneficiaries; contraceptive prevalence rates; unmet need for family planning; awareness about RTI/STI and HIV/AIDS and; family life education among unmarried adolescent girls. In addition, in DLHS-3 information related to programs under NRHM especially performance under RCH such as health care utilization, accessibility to health facilities, effectiveness of ASHA in promoting RCH care, health facility capacity and preparedness in terms of infrastructure were surveyed. The survey was carried out by International Institute of Population Studies (IIPS), Mumbai under Ministry of Health and Family Welfare.

3. National Family Health Survey

The National Family Health Survey (NFHS) is a large-scale, multi-round survey conducted in a representative sample of households throughout India to provide trend data on key indicators of health. The survey provides state and national information on fertility, infant and child mortality, the practice of family planning, maternal and child health,

reproductive health, nutrition, anaemia, utilization and quality of health and family planning services. NFHS has had two specific goals: a) to provide essential data on health and family welfare needed by the Government and other agencies for policy and program purposes, and b) to provide information on important emerging health and family welfare issues like information on topics like attitude towards education for girls, Integrated Child Development Services Program, men's involvement in maternal care and health insurance.

NFHS -3 conducted in 2005-06 is the third in the series of NFHS surveys[32]. The first and second surveys were conducted in 1992-93 and 1998-99. The surveys are carried out under Ministry of Health and Family Welfare which has designated the International Institute of Population Studies, Mumbai as the nodal agency.

4. Sample Registration System

Registration of births and deaths is an important source for demographic data for socio-economic development and population control in developing countries. The data on vital indicators like population growth, fertility and mortality serves in evaluation of a number of programs in the health sector including family planning, maternal and reproductive health, immunization programs which is dependent on the availability of accurate and up-to-date data on fertility and mortality. For this purpose, SRS[33] which is based on a dual record system is followed in India. The field investigation under the system consists of continuous enumeration of births and deaths in a sample of villages/urban blocks, first by an enumerator, and then an independent six monthly retrospective survey by a supervisor.

Based on the survey data, SRS bulletins are released every year since 1970[34] by the SRS Division in the Office of the Registrar General and Census Commissioner of India. These bulletins provide estimates of birth rate, death rate and infant mortality rate at the natural division level for the rural areas and at the state level for the urban areas. Natural divisions are National Sample Survey (NSS) classified group of contiguous administrative districts with distinct geographical and other natural characteristics. It also

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[32] National Family Health Survey – 2005-06, India – Gujarat – International Institute of Population Sciences and Macro International, Mumbai, 2008

[33] Sethi, R C – Sample Registration System in India, Additional Registrar General, Office of the Registrar General of India, Ministry of Home Affairs, New Delhi, 2007.

[34] Mahapatra, Prasanta - An Overview of the Sample Registration System in India: Institute of Health Systems, Hyderabad, India- Prince Mahidol Award Conference & Global Health Information Forum, 2010.

provides data for other measures of fertility and mortality including total fertility, infant and child mortality rate at higher geographical levels.

5. National Sample Survey Organization (NSSO)

NSSO is an organization in the Ministry of Statistics and Programme Implementation of the Government of India. It is the largest organisation conducting regular socio-economic surveys in India. NSSO conducts nationwide sample surveys on various socio-economic issues in successive rounds, each round covering subjects of current interest in a specific survey period[35]. Some important topics of survey which have direct and indirect impact on health status in the country are maternity, childcare, family planning: distribution and utilisation of medical services, participation in education, utilization of survey on persons age 60 and above, disabled persons, developmental milestone of children, village facilities, particulars of slums, housing condition and morbidity and health care.

Information on morbidity was collected in the seventh round (1953-54) and twenty-eighth round (1973-74). Since then, data on morbidity became a part of the decennial surveys on social consumption. The second survey on Social Consumption was carried out in the 42nd round (1986-87) and the third in the 52nd round (1995-96). A survey on 'Morbidity and Health care' was taken up during the period of January to June, 2004[36]. These surveys covered the curative aspects of the general health care system in India and also the utilization of health care services provided by the public and private sector, together with the expenditure incurred by the households for availing these services. Morbidity and utilisation of health care services including immunisation and maternity care, problems of aged persons, and expenditure of the households for availing the health care services were also covered.

6. Rural Health Statistics

The Ministry of Health and Family Welfare brings out regular publication of rural health statistics of India[37] to provide detailed statistics on rural health infrastructure to cater to the needs of health planners and policy makers both in government and non-

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[35] Concepts and Definitions used in National Sample Survey: Golden Jubilee Publication-National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India, May 2001.

[36] Select Health Indicators: A comparative analysis across the National Sample Survey Organization, Ministry of Health and Family Welfare, Government of India in collaboration with WHO country office of India, 2007.

[37] Rural Health Statistics in India: Ministry of Health and Family Welfare, Government of India 2006 to 2011.

government organizations as well as research organizations in the sector. The publication covers information on sub centres, PHC, CHC and district hospitals, availability of health manpower, training of medical and paramedical personnel and achievement in parameters like average population covered and average villages covered by PHC, CHC and sub centres and health workers.

7. Socio-Economic Survey of Gujarat

Socio-Economic review of Gujarat State is prepared and published by the Directorate of Economics and Statistics[38] for the presentation of budget session of the assembly. The publication presents a profile of key socio-economic activities and achievements in different sectors of the state economy based on the responses from various departments and official publications. Part-I gives an overview of Indian Economy followed by sector wise write up in Part-II. Part-III compares key economic indicators for the state and country, whereas Part-IV provides detailed statistical information.

8. Gujarat Health Statistics

This statistics presents the recent health statistics of State and National programs for the State as a whole and all the 26 districts[39]. Statistics on achievement in various programs, performance of hospitals, human resources in health, health finance, health infrastructure and medical and paramedical education are made available. Districtwise statistics of health centres, registration of indoor and outdoor patients, and performance under various programs are also provided in this publication of Commissioner of Health.

2.5 Health Indicators

2.5.1 Maternal Health Indicators

1. Maternal Mortality rate (MMR)

Complications during pregnancy and child birth are leading causes of death and disability among women in reproductive age. MMR represents the risk associated with pregnancy and measure the number of maternal death per 10000 live births during one year period.

2. Ante Natal Care

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[38] Socio-Economic Review, Gujarat State – 2010-2011: Directorate of Economics and Statistics, Government of Gujarat, February, 2011.
[39] Health Statistics, Gujarat, 2009-10: Vital Statistics Division, Commissionerate of Health, Medical Services, Medical Education and Research, Gujarat State, January, 2011.

Ante Natal Care (ANC) is an important component of RCH under NRHM. ANC is provided by a doctor, health workers, ANM or other health professionals and comprises of physical checkups, checking the position and growth of foetus and giving TT injection at periodic intervals during the time of pregnancy. At least 3 check-ups (one in each trimester), TT injection, regular intake of 100 iron folic acid tablets, periodic measurement of height, weight and blood pressure and basic laboratory test in every trimester.

3. Institutional Delivery

The place and conduct of delivery is a key factor in the safe delivery. The aim is to promote institutional delivery conducted by skilled persons. Under Chiranjeevi scheme, the State Government expects to improve instituional delivery by availaing services of private obstetric and gynaecology practitioners in remote areas.

2.5.2 Child Health Indicators

In order to promote child survival and reduce infant mortality rate, NRHM includes new born care, breast feeding and complete package of immunization for children.

1. Infant Mortality Rate (IMR)

Infant mortality is a leading indicator of the level of child health in a country. IMR is the probability of a child born in a specific year, dying before reaching the age of one. The rate in a given region is the total number of newborns dying under one year of age divided by the total number of live births during the year, then all multiplied by 1,000.

2. Immunization

An important aim of the program is to increase the percentage of full immunization in the State which include BCG, 3 doses of DPT and Polio and vaccine for Measles before thae age of 1. Along side these efforts, the State Government runs Mamta Abhiyan for improving immunization in the State.

2.5.3 Family Planning:

With the objective to achieve population stabilization and promote healthy married life, NRHM is designed to promote contraceptive use among the men and especially women.

1. **Total Fertility Rate**

    Fertility is measured in terms of Mean Children Ever Born to married women in the age group of 15-49 years. The objective is to reduce the rate by improving maternal and child health care and contraceptive use.

2. **Contraceptive Prevalence:**

    The prevalence of contraceptive use among the women and men using temporary methods like oral pills, IUDs, and condoms and permanent methods like female and male sterilization is measured as percentage of currently married men or women using these methods of contraception.

3. Health Care System in India

3.1   Demographic and Socio-Economic Profile

3.1.1. Demographic Profile

As second most populous country in the world, with over 1.21 billion people (2011 census), India houses more than a sixth of world's population. Already containing 17.5% of the world's population, India is projected to be the world's most populous country by 2025, surpassing China, with its population reaching 1.6 billion by 2050[40]. India has more than 50% of its population below the age of 25 and more than 65% below age of 35. It is expected that in 2020, the average age of an Indian will be 29 years, compared to 37 for China and 48 for Japan; and, by 2030, India's dependency ratio should be just over 0.4.

Table 3.1	Demographic changes in India[41]							
Period	Live Births	Deaths	Natural Change	CBR	CDR	Natural Change	TFR	IMR
	figures in '000 per year							
1950-55	16832	9928	6904	43.3	25.5	17.8	5.9	165
1955-60	17891	9686	8205	42.1	22.7	19.4	5.9	153
1960-65	19086	9358	9728	40.4	19.8	20.6	5.82	140
1965-70	20611	9057	11554	39.2	17.2	22	5.69	129
1970-75	22022	8821	13201	37.5	15	22.5	5.26	118
1975-80	24003	8584	15419	36.3	13	23.3	4.89	106
1980-85	25577	8763	16814	34.5	11.8	22.7	4.47	95
1985-90	26935	9073	17862	32.5	10.9	21.6	4.11	85
1990-95	27566	9400	18166	30	10.2	19.8	3.72	76
1995-2000	27443	9458	17985	27.2	9.4	17.8	3.31	69
2000-05	27158	9545	17613	24.8	8.7	16.1	2.96	61
2005-10	27271	9757	17514	23.1	8.3	14.8	2.73	53

Source: World Population Prospects

The demographic pattern of India over last few decades has witnessed steady fall in crude birth rate and crude death rate from 39.3% and 18.9% in 1961 to 22.5% and 7.3% in 2009 (Table 3.1 & 3.2). IMR, TFR, CPR and MMR have consistently decreased during this period as can be observed from Table 3.2. The annual exponential population

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[40]Birth Rate, Death Rate, Infant Mortality Rate & Total Fertility Rate: India & States-National Commission on Population, Govt of India. 2010.
[41]World Population Prospect: United Nations, Department of Socio-Economic Affairs, Population Division, Population Estimates and Projections Section, 2010.

growth rate which reached a peak of 2.22% in 1981 has begun declining since then and has reached 1.64% as per 2011 census. Rate of decline in birth rate and population growth is likely to further accelerate in the next decade.

Graph 3.1 Demographic Changes in India
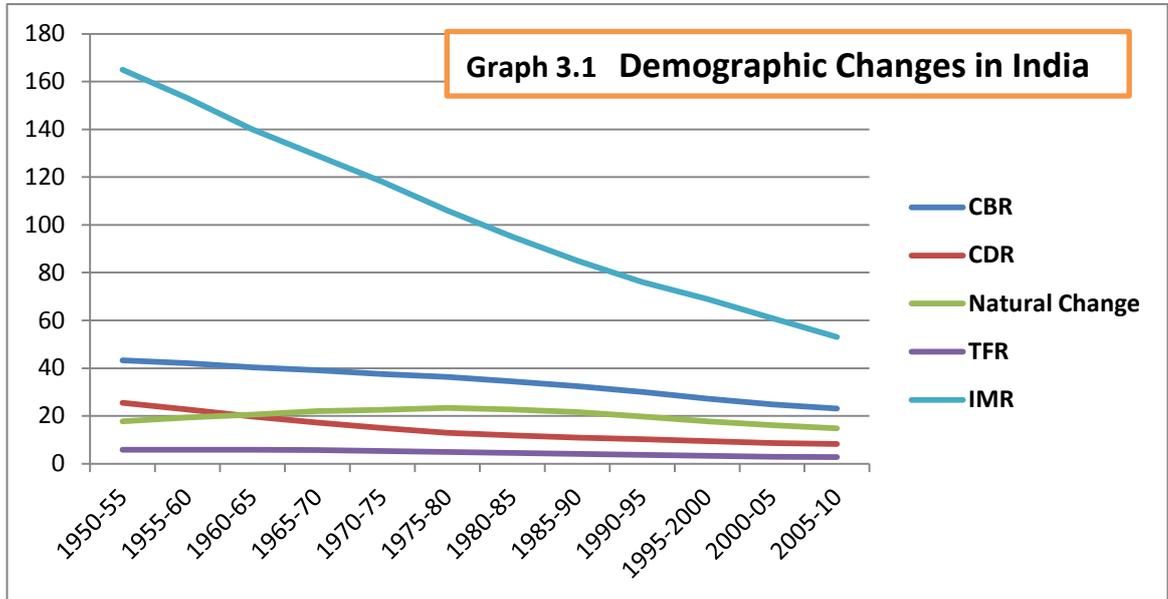
The life expectancy level has been improving over these decades for both male and female population. The improvement among female is better than male population. Sex ratio has improved from 930 in 1961 to 940 in 2011 which is an appreciable improvement but still below the international levels. The country has a long way to go before attaining the levels achieved by developed countries and many developing countries. There are also indicators which show deterioration during the last decade. CPR has declined from 45.6% in 2001 to 41.1% in 2011. Hence, while ensuring that the health indicators continue to improve, the health care system should also consolidate the improvements already made through these decades.

Table 3.2	Demographic Transition of India			
Parameter	**1961**	**1991**	**2001**	**2011**
Crude Birth Rate	39.3	29.5	25.4	22.5 (SRS 2009)
Crude Death Date	18.9	9.5	8.4	7.3 (SRS 2009)
Total Fertility rate	6 (1969)	4.1 (SRS 1990)	3.5 (SRS 2000)	2.6 (SRS 2008)
Couple Protection Rate	10.1 (1970-71)	43	45.6	41.1
Infant Mortality Rate	138	80	66	50 (SRS 2009)
Maternal Mortality Rate	-	327 (SRS 1999-01)	301 (SRS 2001-03)	212 (SRS 2007-09)
Sex Ratio	930	927	933	940
Urbanization	17.97	25.71	27.8	31.15
Life Expectancy at Birth, Male	41.89	59.4	61.6 (SRS 2002)	65.8 (SRS 2008)
Life Expectancy at Birth, Female	40.55	60.4	60.3 (SRS 2002)	68.1 (SRS 2008)

Source: Sample Registration System and Census of India

Referred to as demographic transition by demographers, this phenomenon is witnessed by change from population with high fertility and mortality to a new stability in population due to low fertility and mortality. Demographic transition occurs in four phases in which the first three phases are characterized by population growth. In the first phase there is fall in death rate and improvement in longevity; this leads to population growth. In the second phase there is a fall in birth rate but fall is less steep than fall in death rates and consequently there is population growth. In the third phase death rates plateau and replacement level of fertility is attained but the population growth continues because of the large size of population in reproductive age group. The fourth phase is characterized by fall in birth rate to below replacement level and reduction in proportion of population in reproductive age group; as a result of these changes, population growth ceases and population stabilizes. India is currently moving towards the third phase of demographic transition[42]. Though the changes in the population growth rates in India have been relatively slow, but the change has been steady and sustained.

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[42] Strategies to meet the unmet needs for maternal and child health, Report of the working groups, National Commission of Population, March, 2001.

Table 3.3	Demographic Profile of India			
Area	sq.km	3287263		
Demography			**2001**	**2011**
Population, 2001	crores		102.86	121.01
Sex Ratio, All			933	940
Sex Ratio, children < 7 yrs			934	944
Decadal Growth	%		21.53	17.64
Literacy, 2001				
All	%		64.84	74.04
Male	%		75.26	82.14
Female	%		53.67	65.26

Source: Census of India

During the last decade, the rate of growth in population has declined following the similar trend as in previous decades. Alongwith this, it can be seen that the literacy rate has jumped up by nearly 10% in this decade alone. The female literacy rate has shown tremendous rise of 12% which can be a key catalyst to bring about significant socio-economic changes in the country. The urbanization in the country is increasing in a steady manner but likely to accelerate in coming decades. Sex ratio has improved marginally for the whole population and considerably for population below 7 years of age (Table 3.3).

3.1.2 Socio-Economic Profile

During 2005 to 2010, the GDP and per capita income increased by 49% and 40% respectively. Human development index, which is a global index of relative level of human development across countries, has increased from 0.482 to 0.547. The multi-dimensional poverty index estimated on the basis of income, consumption, access to resources etc has improved from 0.313 to 0.283. These indexes are estimated periodically by United Nations Development Programme[43]. However, the level of poverty in the country has declined only marginally from 28.6% in 2004-05 to 27.5% in 2010. The period has also witnessed a modest increase in public expenditure in health and education from 3.8% to 4.2% and 4.1% to 4.2% (Table 3.4).

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[43] Human Development Reports: 2005, 2006, 2007-08, 2010 & 2011, United Nations Development Program.

Table 3.4	Socio-Economic Profile of India			
Indicator		2004-05	2009-10	Change (%)
GDP	'000 crore	2922	4351	49%
Per capita income	Rs	24143	33731	40%
GDP, PPP	$ Billion	3078	3356	9%
Per capita income, PPP	$	3159	3296	4%
Human Development				
Human Development Index		0.482	0.547 (2011)	
Gender Inequality Index			0.617 (2011)	
Multi-Dimensional Poverty Index		0.313	0.283 (2011)	
National Poverty Line	%	28.6	27.50	
Public Exp. on Education	% of GDP	3.80	4.2(2009)	
Public Exp. on Health	% of GDP	4.10	4.2(2009)	

Source: Socio-Economic Survey of Gujarat

Study of different sectors of Indian economy shows a clear shift in the composition of the economy from agrarian to industrial and service economy. The average holding of agricultural land has continued to decrease from 2001-02 to 2008-09[44], from 1.41 ha to 1.32 ha. Within primary sector also, growth is witnessed in livestock and milk production which indicates the changing pattern of food products in the economy.

Table 3.5	Indian Economy: A Profile			
Agriculture		2000-01	2008-09	Change (%)
Average Landholding	Ha	1.41	1.32	-6%
		2003	2007	
Livestock population	000	485002	529698	9%
		2004-05	2007-08	
Milk Production	Million Tonnes	91	104.8	15%
Industries		2001-02	2006-07	
Employment	000	7750	10328	33%
Value of Output	Rs. Cr	962457	2407658	150%
Unemployment, %	Rural	2.00	10.1	
	Urban	4.50	7.3	
Commerce		2005	2009	
Banks		68116	79933	17%
Credit-Deposit ratio		66.04%	70.30%	6%

Source: Socio-Economic Review of Gujarat

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[44] Socio-Economic Review, Gujarat State: 2005-06 & 2010-11- Directorate of Economic and Statistics, Government of Gujarat, February, 2006

In the industrial sector remarkable growth has been achieved in terms of increase in value of industrial output and employment generation from industries. At the same time unemployment in the country has been rising fast both in urban and rural areas, especially in rural areas. Stagnancy in agriculture and lack of alternate employment opportunities in rural areas is a major challenge before the country. Banking sector, which is key part of services sector has grown in terms of network and healthy improvement in credit-deposit ratio during the period (Table 3.5).

Table 3.6	Infrastructure in India			
Indicator		**2004**	**2008**	**Change (%)**
Railway Length	km	63221	63273	0%
Electricity Generation	MKWH	552655	627077	13%
Per capita power consumption	KWH	411	672	64%
		2002	**2008**	
Road Length	km	2456647	3174620	29%
		2002	**2006**	
Motor vehicles	000	58863	89618	52%
Vehicle Density		18	27	50%

Source: Socio-Economic Review of Gujarat

Table 3.7	Trend of Health Indicators of India[45]			
Indicator		**2000**	**2005**	**2010**
Crude Birth Rate	%	25.80	23.80	22.1
Crude Death rate	%	8.4	7.6	7.2
Decadal Pop. Growth	%	21.2	16.3	14.9
		1999-2001	**2004-06**	**2009**
Maternal Mortality Rate	per lakh	327	254	212
		1996-98	**2002-04**	**2007-08**
Total Fertility Rate		3.3	2.9	2.6
Infant Mortality Rate	Per 1000	68	58	47
Institutional Delivery	%	33.6	40.5	47
Full ANC	%	43.8	44.2	50.7
Full Immunization	%	42	45.8	53.5
Contraceptive use	%	48	53	54
Life Expectancy at Birth	Male	61.3	61.6	63.3
	Female	63	65.8	68.1

Source: Sample Registration System & National Family Health Survey

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[45] Sample Registration System: Registrar General of India, Vital Statistics Division-October 2006 and December 2011 bulletins.

Physical infrastructure of the country has shown general improvement in the areas of electricity generation and per capita consumption, length of roads, number & density of vehicles. However, the railways network has remained stagnant during the period 2004 to 2008 (Table 3.6).

3.2 Health Profile

Analysis of RCH indicators in the last 10 years shows the trend before and after the launch of NRHM (Table 3.7). The improvement in RCH indicators during the 5 years period before and 5 years period after the launch of NRHM can be ascertained from the data. Decline can be seen in CBR, CDR and decadal population growth. However, the rate of improvement has slowed down in last five years in some indicators. This can be observed in MMR and TFR, whereas decline in IMR has accelerated after NRHM. While the institutional delivery has improved at a steady level, improvement in full ante-natal check up and full immunization has accelerated. Contraceptive use has shown only marginal improvement which is the reason for decline in couple protection rate.

Improvement in life expectancy is much more among female than male population both before and after NRHM. In case of male population, life expectancy which was almost static before the launch of NRHM, has improved after the launch.

3.2.1 Health care Performance across States

Table 3.8	Health Indicators - Comparison of States I											
State	**Crude Birth Rate**				**Crude Death Rate**				**Total Fertility Rate**			
	1971	**1981**	**1999**	**2009**	**1971**	**1981**	**1999**	**2009**	**1971**	**1981**	**1999**	**2009**
Andhra Pradesh	34.8	31.7	21.7	18.3	14.6	11.1	8.2	7.6	4.6	4	2.4	2
Assam	38.5	33	27	23.6	17.8	12.6	9.7	8.4	5.7	4.1	3.2	2.6
Bihar		39.1	30.4	28.5		13.9	9.1	7.0		5.7	4.3	4
Gujarat	40	34.5	25.4	22.3	16.4	12	7.9	6.9	5.6	4.3	3	2.8
Karnataka	31.7	28.3	22	19.5	12.1	9.1	7.9	7.2	4.4	3.6	2.4	2.2
Kerala	31.1	25.6	18	14.7	9	6.6	6.4	6.8	4.1	2.8	1.8	1.7
Maharashtra	32.2	28.5	21.1	17.6	12.3	9.6	7.5	6.7	4.6	3.6	2.7	2.1
Punjab	34.2	30.3	21.5	17	10.4	9.4	7.4	7.0	5.2	4	2.6	2
Tamil Nadu	31.4	28	19.3	16.3	14.4	11.8	8	7.6	3.9	3.4	2	1.7
Uttar Pradesh	44.9	39.6	32.1	28.7	20.1	16.3	10.5	8.2	6.6	5.8	4.6	4
West Bengal		33.2	20.7	17.2		11	7.1	6.2		4.2	2.4	2.1
India	36.9	33.9	26.1	22.5	14.9	12.5	8.7	7.3	5.2	4.5	3.2	2.9

Source: Population Commission of India

Availability and utilisation of RCH services is a critical determinant of performance of these initiatives and achievements in terms of reduction in IMR, TFR and CBR. However, it can be noted that achievement in all the States is not uniform[46] (Table 3.8).

For example, though both Punjab and Tamil Nadu have good primary health care system and the former has higher per capita income, IMR and TFR are higher in Punjab at 38 and 2 compared to 28 and 1.7 in Tamil Nadu. Till 1980s, Tamil Nadu had higher IMR compared to Punjab. Uttar Pradesh and Bihar have similar socio-economic development. However, IMR is lower in Bihar at 52 compared to 63 in Uttar Pradesh in 2009. The same can be observed in other indicators like MMR and CDR also. A comparison of Assam and Bihar shows that, Bihar has an IMR of 52 and TFR of 4 whereas Assam has a higher IMR of 61 and a lower TFR of 2.6.

Table 3.9	Health Indicators - A comparison of States II							
	Infant Mortality Rate				Maternal Mortality Rate			
	1971	1981	1999	2009	1987-96	2001-03	2004-06	2007-09
Andhra Pradesh	106	86	66	49	283	195	154	134
Assam	139	106	76	61	964	490	480	390
Bihar	118	69	66	52	513	371	312	261
Gujarat	144	116	63	48	596	172	160	148
Karnataka	95	69	58	44	480	228	213	178
Kerala	58	37	14	12		110	95	81
Maharashtra	105	79	48	31	380	149	130	104
Punjab	102	81	53	38		178	192	172
Tamil Nadu	113	91	52	28	195	134	111	97
Uttar Pradesh	167	150	84	63	737	517	440	359
West Bengal	91	71	52	33	458	194	141	145
India	129	110	70	50	479	301	254	212

Source: Sample Registration System & Population Commission

The relative performance of different States in various indicators also shows high level of variation. Gujarat which had a CDR of 16.4 in 1971 achieved a level of 6.9 in 2009. As against this, Karnataka which had a lower CDR of 12.1 in 1971 attained 7.2 in 2009. But in TFR, Karnataka achieved a lower level of 2.2 in 2009 from 4.4 in 1971 compared to 2.8 from 5.6 in Gujarat. It is required to identify factors responsible for poor

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[46] Population growth trends, projections, challenges and opportunities - Working Papers on Health, Planning Commission of India, 2001.

achievements and specific remedial measures have to be undertaken in the States. In case of MMR, Gujarat reached a level of 148 in 2007-09 compared to 596 in late 80's as compared to 178 from 480 in Karnataka. Kerala has maintained a consistent and steady improvement in all the indicators during the last 4 decades (Table 3.9).

In last 4 decades, across the country, Kerala, Tamil Nadu and Andhra Pradesh achieved a steep fall in CBR. In case of CDR, Uttar Pradesh, Bihar and Tamil Nadu achieved significant decline. High decline in TFR is witnessed in Punjab and Assam. Decline in IMR was significantly high in Gujarat, Bihar and Tamil Nadu. Assam, UP and Gujarat has high decline in MMR during the period.

Similar pattern can be observed in the differences between districts within the same State. Under the Reproductive Child Health program efforts are made to improve the quality and coverage of these services in all states. In each state, the success achieved by better performing districts can be replicated in other districts; in addition, efforts will have to be made to achieve incremental improvement in performance in all districts so that the performance in the State improves.

States like Kerala and Tamil Nadu have achieved low CBR and IMR at relatively low cost[47]. On the other hand, States like Haryana and Punjab have not achieved any substantial reduction in CBR in spite of higher expenditure per eligible couple. In States like Bihar and Uttar Pradesh the expenditure level and performance is low. In between these extreme categories are States like Orissa and Andhra Pradesh with average expenditure and moderate performance in RCH or family planning.

3.3 Healthcare Infrastructure in India

At the national level, Ministry of Health and Family Welfare plays a key role in the effort to enable citizens to lead a healthy life by promoting policies and programs to cover preventive, promotive and curative health care. Maternal and Child Health comes under the Department of Family Welfare. The Ministry is headed by Cabinet Minister and the executive head of the department is Secretary to Government of India. Various technical divisions functioning in the department are technical operations, maternal and child health, evaluation and intelligence, information, education and communication, supply, universal immunization, projects and rural health.

Under the constitution, main responsibility of providing health services to people lies with the State Government through hospitals, dispensaries, health centres and clinics.

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[47] Berman, Peter and Ravi Ahuja: Government Health Spending in India, Economic & Political Weekly, June 28, 2008.

The Ministry of Health and Family Welfare at the State level has the responsibility of delivering primary health care services including maternal and child health services. Like Central Government, the ministry is headed by Cabinet Minister and the departments of Health and Family Welfare are headed by Principal Secretary to State Government. The Commissioner or Director of health is responsible for the organization and implementation of all health services including family welfare services.

Table 3.10		**Health Care Infrastructure in India**		
Indicator		**2004**	**2009**	**Change (%)**
No of Doctors		643964	793305	23%
No of Nurses		865135	1073638	24%
Doctors in PHC		21974	23982	9%
Specialists in CHC		3953	5789	46%
Health Workers	Male	60756	57439	-5%
	Female	138906	190919	37%
Sub Centres		142655	145894	2%
PHC		23109	23391	1%
CHC		3222	4510	40%
Allopathic Medical Colleges		229	289	26%

Source: Central Bureau of Health Intelligence

District is the vital link between the State and the network of primary health centres and sub-centres. The Chief District Health Officer is responsible for implementing health and family welfare programs according to the policies of the Government. Under him, Reproductive and Child Health Officer is responsible for implementation of RCH initiatives in the district. The 3-tier of health centres at the district level covers the functional and spatial needs of health delivery. At the top is Community Health Centre (CHC) which is established at taluka/block level which functions as first level referral institution.

Chart 3.1: Health Care Structure in India

Ministry of Health & Family Welfare

Secretary of Health & Family Welfare

Secretary

AYUSH

-MCI
-DCI
-NSI

DG (ICMR)

Health & Family Welfare

DGHS

NACO

Additional Secretary (Health)

Program Officers

ADG Nursing

DCGI

Director CGHS

DDG Medical Education

AYUSH Hospital

District Hospital

Medical Colleges

AYUSH Dispensaries

Sub District Hospital

Dispensaries

Taluka Hospital

CHC

PHC

Community

AWW   RMP

TBA

Sub Centres

MCI - Medical Council of India
DCI – Dental Council of India
NCI – Nursing Council of India
DG – Director General
DDG – Deputy Director General
ADC – Asst. Director General
DGCI – Director Controller General of India

Delivery of primary health care at rural level is the principal objective of network of PHC and sub-centres. One PHC covers a population of 30000 and provides comprehensive essential health care including maternal and child health. Sub-Centres are the peripheral outposts of health care delivery system which cover a population of approximately 5000. They provide preventive and promotive health care. Female Health Worker is crucial in providing MCH services in rural areas supporting multipurpose health workers, village health guides, traditional birth attendants and Anganwadi workers.

The health care infrastructure in terms of hospitals and manpower has improved between 2004 and 2009 in the country. During this period, the number of doctors and nurses improved by 23% and 24% respectively. However, at the PHC level, availability of doctors improved only by 9%. Number of male health workers has declined by 5% whereas number of female health workers has increased by 37% respectively. The number of sub-centres and PHC has become almost stagnant whereas number of CHC has increased by 37%. New medical colleges have come up during the period with an increase of 26%. (Table 3.10)

Non-Governmental Sector

Private sector, voluntary organizations and indigenous medical practitioners play an important role in health delivery system. Private sector and practitioners have a dominant presence in the health care system providing nearly 60% of the health care services in the country with predominant focus and presence in curative health care. The role of NGO has been undergoing sea change in recent years towards equal partnership to support the Government efforts to implement various programs like school health program, pulse polio program, strengthening women organizations, control of STD/HIV and family planning programs. Indigenous medical practitioners including registered and non-registered medical practitioners have good rapport with the community and can be of great help in promoting preventive aspects of health

It is estimated that at the time of independence private sector in India had only 8% of health care facilities. But at present 93% of all hospitals, 64% of beds, 80-85% of doctors, 80% of outpatients and 57% of inpatients are in the private sector[48]. Non-profit health institutions account for 1.32% of all health care enterprises. Their spread is erratic in different states. Uttarakhand and Punjab have 43% and 15% of health care establishments run by NGOs. States like Bihar, Karnataka, Jharkhand and Goa have negligible presence of NGOs accounting for less 1% of total health care establishments[49].

Though there is no restriction for the participation of the private sector in all areas of health activities – primary, secondary or tertiary, looking to the past experience, it can reasonably be expected that its contribution would be substantial in the urban tertiary sector, and moderate in the secondary sector. Presence of large poor population in the

[48] Health Care in India: Emerging Market Report – PricewaterhouseCoopers, 2007.
[49] Venkata Raman, A: Private Sector Health Care Delivery in India – Faculty of Management Studies, Delhi University, 2005.

country necessitates the primary role of Government mechanism to provide primary health care.

3.4 Health Care Organizations in India

1. Medical Council of India

The Medical Council of India (MCI) is the statutory body for maintenance of quality and high standards of medical education in India[50]. The Council grants recognition of medical qualifications, gives accreditation to medical colleges, grants registration to medical practitioners, and monitors medical practice in India. Established in 1934 under the Indian Medical Council Act, 1933, the Council was later reconstituted under the Indian Medical Council Act, 1956. The main functions of the Medical Council of India are: recognition of medical qualifications granted by medical institutions of India; recognition of foreign medical qualifications in India; accreditation of medical colleges; maintenance of uniform standards for undergraduate medical education and; regulation of postgraduate medical education in medical colleges accredited by it.

At present there are 229 recognized medical colleges permitted under the Indian Medical Council Act, 1956. Approximately 33528 graduates pass out every year from these colleges. After completing compulsory rotating internship, they are required to be registered with State Medical Council or Medical Council of India to practice medicine in the country.

2. Indian Medical Association

Indian Medical Association (IMA) is a national organization of doctors of modern scientific system of medicine, which looks after the interest of doctors and the well being of the community at large. It has Branches in 23 States and 9 Union Territories with over 178000 doctors as its members through over 1700 local branches spread all over the country[51]. The main objectives of the organization are: promotion and advancement of medical and allied sciences in all their branches; improvement of public health and medical Education in India and; maintenance of honour and dignity of medical profession.

It plays key role with involvement in the formulation and implementation of National Health Programs like Family Welfare, Maternal and Child Health, Universal Immunization Programme, Oral Rehydration Therapy, and AIDS Prevention, Control and

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[50] Annual Report 2009-10: Medical Council of India, New Delhi, 2010.
[51] Indian Medical Association: http://www.ima-india.org/IMA_history.html

Management[52]. The IMA and its branches have been running many community service projects and a number of branches have established Family Welfare Clinics, Immunization Centres, Ambulance Services, Blood Banks, Polio Eradications and RCH programs.

3. Nursing Council of India

Indian Nursing Council is an autonomous regulatory body under the Ministry of Health & Family Welfare, Government of India, constituted under the Indian Nursing Council Act, 1947. The functions of Indian Nursing Council are: to establish and monitor a uniform standard of nursing education; to prescribe syllabus and regulations for nursing programs; to withdraw the recognition of qualification and; to advise the State nursing councils, examining boards, State Governments and Central Government in important issues regarding nursing education. In 2010, there were 2028 general nurse midwives and 676 auxiliary nurse midwives institutions which had admission strength of 80332 and 15335 students respectively.

4. Dental Council of India

The Dental Council of India was incorporated under The Dentists Act, 1948 to regulate dental education and profession in India. The council is entrusted with the functions of maintenance of uniform standards of dental education and to prescribe standard curricula for the training and examination.

In consonance of the provisions of the Act, Dental Council of India is entrusted with the following objectives: Maintenance of uniform standards of Dental Education – both at undergraduate and postgraduate levels; to prescribe a standard curricula for the training of dentists, dental hygienists, dental mechanics and the conditions for such training; to prescribe the standards of examinations and other requirements required to secure recognition under the Act. In 2010, there were 289 dental colleges which gave admission to 21547 under-graduate and 2783 post-graduate students.

5. Pharmacy Council of India

Pharmacy education and profession in India is regulated by Pharmacy Council of India (PCI), a statutory body governed by the provisions of the Pharmacy Act, 1948. The objectives of the council are: to regulate the profession and practice of pharmacy; to prescribe minimum standard of education; to ensure uniform implementation of standards; to approve courses of study and examination and to maintain central register of

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[52] Journal of Indian Medical Association, May, 2010

pharmacists. In 2010, there were 608 pharmacy colleges which provided admission to 36115 students.

6. Indian Council of Medical Research

The Indian Council of Medical Research (ICMR) founded in 1911 is the apex body for formulation, coordination and promotion of biomedical research in India. Funded by the Government of India, the council's research priorities are based on national health priorities such as control and management of communicable diseases, fertility control, maternal and child health, control of nutritional disorders, developing alternative strategies for health care delivery, containment within safety limits of environmental and occupational health hazards, research on major non-communicable diseases and drug research.

ICMR's research effort has a special focus on changing public health scene especially when resources are severely limited, which is a typical problem encountered in the management of medical research, particularly in developing countries.

7. Quality Council of India

Quality Council of India (QCI) was set up in 1997 jointly by the Government of India and the three industry associations i.e. Associated Chambers of Commerce and Industry of India (ASSOCHAM), Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI), to establish and operate national accreditation structure and promote quality through National Quality Campaign. QCI is registered as not-for-profit society with its own Memorandum of Association and Rules & Regulations. The Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, is the nodal ministry for QCI.

National Accreditation Board for Hospitals & Healthcare Providers (NABH) is a constituent board of Quality Council of India, set up to establish and operate accreditation program for healthcare organisations. The board is structured to cater to much desired needs of the consumers and to set benchmarks for progress of health industry. The board while being supported by all stakeholders including industry, consumers, government, have full functional autonomy in its operation. Some States like Gujarat have initiated the process of NABH accreditation for public hospitals. The mission of Gujarat government is to enhance patients' quality of life by providing specialized medical treatment and preventive health care at free/affordable cost.

8. Public Health Foundation of India

Public Health Foundation of India (PHFI) is a public-private initiative of Central and State Governments, academia, multilateral agencies and civil society groups. PHFI was launched in 2006 to strengthen training, research and policy development in the area of Public Health. As an independent foundation, PHFI adopts a broad, integrative approach to public health, tailoring its endeavours to Indian conditions. It focuses on broad dimensions of public health that encompass promotive, preventive and therapeutic services.

The main purposes of PHFI[53] are assisting the growth of public health training institutions/ departments to facilitate their evolution into major institutes of public health; establishing a strong national research network of public health and allied institutions which would undertake policy and program relevant research that will advance public health goals in priority areas; engaging public health expertise to collectively undertake analytical work for generating policy recommendations related to public health action and; developing a vigorous advocacy platform to communicate these recommendations to policy makers and other relevant stake holder groups.

9. National AIDS Control Organization (NACO)

NACO is a division of the Ministry of Health and Family Welfare that provides leadership to HIV/AIDS control program in India through 35 HIV/AIDS Prevention and Control Societies. The vision of NACO is that every person living with HIV has access to quality care and is treated with dignity. Effective prevention, care and support for HIV/AIDS is possible in an environment where human rights are respected and where those infected or affected by HIV/AIDS live a life without stigma and discrimination.

NACO strives to improve access and accountability of services by fostering collaboration with NGOs, women's self-help groups, faith-based organisations, people's networks and communities. NACO aims to contain the spread of HIV in India by building an all-encompassing response reaching out to diverse populations and provide accurate, complete and consistent information about HIV, promote use of condoms for protection, and emphasise treatment of sexually transmitted diseases.

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[53] La Forgia, Gerard and Krishna D. Rao: India Health Beat – Policy Notes- Public Health Foundation of India, New, 2006-12.

3.5 Health Care Legislations

1. Constitutional Provisions

Health care as envisaged in the Constitution of India as outlined in the Directive Principles of State Policy in Articles 42 and 47 of Chapter IV. As per Article 42, the State shall make "Provision for just and humane conditions of work and maternity relief". And according to Article 47, it is the "Duty of the State to raise the level of nutrition and the standard of living and to improve public health". Thus both the Articles feature a universal health care system run by the Centre and States.

2. Public Health Act

Few States like Kerala and Tamil Nadu have separate law for public health, the Travancore-Cochin Public Health Act, 1955 and Madras Public Health Act, 1939 respectively. Key public health functions are transferred to Panchayats and Municipal bodies under the Act. Some key functions transferred under the Act are sanitation, disposal of solid and liquid wastes, vector control, immunization and other preventive measures, management of dispensaries, and management of child welfare centres and maternity homes.

3. Medical Termination of Pregnancy Act, 1971

As an important legislation for maternal and child health in India, this law provides for abortion services on a woman in an approved clinic or hospital under stipulated conditions. The Medical Termination of Pregnancy (MTP) Act of India clearly states the conditions under which a pregnancy can be ended or aborted, the persons who are qualified to conduct the abortion and the place of implementation. According to Consortium on National Consensus for Medical Abortion in India[54], an average of about 11 million abortions take place annually and around 20,000 women die every year due to abortion related complications. Most abortion-related maternal deaths are attributable to illegal abortions.

Voluntarily 'causing miscarriage' to a woman with child – other than in 'good faith for the purpose of saving her life' is a crime under Section 312 of the Indian Penal Code. The MTP Act is an empowering legislation, which if adhered to completely, offers protective umbrella allowing clinicians to offer legal safe abortion services within well-defined limits.

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[54] Radhakrishnan, Prathima: Referral for Abortion, Indian Journal of Medical Ethics: 2009, Oct-Dec: 6(4)

4. Pre-Natal Diagnostic Techniques (PNDT) Act, 1994

Female infanticide was prohibited in the country even before independence, by way of penal provisions in Indian Penal Code, 1860. However, the provisions were toothless as a result of which there is prevalence of high rates of infanticide and foeticide. With the advent of technologies[55] for sex determination during pregnancy, female foeticide became rampant resulting in decline in sex ratio. In 1994, the parliament enacted The Pre-Natal Diagnostic Techniques (Regulation and prevention of misuse) Act to regulate and prevent misuse of diagnostic techniques and to provide strict penal action.

The Act was further amended in 2003 to make it more comprehensive and renamed as Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994. It has explicit provisions for use, regulation and monitoring of ultra sound machines to curb their misuse for determination of sex of the foetus.

5. Food Safety and Standards Act, 2006

Various central Acts like Prevention of Food Adulteration Act, 1954, Fruit Products order, 1955, Meat Food Products Order, 1973, Vegetable Oil Products (Control) Order, 1947, Edible Oils Packaging (Regulation) Order 1988, Solvent Extracted Oil, De-Oiled Meal and Edible Flour (Control) Order, 1967, Milk and Milk Products Order, 1992 etc were repealed with the enactment of this law.

The Act aims to establish a single reference point for all matters relating to food safety and standards by establishing an independent statutory authority – the Food Safety and Standards Authority of India (FSSAI) to enforce various provisions of the Act. Ministry of Health & Family Welfare is the administrative ministry for the implementation of laws for food safety and standards. It lays down standards for articles of food and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption.

FSSAI has been mandated by the FSS Act, 2006 to: frame regulations to lay down the standards and guidelines in relation to articles of food; lay down mechanism and guidelines for accreditation of certification bodies; lay down procedure and guidelines for accreditation of laboratories; provide scientific advice and technical support to Government; collect and collate data regarding food consumption, incidence and prevalence of biological risk, contaminants in food, identification of emerging risks and

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[55] Annual Report on implementation of Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of sex selection) Act, 1994, PNDT Division, Ministry of Health and Family Welfare, Govt. of India, 2005.

introduction of rapid alert system; creating an information network of public, consumers and panchayats across the country; provide training programs for persons involved in food businesses; contribute to the development of international technical standards for food, sanitary and phyto-sanitary standards and; promote general awareness about food safety and food standards.

6. Drugs and Cosmetics Act, 1940

The manufacture and sale of drugs is a licensed activity under the Drugs and Cosmetics Act, 1940. It has provisions to check production of spurious and sub-standard drugs in the country and to take penal action against the offenders. Regulatory control over manufacture and licensing is exercised by the State licensing authorities appointed by State Governments. The prevalence of spurious drugs is a major public health concern and hence the Government has taken many initiatives to enforce the law which include whistleblower scheme, strengthening drug testing laboratories and good manufacturing practices.

7. Environmental Legislations

Pollution of environment in different forms has a direct impact on the public health of the people. There are legislations on water, air and other forms of pollution in the form of Water (Prevention and Control of Pollution) Act, 1974; Air (Prevention and Control of Pollution) Act, 1981, Environment (Protection) Act, 1986, Hazardous Waste (Management & Handling) Rules, 1989 and Bio-medical Waste (Management & Handling) Rules, 1998. These laws are implemented through the State pollution control boards under the guidance of central pollution control board.

8. Other Laws

There are many other statutes which are relevant in the context of health care management in the country. The important statutes are the Drugs (Control) Act, 1948, Maternity Benefit Act, 1961, the Registration of Birth and Death Act, 1969, Dangerous Machines (Regulation) Act, 1983, Narcotic Drugs and Psychotropic Substance Act, 1983, Consumer Protection Act, 1986, Epidemic Diseases Act, 1987, The Mental Health Act, 1987 and Transplantation of Human Organs Act, 1994.

3.6 Health Programs in the Country

1. Reproductive and Child Health Program

The second phase of RCH program i.e. RCH II commenced from 1st April, 2005 under NRHM after the end of Phase I[56]. The main objective of the program is to bring about a change mainly in three critical health indicators i.e. reducing total fertility rate, infant mortality rate and maternal mortality rate with a view to achieve the outcomes envisioned in the NPP, NHP, MDG, Tenth Plan Document and India Vision 2020.

Salient features of RCH - II Program are: adoption of sector-wide approach; building State ownership by involving States from the beginning of the program; decentralization through development of District and State level need based plans and; capacity building at the district, state and the central level to ensure improved program implementation. In particular, the emphasis is on strengthening financial management systems and monitoring and evaluation capabilities at different levels.

2. National Vector Borne Disease Control Program

Directorate of National Vector Borne Disease Control Program (NVBDCP) is the central nodal agency for prevention and control of vector borne diseases i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya in India. It is one of the technical departments of Directorate General of Health Services, Government of India. The program provides detailed guidelines for control of these diseases, information, education and communication activities and capacity building.

3. Revised National Tuberculosis Control Program (RNTCP)

India has adopted WHO- recommended Directly Observed Treatment (DOT) under RNTCP program in 1997. The main components are: case detection by sputum smear microscopy examination among symptomatic patients; administration of anti-TB drugs under the direct observation of the health care provider/community DOT provider; regular and uninterrupted supply of anti-TB drugs; systematic recording and reporting that allows assessment of treatment result of each patient and: finally, political commitment to control TB. In 2006, a new stop strategy for TB with the following components was adopted: to pursue high quality DOT expansion; to address TBHIV, MDR-TB and other challenges; contribute to health system reengineering and; to promote research.

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[56]Meeting people's health needs in rural areas, National Rural Health Mission – Framework of Implementation 2005-12, Ministry of Health and Family Welfare, Government of India.

4. Integrated Disease Surveillance Project (IDSP)

IDSP was launched in November 2004 under Ministry of Health and Family Welfare[57]. It is a decentralized, State based surveillance program intended to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. Major components of the project are : (1) Integrating and decentralization of surveillance activities; (2) Strengthening of public health laboratories; (3) Human Resource Development – Training of State Surveillance Officers, District Surveillance Officers, Rapid Response Team, other medical and paramedical staff; and (4) Use of Information Technology for collection, collation, compilation, analysis and dissemination of data.

New areas in the project are Non-Communicable Diseases Risk Factor Survey currently being conducted in the states of Andhra Pradesh, Tamil Nadu, Kerala, Maharashtra, Madhya Pradesh, Uttarakhand and Mizoram. The survey is to be repeated every 3 years to cover all states in phases.

5. National Leprosy Eradication Program

The National Leprosy Eradication Program is a centrally sponsored health scheme of Ministry of Health and Family Welfare. The program is also supported by WHO, International federation of anti-leprosy association and NGO. The strategy for elimination of leprosy includes decentralization to states and districts, integration of leprosy with general health care system, training, early diagnosis, prevention of disability and medical rehabilitation. The prevalence at the national level has declined from 5.9 in 1991 to 0.69 in 2011 per 10000 populations.

6. Rogi Kalyan Samiti (RKS)

RKS (Patient Welfare Committee) is a management structure which is a registered society to manage the affairs of hospitals. It consists of representatives of local bodies, NGOs, local elected representatives and is responsible for proper functioning and management of hospitals and quality of services.

The functions include identifying problems faced by the patients, procuring equipments and furniture, arrangements for maintenance of hospitals, involve private partners for cleaning, laundry, diagnostic and ambulance services and encourage community participation.

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[57] Annual Report, Integrated Disease Surveillance Project, Ministry of Health and Family Welfare, Govt. of India, 2008

7. Rashtriya Swastha Bhima Yojna (RSBY)

RSBY, introduced in 2007 is a new health insurance scheme for the Below Poverty Line (BPL) families in the unorganized sector. The objective of RSBY is to provide the insurance cover to below poverty line households from major health shocks that involve hospitalization. In terms of funding, 75% is provided by the centre while the remainder is borne by the state government. The scheme is being implemented in phased manner covering 20% of districts every year. Under the scheme, BPL families are entitled to more than 700 in-patient medical procedures with a cost of up to 30,000 rupees per annum for a nominal registration fee of 30 rupees. Pre-existing medical conditions are covered and there is no age limit. Coverage extends to the head of household, spouse and up to three dependents.

8. Janani Surakhsha Yojna (JSY)

JSY is a safe motherhood intervention under the NRHM implemented with the objective to reduce maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women. The scheme launched in 2005, is being implemented in all states with special focus on low performing states. The scheme integrates cash assistance with delivery and post-delivery care. Each beneficiary registered under this program is tracked with a MCH card and an ASHA/AWW/ any other identified link worker under the overall supervision of the ANM, and the medical officer of the concerned PHC, should prepare a micro-birth plan. This will effectively help in monitoring Antenatal check-up, improve institutional delivery and the post delivery care.

4. Health Care Delivery in Gujarat

Gujarat State, located in the western part of India possesses a total land area of 196924 sq. km and was established in the year 1960. For administrative purpose the State is organized into 26 districts, 225 talukas and 18066 villages. There are 242 towns and urban agglomerations including 8 municipal corporations. From the inception, the State has witnessed not only significant growth in size of economy but undergone a structural change in economy with high degree of industrialization and rapid urbanization.

4.1 Demographic and Socio-Economic Profile

4.1.1 Demographic Profile

Table 4.1		Gujarat: Demographic Trend			
Factor		Gujarat		India	
		2001	2011	2001	2011
Population (Lakhs)		506	603	10287	12101
Urbanization (%)		37.35	42.58	27.81	31.20
Sex Ratio	All	920	918	933	940
	Children below 7 yrs	883	886	934	944
Crude Birth Rate[58], %		24.9	22.3	24.1	22.3
Crude Death Rate, %		6.9	6.9	7.5	7.3
Annual growth in population, %		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	79.66	87.23	75.26	82.14
	Women	57.80	70.73	53.67	65.26
	Overall	69.14	79.31	64.84	74.04

Source: Census of India and Sample Registration System

The population of the State increased from 506 lakhs in 2001 to 603 lakhs in 2011 (Table 4.1). An analysis of growth trend shows a significant drop in annual growth rate in population of 2.06% during 1991-2001 to 1.77% in 2001-11. The annual growth of population is higher than country as a whole because the CBR is same as the country and CDR is lesser. In the last decade, CBR has declined more rapidly than the country as a whole whereas the CDR has remained static. This demographic shift where both crude

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[58] Sample Registration System Reports, Registrar General & Census Commissioner, Ministry of Home, Govt. of India- April, 2006 and June 2011.

birth and death rates have declined is due to sustained efforts to improve the health services and the overall socio-economic condition of people.

Graph 4.1 Gujarat: Demographic Trend
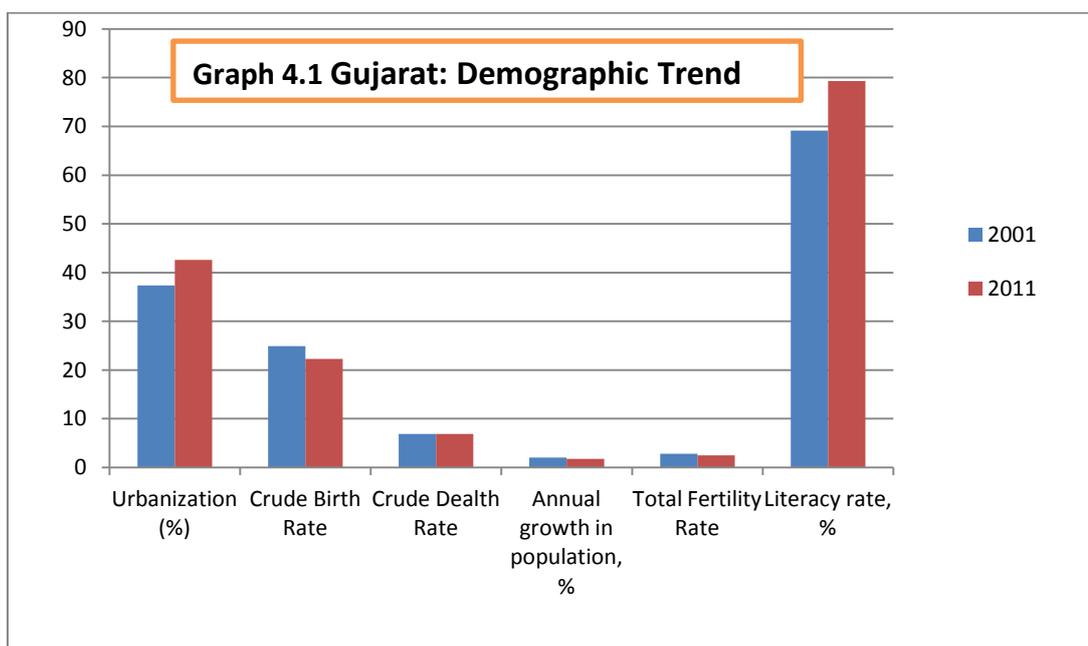
The State is getting rapidly urbanized with growth in urban population from 37.35% in 2001 to 42.58% in 2011 which is much higher than the national average of 31.20%. Though the sex ratio has marginally declined from 920 to 918 between 2001 and 2011, there is an increase in the ratio among the children below 7 years age from 883 to 886 but still a matter of concern.

4.1.2 Socio-Economic Profile

Socio-economic factors like education, per capita income, poverty and investment have large impact on the health outcomes and are in turn influenced by health status of people. Gujarat has strived to attain high and balanced social and economic development as can be ascertained from the indicators like literacy, per capita income and poverty[59]. The overall literacy is 79.31% in 2011 with a female literacy of 70.73%. This is an increase from 69.14% and 57.80% respectively in 2001. It can be observed that the overall literacy has increased and the gap in respect of female literacy has declined. Similar trend can be observed at the national level too.

The State domestic product has witnessed a strong annual growth of 12.63% during 2001-11 compared to 9% for the country as a whole. This has translated in to

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[59] Socio-Economic Review, Gujarat State, 2005-06 and 2010-11- Directorate of Economic and Statistics, Government of Gujarat, February, 2006.

growth in per capita income of 11% compared to 7.6% for the country. Share of Gujarat's GDP in the country has increased from 5.89% in 2005 to 6.50% in 2010. The per capita income of Gujarat has increased by 51.12% compared to 39.7% for the country. The population below poverty line was 16.8% in Gujarat compared to 27.5% for the country. Poverty is higher in rural areas at 19.1% and 16.8% in urban areas (Table 4.2).

In agriculture sector, the average size of landholding is higher in Gujarat at 2.35 ha as against 1.32 ha for the country. However, this has declined in both the cases in 2010 compared to 2005. The livestock population and milk production has increased during the period. Share of livestock in Gujarat has decreased marginally whereas the share of milk production has increased significantly.

Table 4.2		**Gujarat: Socio-Economy**					
Indicator		**India**	**Gujarat**	**Share**	**India**	**Gujarat**	**Share**
		2004-05			**2009-10**		
GDP	'000 crore	2922	172	5.89%	4351	283	6.50%
Per capita income	Rs	24143	32021		33731	49030	
Poverty		**2004-05**					
Overall	%	27.5	16.8				
Rural	%	25.7	19.1				
Urban	%	28.3	13				
Agriculture		**2000-01**			**2008-09**		
Average size of Landholding	ha	1.41	2.62		1.32	2.35	
		2003			**2007**		
Livestock population	000	485002	21671	4.47%	529698	23515	4.44%
		2004-05			**2007-08**		
Milk Production	Mill. Ton	91	6.75	7.42%	104.8	7.91	7.55%
Industries		**2001-02**			**2006-07**		
Working Factories		13950	128549	10.85%	144710	14328	9.90%
Employment	000	7750	713	9.20%	10328	984	9.53%
Value of Output	Rs. Cr	962457	147550	15.33%	2407658	371687	15.44%
Unemployment, 2005-06	Rural	2%	1.30%				
	Urban	4.50%	3.30%				
Commerce		**2005**			**2009**		
Banks		68116	3705	5.44%	79933	4338	5.43%
Credit-Deposit ratio		66.04%	46.73%		70.30%	61.90%	

Source: Socio-Economic survey of Gujarat

In Industrial sector, the share of number of working factories has declined in Gujarat whereas share in employment and value of output has increased from 2002 and 2007. The share of industrial output of 15.44% is much higher than the population share of 4.98%. In banking, the share of number of branches in Gujarat has remained almost the same. However, the credit-deposit ratio of the state is less than the country though the gap is narrowing down.

4.1.3 Physical Infrastructure[60]

The availability, accessibility and quality of infrastrcture are key factors in the progress and development of the State. Gujarat had 4.62% of total road length and 8.4% of rail length of the country in 2004 (Table 4.3) but witnessed a marginal decline of share in road length and rise in share of railway length in 2008. Per capita consumption of power has increased by almost 50% and remains around twice the national average. Thus, it can be understood that the people of Gujarat have better physcial infrastructure and mobility compared to nationl average.

Table 4.3		Gujarat: Infrastructure					
Parameter		India	Gujarat	% share	India	Gujarat	% share
		2004			2008		
Railway Length	km	63221	5186	8.20%	63273	5328	8.42%
Electricity Generation	Million kwh	552655	41030	7.42%	627077	41307	6.59%
Per cap power consumption	kwh	411	908		672	1331	
		2002			2008		
Road Length	'000 km	2457	138	5.60%	3175	147	4.62%
		2002			2006		
Motor Vehicles	'000	58863	6008	10.21%	89618	8622	9.62%
Vehicle Density		18	31		27	44	

Source: Socio-Economic Survey of Gujarat

Though the share of motor vehicles has declined marginally, it is much higher than the population share of Gujarat. The vehicle density is 44 compared to national average of 27. All these factors indicate a robust physical infrastructure which is stronger than country as a whole.

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[60] Health Statistics, 2009-10, Vital Statistics Division, Commissioner of Health, Medical Services, Medical Education and Research, Gujarat.

4.2 Health Profile of Gujarat

Health has an impact on every other sector of the economy and society and is in turn affected by the growth and development in other sectors. Hence, it is critical to understand the performance of the health sector and the context in which the NRHM program is conceptualised and implemented in the State.

An analysis of major health indicators shows progressive improvement in health status of the people in the State (Table 4-4). The life expectancy of both female and male has increased from 1998-2002 to 2008 by 6.4 and 1.9 years which is higher than the national average improvement of 4.6 and 1.5 years. A decline in crude birth rate as well as crude death rate indicating attainment of the 4th stage of demographic transition where both birth rate and death rates decline and the society achieves stabilization in population in due course can be observed.

Table 4.4		Gujarat: Changes in Key Health Indicators				
	India	Gujarat	India	Gujarat	
Life Expectancy at Birth	1999-2003		2008		
Male	61.8	62.5	63.3	64.4	SRS
Female	63.5	64.6	68.1	71	
Sex Ratio, All	2001		2011		
	933	920	940	918	Census
	2004-06		2009		
Maternal Mortality	254	160	212	148	SRS
	2002-04		2007-08		
Total Fertility Rate	2.9	2.8	2.6	2.5	CBHI
Infant Mortality Rate	58	54	47	44	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	59.2	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. IMR and MMR have improved at the state and national level. However, attainment of outcome targets of less than 30 for IMR and less than 100 for MMR by 2012 in the State appears to be a tough challenge for the health care administration of the State. This appears to be a huge challenge for the country as a whole. Among the output factors,

institutional delivery has improved at national and state level with the former outpacing the later. Similar trend is observed in total immunization also. In contraceptive use, Gujarat outperforms the country as a whole.

4.2.1 Health Infrastructure in Gujarat

Primary health care infrastructure in terms of number of PHC and sub-centres has remained the same in Gujarat after NRHM, from 2004 to 2009. However, the state has better coverage in terms of average number of villages covered by health centres. New CHC were started during the period. It can be observed that the basic physical infrastructure was in place in Gujarat even before the launch of NRHM (Table 4.5).

Table 4.5	Health Care Infrastructure in Gujarat					
Indicator	2004			2009		
	India	Gujarat	Share	India	Gujarat	Share
Sub Centres	142655	7274	5.10%	145894	7274	4.99%
Villages /Sub-Centre				4	2	
PHC	23109	1070	4.63%	23391	1084	4.63%
Villages/PHC				25	17	
CHC	3222	271	8.41%	4510	281	6.23%
Villages/CHC				132	64	
Allopathic Medical Colleges	229	13	5.68%	289	14	4.84%

Source: Central Bureau of Health Intelligence

Thus, as far as physical health infrastructure is concerned, the number of villages covered by each sub-centre, PHC and CHC is well above the national figures indicating better reach of health centres. Number of allopathic medical colleges has also increased during the period.

4.2.2 Human Resources in Public Health

Manpower availability in the State as a whole has improved between 2005 and 2010. Population served per doctor has improved from 1401 to 1260 (Table 4.6). The availability of doctors has increased at the national level also. While the availability of nurses has improved at the national level, it has not kept pace with population and has declined from 444 to 469 in Gujarat. The availability of doctors has improved at the PHC level. Gujarat has witnessed improvement as far as the specialists in CHC. Number of health workers has improved for the country as a whole, though number of male health workers has declined. In Gujarat, number of male workers has increased while number of female workers has declined.

Table 4.6	Manpower in Health in Gujarat					
Indicator	2004			2009		
	India	Gujarat	Share	India	Gujarat	Share
No 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 4.7	Gujarat: Status of Health Personnel			
Category	Required	Available	Shortfall	% Shortfall
Sub-Centre	7263	7274	-	
Primary Health Centre	1172	1073	99	8%
Community Health Centre	293	273	20	7%
MPHW (Female) at Sub-Centres & 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 PHCs	1073	2421	-	
Doctors at PHCs	1073	1019	54	5%
Obstetricians & Gynaecologists at CHCs	273	6	267	98%
Physicians at CHCs	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

An analysis of health personnel at sub-centre, PHC and CHC of Gujarat was carried out to ascertain the requirement, availability and shortfall. Shortfall level is significant in case of health workers and assistants at 27%. In case of doctors vacancy is 5%. Huge vacancy is observed in the category of specialist doctors posts in CHC. Vacancy in case of paramedical staff is 39.2% and nurses are 47% (Table 4.7).

4.2.3 Health Finance

It can be seen that financial resources committed to health sector in the Government budget has significantly increased from 3.95% in 2005 to 6.4% in 2010 in planned outlay. Significantly, non-plan budget has declined from 2.75% to 2.6% during the same period. Overall, the health sector allocation has increased from 3.11% to 4.19% (Table 4.8).

Table 4.8	Gujarat: Health Finance/ Budget		
		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

4.3 Public Health Management in Gujarat

Public health care system in Gujarat has three levels – primary, secondary and tertiary level institutions. Primary level infrastructure comprises of 7274 sub-centres, 1096 PHC and 290 CHC. The secondary level consists of 24 district level and 26 taluka/sub-district level hospitals. The tertiary level covers teaching hospitals with medical colleges and specialized hospitals. The State has 14 medical colleges[61] out of which 8 are in non-Government sector and 15 training schools for auxiliary nurse midwives.

The State implements national health programs for Malaria, Tuberculosis, Leprosy, epidemic control, HIV/AIDS, Janani Suraksha Yojna and family welfare

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[61] Health Statistics of Gujarat: Commissionerate of Health, Government of Gujarat- 2010.

(including RCH), in addition to the State programs[62] like Chiranjeevi, 108 emergency ambulance services, Mamta Abhiyan, Bal Sakha Scheme and Beti Bachao Abhiyan.

Chiranjeevi Yojna was launched by the Government to protect mothers and babies from complications arising out of child birth by promoting institutional deliveries, with the involvement of private nursing homes and recognized hospitals**. Under Bal Sakha Scheme**, all babies born to BPL mothers in the State are covered for neonatal care by partnering with private Paediatricians, including care in their Neonatal Intensive Care Unit at no cost to the beneficiary. 108 emergency services were launched in private public partnership to cater to wide ranging medical emergencies including cardiac arrests, accidents and obstetric emergencies.

Janani Suraksha Yojna is a safe motherhood intervention under NRHM implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional deliveries. **Mamta Abhiyan** is a package of preventive, promotive, curative and referral services under RCH program comprising of elements of nutrition, immunization and post-natal visit. Periodically, the State Government organizes health campaigns to improve awareness and reach of maternal and child health programs. Nirogi Bal Varsh (Healthy Child Year) campaign was organized in 2008-09 to address issues of nutrition of neonates, care for special children, right of girl child, care of mother and unmet needs of family planning.

Private sector plays a key role in health care delivery in Gujarat. The State has 122 grant-in-aid hospitals based on conventional model of private public partnership. As mentioned earlier, health programs like Chiranjeevi, emergency ambulance service etc are operated on PPP basis. Many corporate groups have set up speciality and super speciality hospitals in the tertiary sector, mainly for curative care.

4.3.1 Health Care Delivery Structure in Gujarat

The department of health and family welfare in Gujarat is headed by the Minister of Health & Family Welfare, who is responsible for policy and administrative decisions at the State level. Principal Secretary (Health and Family Welfare) and Principal Secretary (Medical Services and Medical Education) are the administrative heads of the areas and responsible for implementing policies. Health Commissioner is responsible for implementation of health and medical care policies of the State. He is assisted by

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[62] Saving the mothers and children the Gujarat way- Department of Health & Family Welfare, Gujarat, and October 2008.

Chart 4.1: **Department of Health & Family Welfare, Govt. of Gujarat**
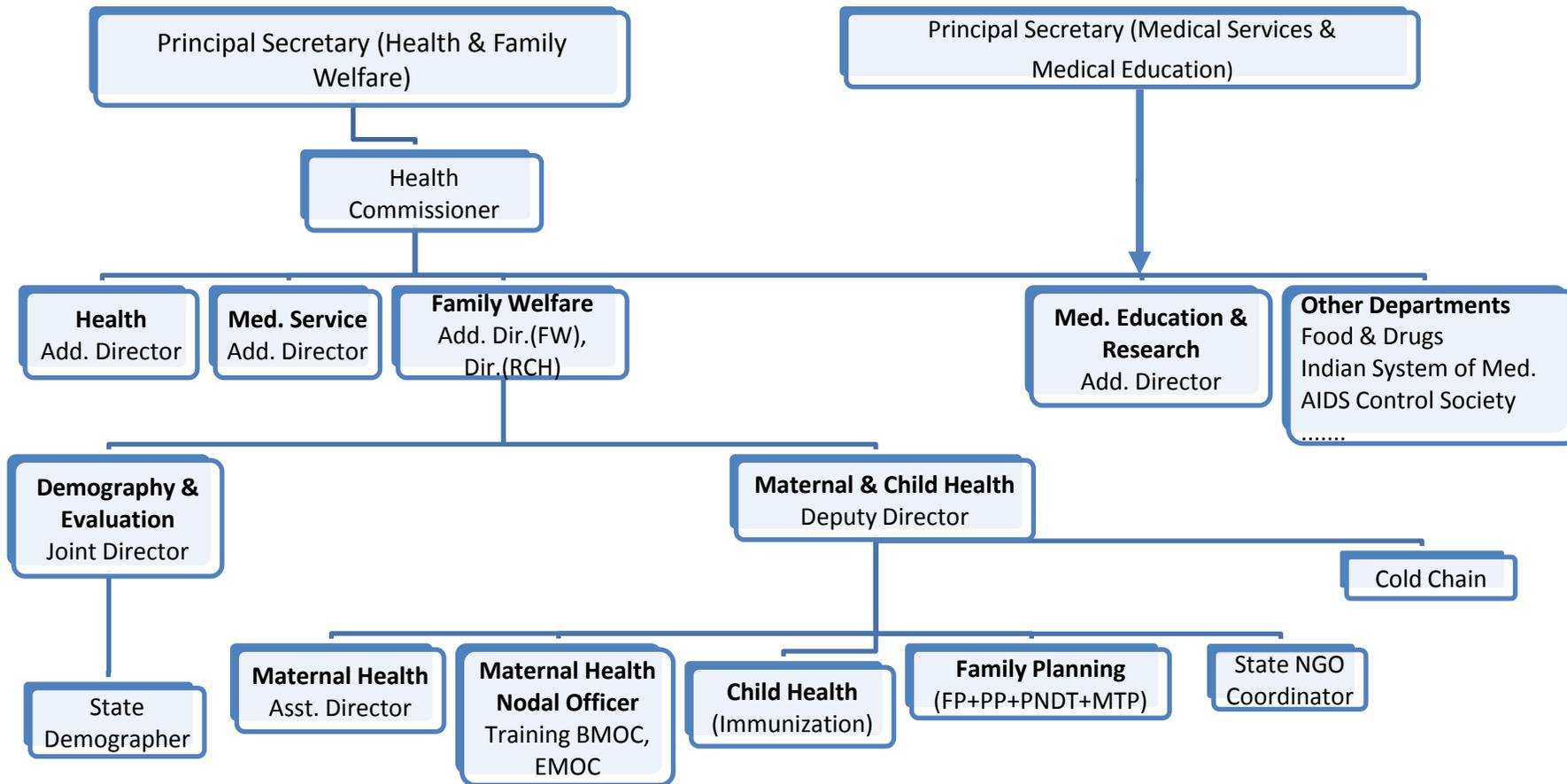
Additional Directors for Health, Medical Services, Family Welfare, Medical Education & Research and Vital Statistics. Functions under Health division comprises of rural and urban health, epidemic control, Malaria, Leprosy, Tuberculosis and AIDS/HIV control, Blindness Control, disaster management, health evaluation and post-partum program. Medical services address curative care and look after all the Civil Hospitals which are headed by Chief District Medical Officers. It also looks after speciality hospitals like mental hospitals, eye hospitals and infectious diseases hospitals.

Family Welfare division supervises RCH, Polio eradication, Neo-Natal survival, NRHM, Malnutrition, Micro-nutrient initiatives, implementation of National Maternity Scheme, Quality Control, Rashtriya Swastha Bhima Yojna and Nutritional cell. Medical Education division supervises all medical, dental and nursing colleges, Physiotherapy, Paramedical institutions, Medical Education and Research Institute. Vital Statistics division looks after State civil registration of birth and death, training material for registration and publication and survey. State Institute of Health and Family Welfare along with its 5 regional training centres imparts training in health and family welfare. Apart from the above, Food and Drugs, AID control society and Indian System of Medicine are the other health care related activities under the department.

<center>**Chapter V**</center>

5. National Rural Health Mission

5.1 Evolution of Maternal and Child Health Programs

1. Safe motherhood and child health programs

Safe motherhood and child health activities are critical and important public health issues in a country which has high level of infant and maternal mortality. Efforts have been made by Government from the first and second five year plans[63] (1951-56 and 1956-61) to strengthen maternal and child health services. In 1952, a national family planning program was launched with the objective of population stabilization. The reactions to population control measures in the 70's prompted the Government to adopt the vision **of Stokhey committee**[64] which was close to the Alma Ata declaration on primary health care which sought commitment of Government to health as a fundamental right, community involvement, integration of health services, universal coverage, choice of appropriate technology, effective use of traditional system of medicine and use of essential drugs.

2. Family Planning Services

Family planning services were integrated with maternal and child health and nutritional programs from fifth five year plan (1974-79) with an objective to provide basic health services to vulnerable groups of pregnant women, lactating mothers and preschool children. In rural areas, MCH services were delivered mainly by Government-run primary health centres and sub-centres. In urban areas, these services were availed from Government or municipal hospitals/ dispensaries, hospitals run by voluntary bodies and private nursing or maternity homes.

3. Child Survival and Safe Motherhood (CSSM)

Based on National Health Policy, 1983, Universal immunization program (UIP) was launched in 1985 to provide universal coverage of immunization to infants and pregnant women. In 1992-93, UIP was strengthened under Child Survival and Safe Motherhood (CSSM) project and was augmented with activities like oral rehydration therapy, prophylaxis for control of blindness in children and control of acute respiratory infections. Under safe motherhood component, training of traditional birth attendants,

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[63] Maternal and Child Health: Chapter 9, National Family Health Survey, 1992-93, Government of India.
[64] Report of Sub-Committee on National Health (Stokhey) Committee Report- Government of India, National Planning Committee- Vora, Mumbai,1948.

provision of aseptic delivery kits and strengthening of first referral units to deal with high risk obstetric emergencies were taken up.

5.2   Reproductive and Child Health Program

In 1996, safe motherhood and child health services were incorporated into the Reproductive and Child Health Program (RCH I). The components of RCH I included family planning, child survival & safe motherhood, adolescent reproductive health and prevention/management of RTI/STD/HIV. The management of the program envisaged client- centric approach, community needs assessment through participatory approach, training and capacity building, management information system and target free approach.

5.2.1 RCH Phase II Program

Second phase of RCH program commenced from April, 2005 along with NRHM for five year period up to 2010 (later extended to 2012). The main objectives of the program were to bring about a change in three critical health indicators i.e. reducing total fertility rate, infant mortality rate and maternal mortality rate with a view to realize the outcomes envisioned in the NPP 2000, NHP 2002, MDG, the Tenth Plan Document and India Vision 2020.

The salient features of RCH - II program are: Sector-wide approach to extend the program reach beyond RCH to the entire family welfare sector; building State ownership by involving all the States; decentralization through development of district and State level need based plans; flexible programming to allow States to develop need based work plans with freedom to decide upon program inputs and; capacity building at district, state and the central level to ensure improved program implementation. There is stress on strengthening financial management systems and monitoring and evaluation capabilities at different levels; performance based funding to ensure adherence to program objectives; reward good performance and support weak performers through enhanced technical performance; and convergence, both inter-sectoral as well as intra- sectoral to optimize utilization of resource as well as infrastructural facilities.

5.2.1 RCH II Program in Gujarat

When NRHM was launched, RCH outcomes in Gujarat were better than the national performance for most of the indicators. In order to achieve the goals under the program, targets were set for various RCH indicators (Table 5.1). The implementation of the RCH II program is for a period of 5 years starting from April 2005 to March 2010, extended till 2012. In the initial years emphasis was given on institutional strengthening followed by technical strengthening before it can be scaled at a higher level.

Table 5.1	RCH II: Targets		
Indicator	**2005**	**2007**	**2010**
% Receiving complete Ante natal care	27.21	70	90
% Institutional deliveries	51	67	80
No. of FRUs for emergency obstetric care	39	102	102
% new born weighed at birth	60	80	90
% women contacted by health worker within 3 days of delivery	50	80	90
% unmet need for family planning	9	7	3
% couple using spacing method	11	20	30

5.3 National Rural Health Mission (NRHM)

NRHM is mission mode initiative with a framework to implement NHP, 2002. It subsumes key national programs, namely RCH II, National disease control programs and integrated disease surveillance project under the same umbrella. It was launched to improve the availability and access to quality health care, particularly to vulnerable rural population. NRHM seeks to provide universal access, equitable, affordable and quality healthcare, reduction of maternal and child mortality as well as population stabilization with gender and demographic balance during its implementation period 2005-12.

To achieve these goals, NRHM will facilitate improved access and utilization of quality health services by all; forge partnership between central, state and local Governments; provide platform for involving panchayat raj institutions in the management of primary health care; provide flexibility to the States and community to promote local initiatives and; develop framework to promote inter-sectoral convergence. Under the mission, the expected outcomes by 2012 are to reduce the IMR to 30 per 1000 live births; to reduce MMR to 100 per 100000 live births; to reduce TFR to 2.1; reduce malaria mortality by 50% in 2010 and by another 10% in 2012; eliminate Kala-Azar by 2010; reduce Filaria/Microfilaria by 70% in 2010, 80% in 2012 and elimination by 2015; reduce dengue mortality by 50% in 2010; reduce Leprosy prevalence rate from 1.8 per 100000 to less than 1 per 100000 and; increase bed occupancy from $< 20\%$ to 75%.

The key features[65] of the mission are to make the public delivery system accountable to community, human resource management, community involvement, decentralization, monitoring and evaluation, convergence of health programs and flexible financing to improve the health indicators. These features are operationalized by

i. Improvement of infrastructure by providing funds for construction/up-gradation of Sub-Centres/PHC/CHC/District hospitals

ii. To ensure availability of requisite equipments and drugs and improve outreach to un-served and under-served areas through mobile medical units.

iii. To ensure availability of critical manpower through initiatives like introduction of Accredited Social Health Activist (ASHA) and Community Based Health Volunteers (CBHV) in urban areas.

iv. To provide managerial support by setting up Program Management Units (PMU) at State and District levels, capacity building of ASHA, ANM, nurses and rural health practitioners by way of continuous skill development

v. Decentralization and convergence of health programs at village and district panchayat levels, preparation of village and district health action plans for planning, convergence, implementation and monitoring of activities under the mission.

vi. To have flexibility in funding by bringing funds under different budget heads under single budget head and flow of funds through societies at State and District level.

vii. Since the mission is based on rights-based approach, to have three pronged accountability- community based, external surveys and internal monitoring. All these efforts will be backed by a strong MIS of indicators and components.

While the mission covers the entire country, 18 states with weak public health indicators and health infrastructure are identified for special attention. The high focus states would be supported by additional ASHA and financial support. Gujarat falls under non-focus major state.

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[65] Meeting people's health needs in rural areas, National Rural Health Mission-Framework for implementation-2005-2012: Ministry of Health and Family Welfare, Government of India.

5.3.1 NRHM in Gujarat[66]: Vision & Strategy

Vision

The overall goal is to improve the quality of life of people living in Gujarat as articulated in Vision 2010 and State Population Policy 2002. NRHM aims to contribute to this and plans to improve the Reproductive and Child Health Status of the people living in the State by implementing RCH II (2005-2012). The specific objectives of the program are to

1. Reduce MMR from 172 (in 2006) to below 100 per 100000 live births by 2012
2. Reduce IMR from 50 to 30 by 2012
3. Stabilize population by reducing TFR from 2.4 to 2.1 by 2012

Strategies and Interventions

The strategies and interventions include program and services for improving maternal health, child health, family planning and adolescents' health.

1. **Maternal Healthcare**

The goal is to reduce Maternal Mortality Rate (MMR) from the present level of 172 per 100,000 to below 100 per 100,000 live births by 2012. In order to achieve this, the objectives are to 1) improve coverage of antenatal care (90%) by 2010 2) increase the deliveries attended by Skilled Birth Attendants by 90% and institutional deliveries by 80%   3) increase access to Emergency Obstetric Care for complicated deliveries 4) increase coverage of post partum care (90%) 5) increase access to early & safe abortion services (1/100,000 Pop) and 6) improve access to RTI/ STI services in all PHCs and all CHC.

2. **Child Healthcare**

To achieve the goal to bring down the Infant Mortality Rate (IMR) from the present level of 60 per thousand live births to less than 30 per thousand live births by 2012, the objectives are to 1) provide essential care to new born at community and facility level 2) promote exclusive breast feeding 4) provide critical newborn care at FRU level, 5) universalise immunisation coverage 6) manage of diarrhoea and ARIs 7) implement Integrated Management of Neonatal and Childhood Illness (IMNCI) in State to manage

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[66] Reproductive and Child Health Program (RCH II) Annual Plan 2007-08, State Program Implementation Plan, Gujarat: Commissionerate of Health & Family Welfare, Department of Health and Family Welfare, Government of Gujarat, March 2007.

sick neonates and children in phased manner and 8) develop Public Private Partnership for critical neonatal care.

3. Family Planning

The goal is to stabilize State population by reducing Total Fertility Rate (TFR) from 3.0 to 2.1 by 2012. In order to achieve this, the objective are to 1) reduce current unmet need for family planning by 75% 2) reduce unmet need for spacing 3) reduce unmet need for terminal methods 4) increase access to non-clinical contraceptives through community based distribution system and 5) improve access to non-clinical contraceptives through Social Marketing and 6) popularise IUD 380- A as an alternative to sterilisation.

4. Adolescent Health

In Gujarat, 22% of population is adolescents (10-19 year group). About one-third (32.26%) of the boys and two-fifths of the girls (38.95%) dropped-out of the school after class 5 in 1997-98. Department of Women and Child Development (DWCD) is supporting Adolescent Counseling Centres in several districts in Gujarat. These Centres are run by NGO with the support of DWCD.

The aim is to improve adolescent health by 1) providing Adolescent Friendly Health Services (AFHS) at CHC/ PHC to increase awareness among the adolescents about the services available 2) Adolescent Reproductive and Sexual Health (ARSH) service to influence the health seeking behaviour of adolescents who are in sexually active age 3) developing linkages for referral services, and 4) Anemia control in adolescent girls and boys.

5.3.2 NRHM Plan

1. Institutional Strengthening

The State would engage the service of experts/ consultants/ staff to put effective management systems in place which will strengthen health care institutions. State health society, family planning bureaus, State supervisory board and other authorities under PNDT Act, State and district level quality assurance committees, District Health Society, training institutions and medical colleges are covered under this activity.

2. Training

Capacity building of human resources is recognised as priority intervention in RCH II for which a program management unit has been planned at district level. The activities include IEC training, program management training for the district and state

managers in collaboration with Indian Institute of Management, Ahmedabad and NGO training by Regional Resource Centre. RCH II orientation, MIS, finance, institutional components and technical training for service providers have been planned in the initial years of the program through State Institute of Health & Family Welfare. Apart from the internal faculties, experts will be invited for the training.

National Institute of Health and Family Welfare (NIHFW) is the nodal institute for training under NRHM. It has the responsibility to organize national level training courses and coordination of the training activities under NRHM with the help of collaborating training institutions in various parts of the country. In Gujarat, the overall responsibility of training programs will be with SIHFW. The Divisional training centre and District training team will provide trainings to doctors, paramedical personnel and supervisors.

3. Financial Management

In Gujarat, a Governing Body of State Health Society mechanism has been established for externally aided programs. For RCH II, Governing body of State health society receives fund from Government of India. The Program Director is responsible for disbursement of funds and its proper accounting with the support of Operations Manager and develop tailor made accounting software suitable for the state and district level for disbursement of funds and its monitoring.

4. Quality Assurance

Continuous monotoring of quality of services provided is required to assess service to clients and supplies utilized to ensure that the public health system provides the best possible service. Quality Assurance is considered as an important management approach to minimize variations and standardize managerial and clinical practices and procedures to improve the health outcomes. This is institutionalized by establishing quality assurance teams at State and district level to ensure quality and effective management of services and designing and implementing quality interventions to enhance user's satisfaction with the service.

Its functions are to review centers (public/private) providing family planning services in the state and district and ensure implementation of national standards; review & report conception due to failure of sterilization in the state and district; review and report complications due to IUD/Oral pills; review quality assurance activities at state and district level; suggest measures to improve quality of family planning services and;

collect and publish six monthly reports of the number of persons sterilized as well as the number of deaths or complications arising out of sterilization.

District level committee periodically visits the facilities and meets every month to discuss the findings and feedback is given to district health authorities and state level committee. Need based improvement is undertaken to improve the quality of programs. This will be an ongoing process covering all the RCH components and facilities.

5. Behaviour Change Communication (BCC)

Goals set under various national health programs and RCH II can be achieved by increasing the demand for services and improving the coverage and utilization of services. On one side, community requires awareness of various health services and their benefits. On other side, service providers require coping up with demand for health care. Communication strategy will be formulated keeping in mind these two objectives.

Behavior change communication plan is combination of tools focusing on the individuals to ultimately bring about a societal change involving the NGOs and private sector with appropriate communication message.

6. NGOs involvement in RCH II

Gujarat is well known for its voluntary movements and cooperative sector movements. A significant number of NGOs are actively working in the field of health care and development. In Gujarat, NGO partnership is envisaged for running PHC, programs like pulse polio, training, and involvement in HIV/AIDS and ICDS programs. Other specific activities identified for NGO involvement are the issues of female foeticide and declining sex ratio, community mobilization, emergency transport and ambulance services, adolescent health, monitoring public health system and initiatives for empowerment of women and community.

7. Convergence and Coordination

Convergence is required for complementary working of departments or agencies to achieve common goals and objectives under NRHM. In order to achieve synergy, NRHM plan seeks convergence in program planning, resources, training, IEC activities, activity time line and monitoring. Coordination mechanism is required with Women and Child Development, Urban development, Rural Development, Social Justice & Empowerment, Education, Panchayat and Youth Affairs departments.

Institutional mechanism for convergence at State level comprises of the Governing Body of State Health Society which has Chief Secretary as Chairperson, Principal Secretary, Health & Family Welfare as Vice chairperson, Commissioner of

Health, Principal Secretaries of Education, Rural Development, Urban Development and Women & Child Development as members and RCH Director as Member Secretary. District Level Coordination and Convergence is under District Health Society in which District Collector is Chairperson with members from various departments and NGO.

8. District Implementation plans

The district specific implementation plans are prepared based on local needs. In addition to this, community specific interventions with NGOs, CBOs and community mobilization for demand generation will be thrust areas of district plans. Equity and gender issues will be addressed looking into the local situation. Health Workers will be trained to monitor the unmet need for family planning and other services. After two years, the objectives of all districts will be revisited based on information collected through community needs assessment approach.

9. Thrust Activities under NRHM/RCH II

i. Comprehensive malnutrition Scheme[67]

Realizing the need to focus on malnutrition in the state, a detailed plan has been prepared and sanctioned under NRHM. With a life cycle approach to the problem, the plan aims at improvement in quality of food intake; universal coverage of pregnant, lactating mothers, children up to 14 years through Mamta Abhiyan, ICDS and MDM; iron supplementation for adolescent girls; making financial provision as per the actual requirement; special component for tribal areas; awareness generation and sensitization for developing healthy food habits; training and sensitization of ICDS and MDM cooks and helpers and; replacement of fire wood with solar cooker.

ii. Strengthening Outreach Services (Mamta Abhiyan):

Mamta Abhiyan[68] is an approach to strengthen the comprehensive outreach of RCH Services. It aims at preventive, promotive and curative services through convergence with ICDS and participation of community. Four components of Mamta Abhiyan are Mamta Divas (Health and Nutrition Day), Mamta Mulakat (Post natal care visit), Mamta Sandarbh (Referral and Services) and Mamta Nondh (Record and Reports)

Mamta divas is a fixed day and fixed site preventive/promotive health care service for mother and children of the village conducted every month. All pregnant women,

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[67] A Leadership agenda for Action: The Coalition for Sustainable Nutritional Security in India, September 19, 2008.

[68] Yoong, Joanne- Does Decentralization Hurt Childhood Immunization?- Department of Economics, Stanford University, October 20, 2007.

breast feeding women and under-five children are beneficiaries of this session. Services provided include health check up, immunization, primary treatment, referral and counselling services. These services are provided by a team of health workers, ICDS workers, Kishori Shakti Yojna girls, Mahila Swasthya Sangh representative and NGO representatives.

. Mamta mulakat is a home visit on 1st, 3rd and 7th day after delivery for preventive/ promotive health care and timely referral of sick mother and child to prevent neonatal and maternal mortality in this critical phase. Mamta Sandarbh is the development and mapping of fixed day and fixed site referral services for ANC, PNC, ENBC and RTI – STI. Mamta Nondh services are important to monitor coverage and quality of RCH services. A comprehensive individual recording of health status and health services with antenatal registration tracked upto the age of 3 years of the child. All health monitoring and health service records are maintained on Mamta card given to mother.

iii. Services to difficult areas and marginalized communities

Several interventions which include initiatives under RCH have been taken up to address the equity issues in health. Initiatives like Chiranjeevi Yojna in partnership with private providers aims at access of indigent sections to quality maternity services by removing access barriers like finance, distance and time for proper health care. To reach out the marginalized communities living in far-flung areas, the State has 108 Mobile Health Units (MHU) that are currently functioning in tribal, peri-urban, difficult areas and earthquake affected areas.

iv. Public Private Partnerships

To increase access to safe delivery services, the state has initiated "Chiranjeevi Yojna" wherein all BPL families will be covered is an example of public private partnership initiative. Under this scheme, an expectant mother from BPL family will be given entitlement coupon for deliveries. She can use it to avail health care from an identified private provider/ facility for delivery. The coupon will cover all delivery costs as part of a package. The scheme has been inbuilt into the RCH-II phase and State will bridge the funding gap to cover entire state.

The above RCH objectives envisage a result oriented approach under the NRHM by improvement in management of the program at all levels. One striking feature of the program is its focus on management of resources to attain these objectives. In Gujarat, the program is dovetailed with the existing management structures and programs from State to village level. The approach is to cover entire spectrum of issues involved in running the

program: institutional set up; planning; man power; financial power; infrastructure enhancement; training etc.

10. Reporting System

The program lays special emphasis on timely submission of reports. Software and MIS tools have been developed for use upto PHC level where they will ensure uniformity and regularity in data collection and reporting.

Chapter VI

6. Research Design and Methodology

As the purpose of the research is to study the public health delivery system, the focus of the study is field, at the level of health centres. District is the unit for implementation of NRHM under the District Health Mission. As district is the major administrative unit, the effectiveness of functioning of public health delivery system can be measured by evaluation of performance of health care outcomes at district level.

At the cutting edge level, it can be observed that the focal point for actual delivery are villages where services are provided from sub-centres and PHCs. CHCs are the first referral hospitals which provide specialised health care with specialists like physician, obstetrician & Gynaecologist and paediatricians. But the most crucial and paramount public health care services are provided by female and multi-purpose health workers at the sub-centres and PHC under the supervision of Medical Officer at PHCs. Thus the availability, quality, efficiency and effectiveness of management of health centres in terms of infrastructure, manpower and resources therein are critical for the performance of the public health delivery system.

While the above factors are important for supply of health care services, the demand for these services is derived from the people in the area, mainly women and children in case of RCH program. Beneficiaries who require preventive and curative health care are the potential consumers of the services. Health service is also available from other sources like qualified private practitioners, traditional/indigenous medical practitioners, nurses and others. A beneficiary for public health care would evaluate various factors like availability, access, quality, cost, experience, references and facilities in choosing the health care provider. The aim of the rural health mission is to improve these parameters in health centres to enhance the demand for services from the people in the area. Even in situations where health centre services do not have any competition in providing quality health care, deficiency and defect in these factors would restrict the demand. This latent demand which remains untapped is a key contributor to low level outcomes.

6.1 Two Stage Research Study

Considering these aspects, methodology for research requires two stage study of public health delivery. In the first stage, performance of all the districts is evaluated for various health care outcomes in key general health and RCH indicators. The aim is to

evaluate the performance of districts before and after the introduction of NRHM and compare the performances. Based on actual status of health indicators and improvement during the period, the districts are grouped to three categories. A district from each group is selected on random basis for second stage of research. The steps involved in the first stage are:

6.1.1 First Stage Research Study

1. Selection of key RCH indicators to evaluate maternal, child and family planning outcomes in these districts. The indicators chosen were institutional delivery, full ANC check-ups, full immunization of children, prevalence of contraceptive use, total fertility rate and sex-ratio

2. Compare the performance of indicators in these districts before and after the implementation of NRHM program. Since NRHM was simultaneously launched in all districts this comparison is free of any time bias.

3. The source of data is another key factor. For first stage study, main source of data are decadal census data and district level health and facilities survey. For the purpose of this study, data was obtained from DLHS-2 in 2002-04, DLHS-3 in 2007-08 and Census reports of 2001 and 2011. It may be noted that the DLHS-2 was conducted before the launch of NRHM and DLHS-3 was conducted 3 to 4 after the launch of NRHM. Hence, this data is useful in estimating and comparing the performance of the districts.

4. Actual performance for each district was estimated by measuring the relative performance with respect to the overall performance in Gujarat, taking State's performance as benchmark. Districts above zero have performed better than state average and those below zero have performed below state average.

5. With this data, percentage improvement (or otherwise) for each of the selected parameter is estimated. Any improvement in positive parameter and any decline in negative parameter are taken as positive and vice versa. An equal weighted average of the percentages is estimated to ascertain the overall improvement in the district performance.

6. In the next step, districts were ranked for performance before the launch, after the launch and improvement during the program. Based on these ranks, all the districts were classified into three groups: above average, average and sub-average performers.

7. One district from each category was selected for field survey on a random basis. Selected districts were Junagadh, Ahmedabad and Bharuch.

6.1.2 Second Stage Research Study

1. After the selection of three districts in the first stage, detailed field study was undertaken in these selected districts. The scope of the second stage is to study supply and demand of public health care at the level of PHC and villages.

2. Supply side management is studied through survey of health workers at the PHC and sub-centres. Detailed field survey was undertaken to ascertain factors which affect the supply of public health delivery: planning; organization; infrastructure and facilties; activities and targets; human resource issues; time management; finance and monitoring & review.

3. Demand side management was studied by way of survey of beneficiaries of health care services in health centres. Detailed survey was undertaken to ascertain factors like: awareness; health care seeking behaviour; acess to health care; infrastructure and facilities; availability of services; affordability; quality; referral services; documentation & record keeping; willingness to pay; and possibility of repeat services.

6.2 Survey Objectives

Field survey has two components: survey of health workers to ascertain supply and provision of public health care and survey of beneficiaries to ascertain the demand and satisfaction with the delivery of services.

6.2.1 Survey of Health Workers

Health workers who constitute the first level contact for health care provide basic public health care to various beneficiaries. Most of the initiatives under RCH II and NRHM converge at the level of health workers who have a decisive role in the success of the program. Purpose of survey of health workers was to assess and analyze various factors which make management and delivery of public health care effective. Survey aims to identify all the work areas of health workers and key work areas from their point of view. Further, the survey assesses the process of preparation of health plan and main stakeholders involved in the exercise. Since NRHM aims at participation of stakeholders in public health service, the extent and quality of involvement of local bodies like gram sabha and gram panchayat, anganwadi workers, ASHA etc., is also assessed.

Preventive health care being a key component of RCH, the efforts made to improve the awareness, visit to target groups and meeting with community groups is

assessed in the survey. Determination of targets, performance of day to day activities and mode of contact of beneficiaries is also assessed. Availability of infrastructure like connectivity and transport to health centre and villages in their service area, facilities like water, toilet and sitting arrangements were also evaluated.

Human resource management is the most critical factor in quality of health care at health centres. Interpersonal relationship, involvement in decision making, motivation, performance evaluation and opportunities for career growth were assessed in the survey. Time management is measured in terms of number of active days spent on different activities like field visit, health centre activity, training/workshops, meetings and emergency work. Monitoring and review by superiors, training, and delegation of financial powers were also assessed in the survey.

6.2.2 Survey of Beneficiaries/ Patients

Public health services are made available to persons from all sections of society by Government. Thus the market for these services is entire population in domain area of each health centre. However, the actual market depends on socio-economic and demographic profile of area which varies from one centre to the other. Various type of health service providers include practitioners of traditional system of medicine like Ayurvedic, Unani and Homeopathy, health healers, nurses and qualified private practitioners apart from health centre facilities. The health seeking behaviour of people depends on awareness, availability, accessibility and affordability of these services

Demographic and socio-economic factors like age, family size, literacy, income, poverty, occupation, community and gender of beneficiaries affect the awareness of health care programs and schemes. Availability is a key factor which limits the choice of services to beneficiary. It refers to the availability health service providers in the market and of health care personnel like doctors & health workers to provide health care. Accessibility means physical infrastructure and facilities like road connectivity to health centres, transport, timings and distance. Affordability is a measure of cost of health care, both direct and indirect. Though cost of health care itself may be absent, there are other elements of cost like transport and loss of wages. Cost is incurred also due to non-availability of drugs in health centre and absence of laboratory facilities. Thus, demand for health care is a function of many qualitative and quantitative parameters evaluated consciously and sub-consciously by beneficiaries.

Survey of beneficiaries was carried out among beneficiaries of health care services, both preventive and curative. The target group was persons who had availed

maternal and child health services in recent past, preferably in the last two years. The purpose was to ascertain from their experience, the impact of initiative under RCH II and NRHM.

Survey of Beneficiaries: Framework

The purpose of beneficiary survey was to assess the management of public health delivery at health centres from a demand side perspective. With this objective, survey was designed to capture the socio-economic parameters of respondents. Awareness and participation in awareness programs were also assessed. Survey also ascertained health care seeking behaviour of beneficiaries in recent past along with their evaluation of quality of services at the health centre. Availability of infrastructure like transport and road, and facilities in the health centre was also assessed from beneficiaries. Extent of availability of supplies like drugs and allied services like laboratory testing was also surveyed.

Survey also included the extent of ease or difficulty in availing Government financial assistance, spending on private health care, willingness to pay for better services, referral services, record keeping and repeat visits to health centres in future.

6.3 Questionnaire Design[69]

Separate questionnaires were prepared for Health Workers and Beneficiaries/patients for field survey and both were administered in Gujarati. Test surveys were undertaken using draft questionnaires among health workers and beneficiaries and based on the feedback, final questionnaires were prepared.

In case of health workers, nominal data was obtained for ascertaining the category of health worker, availability of health plan, targeted functions, point of contact of beneficiaries, mode of travel and awareness generation methods. Cardinal data was obtained to ascertain time spent of various activities in a year. Ordinal responses were obtained to ascertain the level of satisfaction, involvement, quality and difficulty in their work. This included ascertaining involvement level of stakeholders in preparation of health plan, difficulty in achieving targets, quality of facilities at health centres, level of motivation, interpersonal relationship, satisfaction with pay and allowances, opportunity for career growth, effective use of time, ability to exercise financial powers, adequacy and quality of training, extent of monitoring and review. Continuous response scales were used for ascertaining duration of travel time. Likert scale type questions were indirectly

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[69] Siniscalco, Maria Teresa and Nadia Auriat: Questionnaire Design, UNESCO International Institute for Educational Planning, September, 2005.

used to assess strength of opinion in some areas. Ranking scale was used to ascertain key health functions.

In beneficiary survey, cardinal data was obtained for family size and age. Other demographic and socio-economic parameters like gender, poverty, caste and occupation were obtained through nominal questions where as monthly income and literacy were obtained through continuous response scale. Responses to issues like type of awareness programs attended, type of private medical practitioners visited, identifying influencers and decision makers for health care, availability of doctors and health workers in health centres, availing financial assistance from Government, availing referral services and willingness to pay for better service were obtained using nominal questions. For ascertaining satisfaction, quality, connectivity, utility of services and facilities cardinal questions were administered. These include ascertaining quality of services in health centre, usefulness of awareness program, connectivity to health centre, difficulty in availing financial assistance from Government, level of facilities in health centre and quality of services. Continuous scale assessment was made to ascertain annual expenditure on health care and waiting time in health centre.

6.4 Sampling Strategy & Data Collection

1. Sampling Method

Survey of health workers was undertaken in three districts of Ahmedabad, Bharuch and Junagadh. The sample was selected randomly among all the health workers of the district.

Survey of beneficiaries was also carried out in same districts of Ahmedabad, Bharuch and Junagadh. Respondents were selected from those who had availed health care service in the health centres in the last 2 years on a random basis. Thus, a stratified random sampling method was adopted in case of beneficiaries/patients.

2. Sample Size

Sample size was estimated based on the population size of the health workers in these districts for 5% confidence level of estimating statistical variates. In case of health workers, the sample size was 50, 67 and 55 in Ahmedabad, Bharuch and Junagadh districts, of whom 35, 47 and 39 were FHW constituting 70% of the respondents and the rest 30% were MPHW.

Sample size in case of beneficiaries/patients was estimated at 95, 91 and 94 respectively with a total of 280 for all districts. Beneficiaries were selected on a random

basis in which female were 70, 63 and 59, constituting 69% of total for all districts, 74% in Ahmedabad, 69% in Bharuch and 63% in Junagadh.

3. Data Collection

Data was obtained from both the surveys by administering questionnaires in Gujarati. Female and multipurpose health workers were contacted for survey on a random basis in these districts by visiting the health centres and headquarters. Beneficiaries were also contacted based on the list of beneficiaries in PHC and sub-centres on a random basis. In cases where there was incomplete information, the persons next in the list were selected for survey.

6.5 Data Analysis

The questionnaires were designed to gather the response of health workers and beneficiaries to obtain their experience, feedback and assessment on different issues of management of health delivery.

6.5.1 Verification; Classification and Tabulation

The collected data was verified for completeness and consistency. In case of any defect, next person in the list was surveyed to complete the sample size. Then the data was entered in MS-Excel spreadsheets with proper codification. For example, FHW were given a code as "1" and MPHW as "2". Similarly ordinal data like satisfaction, involvement, difficulty and quality which were given in scales of 1 to 5 were also given numerical index during data entry. Similar exercise was done for continuous scale data. For cardinal data like age and days, actual numbers were used for analysis.

In case of health workers, tables were generated with district and category of health workers (FHW & MPHW). The broad categories were health functions, planning, infrastructure, facilities, human resources management, monitoring and time management. In case of beneficiaries, tables were generated demographic and socio-economic profile, awareness programs, infrastructure & facilities, decision making behaviour, purpose of visit to health centre, quality of service, financial burden, documentation and repeat visit to health centre based on districts and gender. Tables were also generated for each demographic and socio-economic factor: age, family size, occupation, income, poverty, caste and education of beneficiaries/patients against key behavioural variables, attributes and opinions. These were attendance in awareness programs, health care seeking behaviour like decision makers and influencers, purpose of

visit to health centre, visit to private health practitioners, out-of-pocket expenditure on health and willingness to pay for better services.

Tables were generated with numeric as well as percentage distribution for different categories. Thus, the tables could be used for further statistical analysis and ascertaining key relationships to make meaningful interpretations.

6.5.2 χ^2 - Test of Hypothesis

The strength of association between various factors and attributes, behaviour and opinions were ascertained by χ^2 - **t**est of hypothesis. This was carried out for various factors and parameters across the districts[70].

Pearson's chi-squared was used for comparison based on tests of goodness of fit and tests of independence. Test of goodness of fit establishes whether or not an observed frequency distribution differs from a theoretical distribution. A test of independence assesses whether paired observations on two variables are independent of each other. For estimating the chi-squared test statistic- χ^2, degrees of freedom- d and probability- p, version 4.0 of PEPI software was employed. Null hypothesis was defined as absence of significant difference between the districts in the chosen parameters. This was evaluated at 95% confidence level based on which the null hypothesis was accepted or rejected (rejected for p<=0.05).

In case of beneficiaries similar tables were generated from the data collected from the survey. Here again, test of hypothesis was carried out by applying chi-square test[71]. In addition, statistical tables were generated for different socio-economic parameters and key factors concerning health care for beneficiaries. Subsequently, test of hypothesis was applied in these cases too.

χ^2 - test statistic were estimated to reject or accept the null hypothesis. Based on this, the tabulated data was further analyzed to make interpretations and derive conclusions[72] for different districts, category of health workers and category of beneficiaries on basis of which recommendations are proposed.

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[70] Stockburger, David W- Introductory Statistics - Concepts, Models and Applications, Missouri State University, Revised Version, 1998
[71] DiMaria, Rose Ann- Understanding and Interpreting the Chi-square Statistic (χ^2): WVU School of Nursing, Charleston Division
[72] McCreery, Charles: The Chi-Square Test- A test of association between categorical variables, Oxford Forum, Psychological Paper No. 2007-1.

6.5.3 Multiple Linear Regression (MLR)

Key factors which affect the demand and supply of health care in health centres are influenced by demographic and socio-economic parameters and health delivery factors. During the field survey many of these factors were ascertained from the health workers and beneficiaries. Since there are many independent variables affecting the dependent variable(s), MLR is a very useful statistical model which can explain the strength relationship between dependent and independent variables and significance of each independent variable. The regression equation generated from MLR[73] has predictive value to the extent these factors affect the dependent variable and also gives the directional impact based on the sign of the coefficient.

The key dependent variables identified in case of health workers were Target Achievement and Motivation Level. In case of beneficiaries it was Quality of Service availed in the health centre and Repeat visit to the health centre were identified as dependent variables. MLR was performed with the Statistical Package for Social Sciences[74] (SPSS) version 19.

For each of the dependent variable, SPSS was run for all the possible independent factors obtained from the survey in the first iteration. In subsequent iterations, independent variables which have no significant impact or correlation were eliminated. Eventually, the process identifies key factors significantly affecting the dependent variable. Thus, this process tends to reduce the multi-collinearity by reducing the number of variables at each stage.

Null hypothesis was that each independent variable has no significant impact at 95% confidence level. The key test statistics applied for analysing and interpreting the output are: sigma (if $p <= 0.05$, then the hypothesis is rejected); R^2, the coefficient of determination explains the percentage of variation in dependent variables due to the selected independent variables and; Beta β, the coefficient of the independent variable. The magnitude and direction of β indicates the nature of influence on dependent variable.

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[73] Trammer, Mark and Mark Eliot: Multiple Linear Regression, Cathie Marsh Centre of Census ans Survey Research.
[74] Field, A: Discovering Statistics Using SPSS (Introducing Statistical Methods Second Edition), Sage Publications, 2005.

Chapter VII

7. Performance Assessment of Districts

Performance of districts was compared before and after the implemetation of NRHM in 2005 in Gujarat. Since district level data is required for this purpose, data from DLHS survey undertaken in 2002-04 and 2007-08 is taken into consideration for analysis. Performance data for total fertility rate, full ANC coverage, institutional delivery, full vaccination, prevalence of contraceptive use and sex ratio were obtained from DLHS and census reports for this purpose.

Three categories of performance evalutaion were undertaken for each district: firstly, performance in 2002-04 which was before introduction of NRHM; secondly, performance in 2007-08 which was after the launch of NRHM and; finally, improvement/change during the period. Performance of districts in these indicators was first evaluated from this data. Mean and standard devation of performance for each district across the indicators was estimated to rank the performance before and after NRHM and percentage change after launch of NRHM.

7.1 Performance of Districts in Health Indicators (Table 7.1, 7.2 & 7.3)

1. Total Fertility Rate

In 2002-04, Navasri, Surat and Ahmedabad had highest performance while Banaskantha, Bhavnagar and Surendranagar were at the bottom. In 2007-08, performance in Navsari, Surat and Valsad was on top, and Banaskantha, Bhavnagar and Surendranagar at bottom. Improvement was highest in Banaskantha, Bhavnagar and Junagadh and least in Valsad, Dahod and Sabarkantha.

2. ANC Full

In 2002-04, perofrmance was highest in Vadodara, Anand and Navsari and least in Banaskantha, Dangs and Kutch. Similarly in 2007-08, Rajkot, Junagadh and Anand had best performance whereas Sabarkantha, Dangs and Surendranagar were at the bottom. Iprovement was highes in Junagadh, Amreli and Rajkot and lowesst in Sabarkantha, Dangs and Narmada.

3. Institutional Delivery

In 2002-04, performance was highest in Mehasana, Gandhinagar and Navsari and least in Narmada, Dangs and Junagadh. In 2007-08, the top performers were Mehasana, Navsari and Ahmedabad while Dangs, Narmada and Bharuch were at the bottom.

Improvement in the indicator was the highest in Junagadh, Kutch and Jamnagar and lowest in Dangs, Vadodara and Sabarkantha.

Table 7.1				Public Health Performance Comparison of Districts -I							
Indicator		**Total Fertility Rate**					**ANC Full**				
District		**Performance**		**Change / Improvement**	**Relative Improvement**		**Performance**		**Change/ Improvement**	**Relative Improvement**	
		2002-04	**2007-08**		**2002-04**	**2007-08**	**2002-04**	**2007-08**		**2002-04**	**2007-08**
1	Ahmedabad	3.2	2.4	25%	11%	8%	28.3	25.2	-11%	10%	27%
2	Amreli	4.1	2.9	29%	-14%	-12%	19.3	25.7	33%	-25%	29%
3	Anand	3.1	2.5	19%	14%	4%	39.2	37.4	-5%	52%	88%
4	Banaskantha	4.5	2.8	38%	36%	-8%	8.4	10.6	26%	-67%	-47%
5	Bharuch	3.3	2.4	27%	8%	8%	31.9	22.7	-29%	24%	14%
6	Bhavnagar	4.4	2.8	36%	-22%	-8%	29	16.7	-42%	12%	-16%
7	Dahod	4.2	3.5	17%	-17%	-35%	12.8	13.1	2%	-50%	-34%
8	Dang	4	2.8	30%	-11%	-8%	16.1	2.3	-86%	-38%	-88%
9	Gandhinagar	3.4	2.4	29%	6%	8%	22	17.7	-20%	-15%	-11%
10	Jamnagar	3.7	2.5	32%	-3%	4%	30.4	20.3	-33%	18%	2%
11	Junagadh	4	2.6	35%	-11%	0%	19.9	38.3	92%	-23%	92%
12	Kheda	3.3	2.3	30%	8%	12%	36.8	28	-24%	43%	41%
13	Kutch	3.7	3	19%	-3%	-15%	16	16	0%	-38%	-20%
14	Mehsana	3.5	2.5	29%	3%	4%	27.6	15.9	-42%	7%	-20%
15	Narmada	3.3	2.6	21%	8%	0%	35.8	16.3	-54%	39%	-18%
16	Navsari	2.9	2.1	28%	19%	19%	54.2	28.2	-48%	110%	42%
17	Panchmahal	3.7	2.7	27%	-3%	-4%	22.7	24.2	7%	-12%	22%
18	Patan	4	2.9	28%	-11%	-12%	26.6	23.7	-11%	3%	19%
19	Porbandar	3.9	2.6	33%	-8%	0%	34.9	31.2	-11%	35%	57%
20	Rajkot	3.4	2.5	26%	6%	4%	28	39.7	42%	9%	99%
21	Sabarkantha	3.3	2.8	15%	8%	-8%	23	7.4	-68%	-11%	-63%
22	Surat	3.1	2.2	29%	14%	15%	30.4	25.1	-17%	18%	26%
23	Surendranagar	4.2	2.8	33%	-17%	-8%	8.8	10.1	15%	-66%	-49%
24	Vadodara	3.2	2.4	25%	11%	8%	46.5	20.4	-56%	80%	3%
25	Valsad	2.8	2.3	18%	22%	12%	34.8	27.7	-20%	35%	39%
	Gujarat	**3.6**	**2.6**	**28%**	**0%**	**0%**	**25.8**	**19.9**	**-23%**	**0%**	**0%**

Table 7.2		Public Health Performance Comparison of Districts -II									
Indicator		Institutional Delivery					Full Vaccination				
		Performance		Change /Improvement	Relative Improvement		Performance		Change /Improvement	Relative Improvement	
District		2002-04	2007-08		2002-04	2007-08	2002-04	2007-08		2002-04	2007-08
1	Ahmedabad	71.7	80.2	12%	37%	42%	65.8	53.7	-18%	22%	-2%
2	Amreli	40.2	50.9	27%	-23%	-10%	62.6	50.5	-19%	16%	-8%
3	Anand	69.2	78.4	13%	33%	39%	63.8	68.8	8%	18%	25%
4	Banaskantha	53.7	61.7	15%	3%	9%	29.2	38.9	33%	-46%	-29%
5	Bharuch	38.7	47.9	24%	-26%	-15%	83.4	56.8	-32%	54%	3%
6	Bhavnagar	43.6	58.4	34%	-16%	4%	51.4	57.4	12%	-5%	5%
7	Dahod	46.5	60.4	30%	-11%	7%	19.2	32.9	71%	-64%	-40%
8	Dang	10.7	9.4	-12%	-80%	-83%	31.9	39.3	23%	-41%	-28%
9	Gandhinagar	73.6	77.1	5%	41%	37%	48.1	65.2	36%	-11%	19%
10	Jamnagar	49.7	69.3	39%	-5%	23%	57	56.4	-1%	6%	3%
11	Junagadh	37.1	56.3	52%	-29%	0%	61.1	66.7	9%	13%	21%
12	Kheda	53.4	69	29%	2%	22%	62.1	54.1	-13%	15%	-1%
13	Kutch	40.3	57.2	42%	-23%	1%	54	49.2	-9%	0%	-10%
14	Mehsana	74.6	84.3	13%	43%	49%	54.3	72	33%	1%	31%
15	Narmada	26.9	28.4	6%	-48%	-50%	47.9	64.3	34%	-11%	17%
16	Navsari	72.4	80.9	12%	39%	43%	91.7	74	-19%	70%	35%
17	Panchmahal	40.2	52.4	30%	-23%	-7%	36.3	46.1	27%	-33%	-16%
18	Patan	53	61.7	16%	2%	9%	53.6	70.2	31%	-1%	28%
19	Porbandar	50.4	68.1	35%	-3%	21%	72.5	76.7	6%	34%	40%
20	Rajkot	55.7	68.3	23%	7%	21%	70.6	62.3	-12%	31%	13%
21	Sabarkantha	62.6	61.4	-2%	20%	9%	49.1	47.6	-3%	-9%	-13%
22	Surat	56.5	72.3	28%	8%	28%	51.8	88.2	70%	-4%	61%
23	Surendranagar	40.7	49.1	21%	-22%	-13%	50.5	49	-3%	-6%	-11%
24	Vadodara	55.8	54.4	-3%	7%	-4%	69.6	59.6	-14%	29%	9%
25	Valsad	57.2	68.4	20%	10%	21%	64.5	51.8	-20%	19%	-6%
	Gujarat	**52.2**	**56.4**	**8%**	**0%**	**0%**	**54**	**54.9**	**2%**	**0%**	**0%**

Table 7.3		Public Health Performance Comparison of Districts -III									
Indicator		**Contraceptive Prevalence**					**Sex Ratio**				
District		Performance		Change /Improvement	Relative Improvement		Performance		Change /Improvement	Relative Improvement	
		2002-04	2007-08		2002-04	2007-08	2001	2011		2001	2011
1	Ahmedabad	56.4	63.2	12%	-5%	0%	892	903	1%	-3%	-2%
2	Amreli	67.6	76.8	14%	14%	21%	987	964	-2%	7%	5%
3	Anand	61.1	61.9	1%	3%	-2%	910	921	1%	-1%	0%
4	Banaskantha	41.2	54.5	32%	-30%	-14%	930	936	1%	1%	2%
5	Bharuch	62.7	70.3	12%	6%	11%	921	924	0%	0%	1%
6	Bhavnagar	67	64.2	-4%	13%	1%	937	931	-1%	2%	1%
7	Dahod	43.7	44.3	1%	-26%	-30%	985	986	0%	7%	7%
8	Dang	45.8	53.2	16%	-23%	-16%	987	1007	2%	7%	10%
9	Gandhinagar	56.9	65.2	15%	-4%	3%	913	920	1%	-1%	0%
10	Jamnagar	64.5	69.3	7%	9%	9%	941	938	0%	2%	2%
11	Junagadh	63	64.8	3%	6%	2%	955	952	0%	4%	4%
12	Kheda	65.2	69.3	6%	10%	9%	923	937	1%	0%	2%
13	Kutch	47.4	55.1	16%	-20%	-13%	942	907	-4%	2%	-1%
14	Mehsana	58.3	64	10%	-2%	1%	927	925	0%	1%	1%
15	Narmada	67.4	63.8	-5%	14%	1%	949	960	1%	3%	5%
16	Navsari	68.7	66.2	-4%	16%	5%	955	961	1%	4%	5%
17	Panchmahal	55.3	64.8	17%	-7%	2%	938	945	1%	2%	3%
18	Patan	54.6	67.1	23%	-8%	6%	932	935	0%	1%	2%
19	Porbandar	62.2	62.2	0%	5%	-2%	946	947	0%	3%	3%
20	Rajkot	66.9	73.4	10%	13%	16%	930	924	-1%	1%	1%
21	Sabarkantha	58.7	56.3	-4%	-1%	-11%	947	950	0%	3%	4%
22	Surat	69.8	68.9	-1%	18%	9%	810	788	-3%	-12%	-14%
23	Surendranagar	56.2	62.1	10%	-5%	-2%	924	929	1%	0%	1%
24	Vadodara	61.5	68.9	12%	4%	9%	919	934	2%	0%	2%
25	Valsad	55.2	64.3	16%	-7%	2%	920	926	1%	0%	1%
	Gujarat	**59.2**	**63.3**	**7%**	**0%**	**0%**	**920**	**918**	**0%**	**0%**	**0%**

4. Full Vaccination

Performance in 2002-04 was highest Navsari, Bharuch and Porbandar and least in Dahod, Banaskantha and Dangs. In 2007-08, best performance was in Surat, Porbandar and Navsari while Banaskanta, Dahod and Dangs were at bottom. Improvement was highest in Dahod, Surat and Narmada and lowest in Bharuch, Valsad and Amreli.

5. Contraceptive Prevalence

In 2002-04, highest performance was in Navsari, Surat and Amreli and least in Banaskantha, Dahod and Dangs. Comparitive situation in 2007-08 shoes Rajkot, Amreli

and Bharuch were top performers and Dahod, Banaskanta and Dangs were at bottom. Improvement was highest in Banaskanta, Patan and Panchmahal and lowest in Narmada, Bhavnagar and Navsari.

Graph 7.1: Health Indicators - Performance of Districts
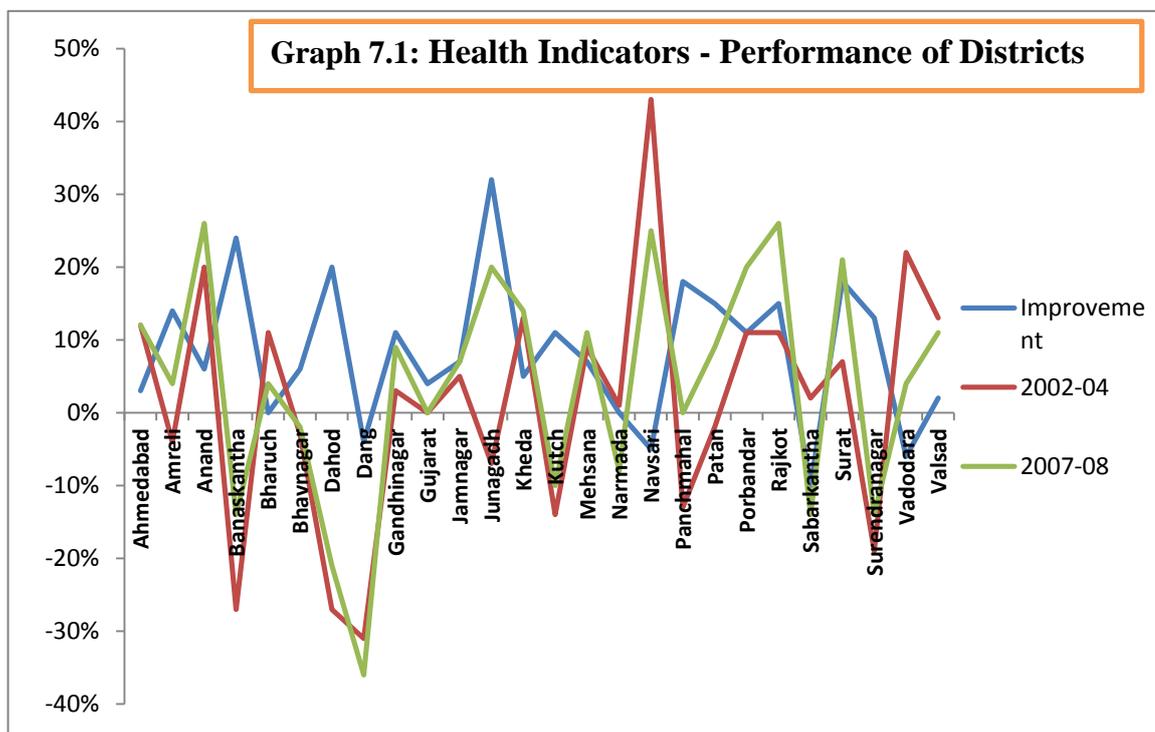
6. Sex Ratio

Performance in 2001 shows that Amreli, Dahod and Dangs were on top while Ahmedabad, Surat and Anand were at the bottom. In 2011, performance was highest in Dahod, Dangs and Amreli and least in Surat, Ahmedabad and Kutch. Improvement was highest in Dangs, Vadodara and Ahmedabad and lowest in Kutch, Amreli and Surat.

7. Overall Performance

In terms of overall improvement, Junagadh district (31.8%) has done better than other districts in these indiactors. In actual performance, Navsari (43%) had done better than other districts before NRHM and Rajkot (25.8%) after NRHM. It can be noted that disticts like Banaskantha, Dahod, Surendranagar and Panchmahal were at the bottom of performance in 2007-08, but were on top of the table in terms of improvement These are tribal and backward districts of the State. However, Sabarkantha and Dang has low level performance and have shown negligible improvement. Both are predominantly tribal districts and require special attention.

For the purpose of field survey Junagadh, Ahmedabad and Bharuch districts were selected. Junagadh had sub-average performance before and above average performance

after NRHM and had highest improvement among all the disitrcts. Performance in Ahmedabad was above average before (12%) and after (12.1%) NRHM with improvement (3.5%) which is near the average for State. Bharuch had above average (11.1%) performance before and below average (3.6%) performance after NRHM and low improvement (0.5%). These districts are located in distinct geographical regions of the state with Ahmedabad in north-central, Junagadh in Saurashtra and Bharuch in South Gujarat thereby representing different geogrpahical regions and social groups which can be observed in the social composition of beneficiaries in field survey (Table 7.4).

Table 7.4				Ranking of Performance of Districts					
	Improvement in performance			Performance in 2002-04			Performance in 2007-08		
Rank	District	Average	Std. Dev	District	Average	Std. Dev	District	Average	Std. Dev
1	Junagadh	32%	36%	Navsari	43%	40%	Rajkot	26%	37%
2	Banaskantha	24%	14%	Vadodara	22%	30%	Anand	26%	35%
3	Dahod	20%	28%	Anand	20%	20%	Navsari	25%	18%
4	Panchmahal	18%	12%	Valsad	13%	15%	Surat	21%	25%
5	Surat	18%	32%	Kheda	13%	15%	Junagadh	20%	36%
6	Rajkot	15%	19%	Ahmedabad	12%	16%	Porbandar	20%	24%
7	Patan	15%	17%	Bharuch	11%	27%	Kheda	14%	15%
8	Amreli	14%	21%	Porbandar	11%	19%	Ahmedabad	12%	18%
9	Surendranagar	13%	13%	Rajkot	11%	10%	Valsad	11%	17%
10	Gandhinagar	11%	20%	Mehsana	9%	17%	Mehsana	11%	25%
11	Kutch	11%	19%	Surat	7%	12%	Gandhinagar	9%	17%
12	Porbandar	11%	19%	Jamnagar	5%	8%	Patan	9%	14%
13	Jamnagar	7%	26%	Gandhinagar	3%	20%	Jamnagar	7%	8%
14	Mehsana	7%	27%	Sabarkantha	2%	11%	Amreli	4%	17%
15	Anand	6%	9%	Narmada	1%	29%	Vadodara	4%	5%
16	Bhavnagar	6%	29%	Gujarat	0%	0%	Bharuch	4%	10%
17	Kheda	5%	22%	Patan	-2%	6%	Gujarat	0%	0%
18	Gujarat	4%	16%	Bhavnagar	-3%	15%	Panchmahal	0%	13%
19	Ahmedabad	3%	16%	Amreli	-4%	19%	Bhavnagar	-2%	8%
20	Valsad	2%	19%	Junagadh	-7%	17%	Narmada	-8%	24%
21	Bharuch	0%	26%	Panchmahal	-13%	13%	Kutch	-10%	8%
22	Narmada	0%	30%	Kutch	-14%	16%	Surendranagar	-14%	18%
23	Dang	-4%	43%	Surendranagar	-19%	24%	Sabarkantha	-14%	26%
24	Navsari	-5%	26%	Dahod	-27%	26%	Banaskantha	-14%	21%
25	Vadodara	-6%	28%	Banaskantha	-27%	27%	Dahod	-21%	22%
26	Sabarkantha	-10%	29%	Dang	-31%	30%	Dang	-36%	41%

7.2 Evaluation of Selected Districts

7.2.1 Ahmedabad

Ahmedabad district is located in Central Gujarat with Ahmedabad as district headquarters which is the 7th largest urban agglomeration in India and is spread across 10 talukas. Ahmedabad has been a hub for textiles industry. With several educational institutions, it has emerged as a technological and research & development hub. Ahmedabad is a highly urbanized district with a decadal population growth rate much higher than the State average, primarily due to high migration. Literacy rate is significantly higher than the State's average (Table 7.5 & 7.6).

Table 7.5	Districts: Demography							
Parameter	**Gujarat**		**Ahmedabad**		**Bharuch**		**Junagadh**	
	2001	**2011**	**2001**	**2011**	**2001**	**2011**	**2001**	**2011**
Population (Lakhs)	506.71	603.83	58.17	72.08	13.71	15.5	24.48	27.42
Decadal Growth (%)	22.66	19.17	26.79	22.31	19.37	13.14	17.07	12.01
Urban Population (%)	37.36	42.58	80.18		25.72		29.06	
Sex Ratio	920	918	892	903	921	924	95	
Literacy-Overall (%)	69.14	79.31	79.5	86.65	74.41	83.02	67.78	76.88
Literacy-Female (%)	57.8	70.73	70.98	80.29	70.68	84.98	56.43	67.59
Literacy-Male (%)	79.66	87.23	87.4	92.44	82.98	88.8	78.74	85.8
Sch. Caste Pop (%)	7.09		10.67		4.49		9.62	
Sch. Tribes Pop (%)	14.76		1		32.4		0.77	

Source: Socio-Economic Survey of Gujarat

Agriculture[75] is the key economic activity in rural areas with 42% gross irrigated area (Table 5-3). Wheat and rice are the main crops. Canals, tanks and tube wells are the main source of irrigation (Table 7.7, 7.8 & 7.9). As the key industrial and commercial hub of the State, Ahmedabad accounts for 21.5% of factories and 18% workers in the State. There are around 422 medium and large scale industries based in the district, employing 79904 skilled people. There are 23734 small scale industries employing 95591 people (Table 7.10 & 7.11).

The city is well connected by road, rail and air to different parts of the State and Country. The city has the presence of premier educational institutions such as Indian Institute of Management, National Institute of Design etc. There a 10 management institutions, 74 colleges of engineering, medical, science and law, 7 polytechnics and 45 Industrial Training Institutes.

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[75] District Statistical Handbook, Ahmedabad - 2009-10, District Panchayat, Ahmedabad.

Table 7.6	Districts: Geography			
In 2011	Gujarat	Ahmedabad	Bharuch	Junagadh
Area(sq.km)	196030	8086	6527	8846
No. of Districts	26			
No. of Talukas	226	11	8	14
No. of Villages	18066	746	768	1131

Source: Socio-Economic Survey of Gujarat

Healthcare

The district has 43 PHCs, 279 sub centres, 9 CHCs, 18 Government, 8 municipal and 6 Government aided hospitals (Table 5-5). The city has 31 hospitals/dispensaries which includes many reputed private and public hospitals which provide multi-speciality and super-speciality health care. The district has achieved significant improvement in total fertility rate which has declined from 3.2 to 2.4 during NRHM. Institutional delivery has improved from 71.7% to 80.2%, contraceptive prevalence from 56.4% to 63.2% and sex ratio from 892 to 903. Decline in performance can be seen in full ANC coverage from 28.3% to 25.2% and full vaccination from 65.8% to 53.7% (Tables 7.12).

7.2.2 Bharuch

Bharuch[76] (formerly known as Broach) is a district in South Gujarat along the west coast where River Narmada outlets into the Gulf of Khambat. Administratively, the district contains eight talukas of Bharuch, Hansot, Jambusar, Jhagadia, Amod, Ankaleshwar, Valia and Vagra. There are 7 municipal towns and 663 villages in the district.

Table 7.7	Land Use Pattern			
Sq.km in 2004-05	Gujarat	Ahmedabad	Bharuch	Junagadh
Total Land Area	196030	8087	6527	8846
Forest Land	18334	106	245	1759
Barren Land	26075	662	198	98
Non Agriculture Use	11467	670	725	455
Cultivable Waste	19765	263	355	88
Pasture and Grazing	8545	278	163	889
Fallow Land	67124	801	253	136
Net sown area	97469	4968	3308	5377

Source: Socio-Economic Survey of Gujarat

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[76]District Statistical Outlook, Bharuch, 2009-10 - District Panchayat, Bharuch.

The district has low urbanization and during the last decade, the population growth has slowed down compared to previous decade. Agriculture is the mainstay of population with 36.67% gross irrigated area. Canals and tube wells are the main source of irrigation. Main crops are cotton, pulses and sugarcane. Animal husbandry and fisheries employ large section of the population.

Table 7.8	Agriculture			
sq.km in 2004-05	**Gujarat**	**Ahmedabad**	**Bharuch**	**Junagadh**
Net sown area	97469	4968	3308	5377
Area sown more than once	11549	115.94	80	1630
Per capita net sown area (ha)	0.19	0.09	0.24	0.22
Cropping intensity	115.49	115.94	102.42	130.31
Main crops	Cotton, Bajra, Groundnut, Wheat, Rice, Sugar cane	Rice, Wheat	Rice, Bajra & Sugarcane	Wheat, Bajra, Groundnut, Cotton

Source: Socio-Economic Survey of Gujarat

Table 7.9	Irrigation			
2004-05	**Gujarat**	**Ahmedabad**	**Bharuch**	**Junagadh**
Net Irrigated area (%)	36.19	36.21	35.55	37.57
Gross irrigated area (%)	38.02	41.65	36.66	36.69
Main source of Irrigation	Canals, tubewells & tanks	Canals, tubewells & tanks	Canals & tubewells	Canals & tubewells

Source: Socio-Economic Survey of Gujarat

Table 7.10	Industry and Commerce			
	Gujarat		**Ahmedabad**	**Bharuch**	**Junagadh**
MSME	2006-07	2009-10		
No		229738	48564	9199	6085
Employment		1290029	362902	68668	22141
SSIs - No		312782	65763	14328	8752
Medium and Large		**2009-10**		
No	4130	76097		
Employment	19992	246989		
Major Minerals	Oil & Gas, Lignite, Limestone, Bauxite, Bentonite	NA	Oil & Gas, Lignite	Limestone, Clay

Source: Socio-Economic Survey of Gujarat

Bharuch is endowed with lignite, silica sand, oil and gas and houses industries based on these minerals. It has witnessed large scale investments in chemicals and petrochemicals, drugs & pharmaceuticals, engineering and textiles. The presence of existing industrial estates in Bharuch, Ankaleshwar and Panoli has enhanced the location attractiveness of the region. The district has 135 commercial bank offices with a credit-deposit ratio of 36% with large portion of credit flowing to industries and agriculture. There are 9199 medium and small scale industries employing 68668 persons in Bharuch.

Table 7.11	Banking and Finance				
	Gujarat		**Ahmedabad**	**Bharuch**	**Junagadh**
	2005	2009	2009	2009	2009
No. SCB Branches	3705	4283	718	135	159
Credit Deposit ratio	46.73	63.16	96.77	36.67	37.12

Source: Socio-Economic Survey of Gujarat

Literacy rate has increased substantially during the last decade for both males and females. The district has 886 primary schools, 260 middle/high schools and 10 colleges.

Health Care

In Bharuch, rural areas are served by 7 CHCs in addition to 38 PHCs and 200 sub-centres and urban areas are served by 7 hospitals/dispensaries; 16 ayurvedic and 5 homeopathic hospitals. During the NRHM period, the district has witnessed improvement in institutional delivery from 38.7% to 47.9%, total fertility rate from 3.3 to 2.4, contraceptive prevalence from 62.7% to 70.3. However, full ANC has declined from

31.9% to 22.7% and full vaccination from 83.4% to 56.8%. Sex ratio has improved marginally from 921 to 924.

7.2.3 Junagadh

Junagadh[77] district located in Saurashtra region possesses a long coast line on Arabian Sea. The district comprises of 14 talukas and 1030 villages. Urban areas comprise of 1 municipal corporation and 17 municipal towns. During the last decade, the population growth has slowed down compared to the previous decade. Literacy level has increased substantially during the last decade for both males and females. Junagadh district has 1330 primary schools, 512 middle/high schools and 5 colleges.

Table 7.12	Health Indicators in Districts				
	Gujarat		Ahmedabad	Bharuch	Junagadh
Health Infrastructure	2003-04	2007-08	2007-08	2007-08	2007-08
Medical Institutions					
Overall	1747	1749	86	84	56
Government	1635	1641	17	5	8
Non-Government	112	108	69	79	48
Rural					
CHCs	273	273	9	15	7
PHCs	1067	1073	43	55	38
Sub Centres	7274	7274	279	200	390
Dispensaries	5	5	0	0	0
Others	40	52	3	2	4
Urban					
Hospitals	83	83	7	2	2
Dispensaries	180	180	10	1	7
Others	99	93	14	4	3
Urban Total	362	356	31	7	12
Ayurvedic Hospitals	775	501	25	16	22
Homeopathy Hospitals	216	216	22	5	9
No of Hospital Beds	40419	41008	4361	1066	1395

Source: Statistical Handbook

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[77] District Statistical Outlook, Junagadh, 2009-10- District Panchayat, Junagadh.

Agriculture is the main economic activity and livelihood of the people with 37.57% area under irrigation. Canals and tube wells are the main source of irrigation. Main crops are groundnut, wheat, cotton and pulses. Dairy and fishing activities employ significant number of people. Important minerals available in the district are limestone and black stone. Sizeable industrial activity is found in cement, chemicals and textiles sectors. There are 159 commercial bank offices with a credit-deposit ratio of 37%. Maximum share of credit flows to agriculture sector. Junagadh has 6085 medium and small scale industries employing 22141 persons.

Health Care

Health care services are spread across urban and rural areas in Junagadh. Rural areas are served by 55 PHCs and 390 sub-centres in addition to 15 CHC; urban areas are served by 12 hospitals/dispensaries; 22 ayurvedic and 9 homeopathic hospitals. During the implementation of NRHM, total fertility rate has improved from 4 to 2.6, full ANC from 19.9% to 38.3%, institutional delivery from 37.1% to 56.3% and full vaccination from 61.1% to 66.7%. Contraceptive prevalence has improved marginally from 63% to 64.8% and sex ratio has declined from 955 to 952.

Chapter VIII

8. Analysis and Findings of Survey

8.1 Health Workers

8.1.1 Analysis of Sample

Table 8.1.1	Sample size of Health Workers							
District	**Ahmedabad**		**Bharuch**		**Junagadh**		**All Districts**	
	No	%	No	%	No	%	No	%
No. of FHW	35	70%	47	70%	39	71%	121	70%
No. of MPHW	15	30%	20	30%	16	29%	51	30%
Total HW	50	100%	67	100%	55	100%	172	100%

Table 8.1.2	Sample Characteristic				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Sample size and distribution	3	0.023	0.988	Accept	No Significant Difference

Sample size was determined for each district based on the number of health workers and subsequent selection of respondents was on random basis. In all three districts, the proportion of FHM and MPHW was almost same (Table 8.1.1). Test of hypothesis show no significant difference in sample distribution (Table 8.1.2).

Graph 8.1: Sample size of Health Workers

Graph 8.2: **Sample Distribution**

30%

70%

■ No. of FHW
■ No. of MPHW
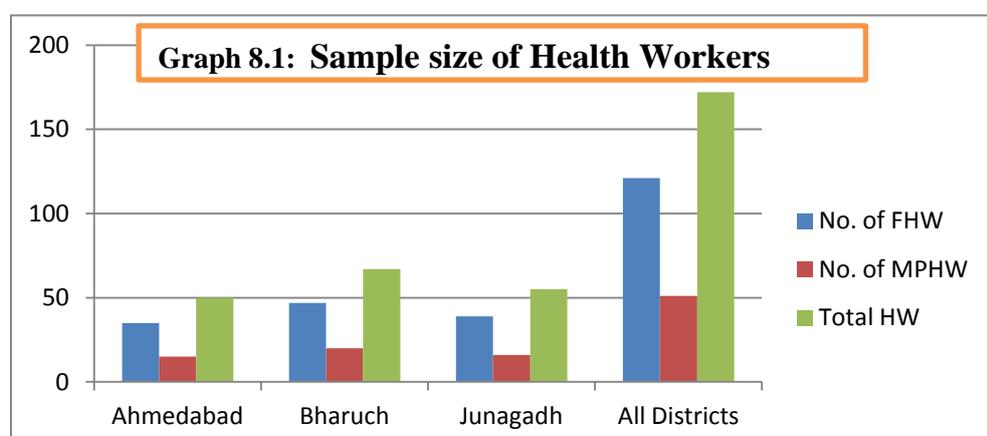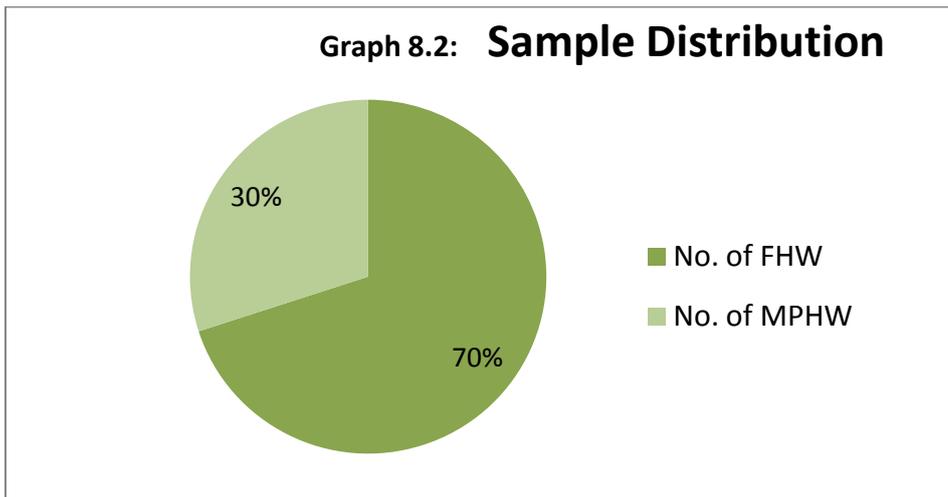
8.1.2 Functions of Health Workers

In response to the question to identify work areas, health workers have identified family planning, immunization, epidemic control, health education, maternal health and nutrition as their functions (Table 8.1.3). Importance of each function is based on the share of frequency of response to each category to total responses from health workers. Variations are observed within the districts and category of health workers. In all the districts, most MPHWs have identified family planning whereas as most FHW have identified immunization in Ahmedabad, and maternal health in Bharuch and Junagadh. Test of Hypothesis shows significant difference in work areas identified across districts (Table 8.1.5).

Table 8.1.3							Functions of Health Workers					
District	**Ahmedabad**						**Bharuch**					
Function	**FHW**		**MPHW**		**All**		**FHW**		**MPHW**		**All**	
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
1. Family Planning	25	16%	16	23%	41	18%	41	16%	20	20%	61	17%
2. Epidemic Control	22	14%	12	17%	34	15%	37	14%	18	18%	55	15%
3. Health Education	19	12%	8	11%	27	12%	41	16%	18	18%	59	16%
4. Immunization	32	20%	11	16%	43	19%	42	16%	13	13%	55	15%
5. Maternal Health	16	10%	7	10%	23	10%	45	17%	12	12%	57	16%
6. Nutrition	24	15%	9	13%	33	15%	39	15%	14	14%	53	15%
7. Other	19	12%	7	10%	26	11%	13	5%	6	6%	19	5%
Total	157	100%	70	100%	227	100%	258	100%	101	100%	359	100%
	Junagadh						**All Districts**					
1. Family Planning	36	18%	13	18%	49	18%	102	17%	49	20%	151	18%
2. Epidemic Control	33	16%	12	16%	45	16%	92	15%	42	17%	134	16%
3. Health Education	35	17%	13	18%	48	17%	95	15%	39	16%	134	16%
4. Immunization	36	18%	13	18%	49	18%	110	18%	37	15%	147	17%
5. Maternal Health	39	19%	13	18%	52	19%	100	16%	32	13%	132	15%
6. Nutrition	6	3%	5	7%	11	4%	69	11%	28	11%	97	11%
7. Other	17	8%	4	5%	21	8%	49	8%	17	7%	66	8%
Total	202	100%	73	100%	275	100%	617	100%	244	100%	861	100%

Table 8.1.4							Key Functions of Health Workers					
District	**Ahmedabad**						**Bharuch**					
	FHW		**MPHW**		**All**		**FHW**		**MPHW**		**All**	
Key Work Areas	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
1. Family Planning	16	16%	12	31%	28	20%	27	22%	18	31%	45	25%
2. Epidemic Control	16	16%	11	28%	27	19%	8	6%	13	22%	21	12%
3. Health Education	8	8%	9	23%	17	12%	8	6%	10	17%	18	10%
4. Immunization	27	26%	3	8%	30	21%	36	29%	11	19%	47	26%
5. Maternal Health	22	22%	1	3%	23	16%	37	30%	4	7%	41	23%
6. Nutrition	9	9%	3	8%	12	9%	4	3%	1	2%	5	3%
7. Other	4	4%	0	0%	4	3%	0	0%	0	0%	0	0%
Total	102	100%	39	100%	141	100%	124	100%	58	100%	182	100%
District	**Junagadh**						**All Districts**					
1. Family Planning	32	28%	13	29%	45	28%	75	22%	43	30%	118	24%
2. Epidemic Control	2	2%	5	11%	7	4%	26	8%	29	20%	55	11%
3. Health Education	6	5%	2	4%	8	5%	22	6%	21	15%	43	9%
4. Immunization	36	32%	12	27%	48	30%	99	29%	26	18%	125	26%
5. Maternal Health	37	32%	10	22%	47	30%	96	28%	15	11%	111	23%
6. Nutrition	1	1%	3	7%	4	3%	14	4%	7	5%	21	4%
7. Other	0	0%	0	0%	0	0%	4	1%	0	0%	4	1%
Total	114	100%	45	100%	159	100%	340	100%	142	100%	482	100%

Table 8.1.5	Functions of Health Workers				
Null Hypothesis	**Degrees of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
All functions	12	37.0	0.001	Reject	Significant Difference
Key Functions	10	43.08	<0.001	Reject	Significant Difference
FHW & MPHW – All Functions	6	3.94	0.685	Accept	No Significant Difference
FHW & MPHW – Key Functions	5	42.9	<0.001	Reject	Significant Difference

To ascertain their priority work areas, health workers were asked to indentify three key functions. Key functions identified for all three districts are immunization, family planning and maternal health. In case of FHW, they are immunization, maternal health and family planning and for MPHW, they are family planning, epidemic control and immunization (Table 8.1.4). Here again, significant difference exists in key function across districts (Table 8.1.5). Across districts, it is observed that key functions of FHW are immunization and maternal health and for MPHW it is family planning. Variation can be seen in the other key functions of MPHW, which is epidemic control in Ahmedabad and Bharuch and immunization in Junagadh.

A comparison of functions of FHW and MPHW shows insignificant difference in case of all functions and interestingly, significant difference is observed while comparing key functions (Table 8.1.5)

8.1.3 Health Planning

Health action plan is required to be prepared for each village as per the NRHM norms, based on local needs and problem, and forms the basis for implementation of maternal, child health and other health programs. Survey shows that health action plan was prepared in most health centres. Health action plan was not available in 4% overall, 2% in Ahmedabad and Bharuch and 7% in Junagadh (Table 8.1.6). No significant difference is found in the availability of health action plan. (Table 8.1.11)

Process of preparation of plan requires a participatory approach at village level in which various groups are involved. They are Gram Panchayats, Gram Sabha, Anganwadi workers, women groups, NGO and others like ASHA workers. The aim is to prepare the plan in alignment with broader health objectives of the State while ensuring that it

addresses local needs, resources and challenges. It is observed that preparation is undertaken at the level of health workers in 55% cases and at PHC in 30% of cases. In rest of the cases planning was done at district or taluka or by others (Table 8.1.7). This is 28% in Ahmedabad, 15% in Bharuch and 11% in Junagadh. Strong efforts have to be made in Ahmedabad to strengthen the planning process at the local level. Both FHW and MPHW have similar responses in choosing the preparation level. No significant difference is found as far as the level at which plans are prepared (Table 8.1.11).

Table 8.1.6		Planning: Health Action Plan Availability									
District		Ahmedabad						Bharuch			
		Yes		No		All		Yes		No		All
FHW	34	97%	1	3%	35	100%	46	98%	1	2%	47	100%
MPHW	15	100%	0	0%	15	100%	18	100%	0	0%	18	100%
All	49	98%	1	2%	50	100%	64	98%	1	2%	65	100%
District		Junagadh						All Districts			
FHW	36	92%	3	8%	39	100%	116	96%	5	4%	121	100%
MPHW	15	94%	1	6%	16	100%	48	98%	1	2%	49	100%
All	51	93%	4	7%	55	100%	164	96%	6	4%	170	100%

Table 8.1.7	Planning: Health Action Plan Preparation											
	Dist	Block	PHC	Self	Othrs	All	Dist	Block	PHC	Self	Othrs	All
District	Ahmedabad						Bharuch					
FHW	0	1	11	19	4	35	2	2	12	28	4	48
	7%	7%	28%	44%	13%	100%	4%	4%	25%	58%	8%	100%
MPHW	0	4	6	5	0	15	0	0	8	9	2	19
	0%	25%	35%	35%	5%	100%	0%	0%	42%	47%	11%	100%
All	0	5	17	24	4	50	2	2	20	37	6	67
	5%	12%	30%	42%	11%	100%	3%	3%	30%	55%	9%	100%
District	Junagadh						All Districts					
FHW	0	0	9	27	3	39	2	3	32	74	11	122
	0%	0%	23%	69%	8%	100%	2%	2%	26%	61%	9%	100%
MPHW	0	0	6	7	3	16	0	4	20	21	5	50
	0%	0%	38%	44%	19%	100%	0%	8%	40%	42%	10%	100%
All	0	0	15	34	6	55	2	7	52	95	16	172
	0%	0%	27%	62%	11%	100%	1%	4%	30%	55%	9%	100%

Chart 8.1:   **Health Management: Health Worker Perspective**

Infrastructure & Facilities
- **Transport**
- **Condition of centre**
- **Amenities**

Human Resources Management
- **Involvement**
- **Motivation**
- **Burden & Clarity**
- **Pay & Allowances**
- **Training**

Health Planning
- **Decentralised**
- **Involvement**
- **Multiple Stakeholders**
- **Targets**

Activities
- **Awareness-ICE**
- **Program/ campaigns**
- **Health Centre**

Monitoring
- **Reporting**
- **Reviews**
- **Visits**

Output/ Outcome
- **Target Achievement**
- **Health Indicators**
- **Increase in demand**

Incentives/ Reward
- **Performance Evaluation**
- **Promotion**
- **Recognition**

Resources
- **Drugs and Equipments**
- **Financial Powers**
- **Time Management**

Table 8.1.8	Health Action Plan: Groups involvement												
Level	Gram panchayat	Women groups	NGOs	Anganwadi workers	Gram Sabha	Others	All	Gram panchayat	Women groups	NGOs	Anganwadi workers	Gram Sabha	Others	All
Districts	Ahmedabad							Bharuch						
FHW	4	1	4	22	3	12	46	6	1	4	25	6	7	49
	9%	2%	9%	48%	7%	26%	100%	12%	2%	8%	51%	12%	14%	100%
MPHW	2	1	1	12	4	8	28	3	3	1	14	6	6	33
	7%	4%	4%	43%	14%	29%	100%	9%	9%	3%	42%	18%	18%	100%
All	6	2	5	34	7	20	74	9	4	5	39	12	13	82
	8%	3%	7%	46%	9%	27%	100%	11%	5%	6%	48%	15%	16%	100%
Districts	Junagadh							All Districts						
FHW	1	3	1	24	5	9	43	11	5	9	71	14	28	138
	2%	7%	2%	56%	12%	21%	100%	8%	4%	7%	51%	10%	20%	100%
MPHW	1	1	0	9	3	4	18	6	5	2	35	13	18	79
	6%	6%	0%	50%	17%	22%	100%	8%	6%	3%	44%	16%	23%	100%
All	2	4	1	33	8	13	61	17	10	11	106	27	46	217
	3%	7%	2%	54%	13%	21%	100%	8%	5%	5%	49%	12%	21%	100%

Table 8.1.9	Planning: Quality of Involvement of Groups I											
Districts	**Ahmedabad**						**Bharuch**					
	Not Involved	**Less**	**Normal**	**Good**	**Very Good**	**Total**	**Not Involved**	**Less**	**Normal**	**Good**	**Very Good**	**Total**
FHW												
Gram Panchayat	1	8	0	5	2	16	5	2	2	4	0	13
Women groups	1	6	3	2	2	14	6	0	7	1	1	15
NGOs	1	5	2	1	3	12	8	1	0	1	0	10
Anganwadi workers	1	0	3	12	16	32	3	1	8	20	8	40
Gram Sabha	1	0	1	11	18	31	2	0	3	18	16	39
Gram panchayat	6%	50%	0%	31%	13%	100%	38%	15%	15%	31%	0%	100%
Women groups	7%	43%	21%	14%	14%	100%	40%	0%	47%	7%	7%	100%
NGOs	8%	42%	17%	8%	25%	100%	80%	10%	0%	10%	0%	100%
Anganwadi workers	3%	0%	9%	38%	50%	100%	8%	3%	20%	50%	20%	100%
Gram sabha	3%	0%	3%	35%	58%	100%	5%	0%	8%	46%	41%	100%
MHW												
Gram Panchayat	1	1	2	2	2	8	6	1	2	1	0	10
Women Groups	0	2	0	2	2	6	6	0	1	3	0	10
NGOs	0	1	1	2	3	7	6	2	0	2	1	11
Anganwadi workers	1	0	0	5	6	12	3	0	3	7	5	18
Gram Sabha	1	0	4	3	7	15	1	1	2	7	5	16
Gram Panchayat	13%	13%	25%	25%	25%	100%	60%	10%	20%	10%	0%	100%
Women groups	0%	33%	0%	33%	33%	100%	60%	0%	10%	30%	0%	100%
NGOs	0%	14%	14%	29%	43%	100%	55%	18%	0%	18%	9%	100%
Anganwadi workers	8%	0%	0%	42%	50%	100%	17%	0%	17%	39%	28%	100%
Gram sabha	7%	0%	27%	20%	47%	100%	6%	6%	13%	44%	31%	100%
All Workers												
Gram Panchayat	2	9	2	7	4	24	11	3	4	5	0	23
Women groups	1	8	3	4	4	20	12	0	8	4	1	25
NGOs	1	6	3	3	6	19	14	3	0	3	1	21
Anganwadi workers	2	0	3	17	22	44	6	1	11	27	13	58
Gram Sabha	2	0	5	14	25	46	3	1	5	25	21	55
Gram Panchayat	8%	38%	8%	29%	17%	100%	48%	13%	17%	22%	0%	100%
Women Groups	5%	40%	15%	20%	20%	100%	48%	0%	32%	16%	4%	100%
NGOs	5%	32%	16%	16%	32%	100%	67%	14%	0%	14%	5%	100%
Anganwadi workers	5%	0%	7%	39%	50%	100%	10%	2%	19%	47%	22%	100%
Gram Sabha	4%	0%	11%	30%	54%	100%	5%	2%	9%	45%	38%	100%

Table 8.1.10						Planning: Quality of Involvement of Groups II					
Districts	**Junagadh**						**All Districts**				
	Not Involved	Less	Normal	Good	Very Good	Total	Not Involved	Less	Normal	Good	Very Good	Total
FHW												
Gram panchayat	13	1	1	2	0	17	19	11	3	11	2	46
Women groups	11	2	1	3	0	17	18	8	11	6	3	46
NGOs	13	0	0	1	1	15	22	6	2	3	4	37
Anganwadi workers	9	3	6	10	7	35	13	4	17	42	31	107
Gram Sabha	6	2	9	8	11	36	9	2	13	37	45	106
Gram panchayat	76%	6%	6%	12%	0%	100%	41%	24%	7%	24%	4%	100%
Women groups	65%	12%	6%	18%	0%	100%	39%	17%	24%	13%	7%	100%
NGOs	87%	0%	0%	7%	7%	100%	59%	16%	5%	8%	11%	100%
Anganwadi workers	26%	9%	17%	29%	20%	100%	12%	4%	16%	39%	29%	100%
Gram sabha	17%	6%	25%	22%	31%	100%	8%	2%	12%	35%	42%	100%
MHW												
Gram panchayat	3	1	1	0	1	6	10	3	5	3	3	20
Women groups	3	0	1	1	1	6	9	2	2	6	3	22
NGOs	4	1	0	0	0	5	10	4	1	4	4	23
Anganwadi workers	1	0	4	5	3	13	5	0	7	17	14	43
Gram sabha	0	0	2	10	2	14	2	1	8	20	14	45
Gram panchayat	50%	17%	17%	0%	17%	100%	50%	15%	25%	15%	15%	100%
Women groups	50%	0%	17%	17%	17%	100%	41%	9%	9%	27%	14%	100%
NGOs	80%	20%	0%	0%	0%	100%	43%	17%	4%	17%	17%	100%
Anganwadi workers	8%	0%	31%	38%	23%	100%	12%	0%	16%	40%	33%	100%
Gram sabha	0%	0%	14%	71%	14%	100%	4%	2%	18%	44%	31%	100%
All Workers												
Gram panchayat	16	2	2	2	1	23	29	14	8	14	5	66
Women groups	14	2	2	4	1	23	27	10	13	12	6	68
NGOs	17	1	0	1	1	20	32	10	3	7	8	60
Anganwadi workers	10	3	10	15	10	48	18	4	24	59	45	150
Gram sabha	6	2	11	18	13	50	11	3	21	57	59	151
Gram panchayat	70%	9%	9%	9%	4%	100%	44%	21%	12%	21%	8%	100%
Women groups	61%	9%	9%	17%	4%	100%	40%	15%	19%	18%	9%	100%
NGOs	85%	5%	0%	5%	5%	100%	53%	17%	5%	12%	13%	100%
Anganwadi workers	21%	6%	21%	31%	21%	100%	12%	3%	16%	39%	30%	100%
Gram sabha	12%	4%	22%	36%	26%	100%	7%	2%	14%	38%	39%	100%

Table 8.1.11	Health Action Plan				
Null Hypothesis	Degrees of Freedom	χ^2	p	Reject/ Accept	Remarks
Availability of Health Plan	2	3.36	0.186	Accept	No significant difference
Where the Health Plan is prepared?	8	6.675	0.352	Accept	
Groups involved in preparation of plan	10	9.416	0.493	Accept	
Quality of involvement of groups	6	276.82	<0.0001	Reject	Significant difference

Analysis of participation of various groups in preparation of plan shows that Anganwadi (51%) and ASHA (20%) workers have the highest level of involvement (Table 8.1.8). Gram Sabhas (10%) are involved to a reasonable extent whereas the involvement of Gram Panchayats, Women Groups and NGOs is weak in all the districts. No significant difference is found across districts in participation of groups in planning process.

Survey also ascertained the quality of involvement of various groups in planning process. Analysis of the response shows that involvement is good or very good in 69% responses in case of Anganwadi workers and 77% in case of Gram Sabha. However, in case of Gram Panchayats, Women Groups and NGOs it is 29%, 27% and 15% (Table 8.1.9 & 8.1.10). There is immense scope for improving the quality of involvement of these groups in the State. In comparison to FHW, more proportion of MPHW had specified that the involvement of these three groups is very good or good. This is found especially in Junagadh found district. This indicates need to expand and strengthen the quality of participation of key stakeholders in the process of preparation of health plan. The prevalence of significant difference in the quality of involvement is found from test of hypothesis.

8.1.4 Infrastructure

Infrastructure and facilities play crucial role in enhancing the quality and productivity of health workers in delivering health care. Travel from residence to work place in terms of time taken and availability of transport, local travel from health centre to villages in work area and travel to place of beneficiaries constitute major travel requirements of health workers. Facilities in health centre like physical condition of the health centre, and availability of drinking water, toilet and seating are important to improve the work place efficiency.

Table 8.1.12	**Infrastructure: Time taken to travel to work place**								
Districts	Level	Low	Medium	High	All	Low	Medium	High	All
Ahmedabad	FHW	29	5	1	35	83%	14%	3%	100%
	MPHW	14	0	1	15	93%	0%	7%	100%
	All	43	5	2	50	86%	10%	4%	100%
Bharuch	FHW	37	9	1	47	79%	19%	2%	100%
	MPHW	14	3	1	18	78%	17%	6%	100%
	All	51	12	2	65	78%	18%	3%	100%
Junagadh	FHW	29	8	2	39	74%	21%	5%	100%
	MPHW	13	3	0	16	81%	19%	0%	100%
	All	42	11	2	55	76%	20%	4%	100%
All Districts	FHW	95	22	4	121	79%	18%	3%	100%
	MPHW	41	6	2	49	84%	12%	4%	100%
	All	136	28	6	170	80%	16%	4%	100%

Table 8.1.13	**Infrastructure: Availability of Transport to Health Centre**								
Districts	Level	Never	Some times	Always	All	Never	Some times	Always	All
Ahmedabad	FHW	2	8	25	35	6%	23%	71%	100%
	MPHW	0	4	11	15	0%	27%	73%	100%
	All	2	12	36	50	4%	24%	72%	100%
Bharuch	FHW	1	13	33	47	2%	28%	70%	100%
	MPHW	2	6	10	18	11%	33%	56%	100%
	All	3	19	43	65	5%	29%	66%	100%
Junagadh	FHW	4	12	22	38	11%	32%	58%	100%
	MPHW	0	7	9	16	0%	44%	56%	100%
	All	4	19	31	54	7%	35%	57%	100%
All Districts	FHW	7	33	80	120	6%	28%	67%	100%
	MPHW	2	17	30	49	4%	35%	61%	100%
	All	9	50	110	169	5%	30%	65%	100%

Table 8.1.14		Infrastructure: Local transport to Villages in work area							
District	Cate gory	Never	Some times	Always	All	Never	Some times	Always	All
Ahmedabad	FHW	5	8	22	35	14%	23%	63%	100%
	MPHW	0	5	10	15	0%	33%	67%	100%
	All	5	13	32	50	10%	26%	64%	100%
Bharuch	FHW	2	19	26	47	4%	40%	55%	100%
	MPHW	0	4	14	18	0%	22%	78%	100%
	All	2	23	40	65	3%	35%	62%	100%
Junagadh	FHW	1	15	22	38	3%	39%	58%	100%
	MPHW	2	5	8	15	13%	33%	53%	100%
	All	3	20	30	53	6%	38%	57%	100%
All Districts	FHW	8	42	70	120	7%	35%	58%	100%
	MPHW	2	14	32	48	4%	29%	67%	100%
	All	10	56	102	168	6%	33%	61%	100%

Table 8.1.15		Infrastructure: Transport to beneficiaries place								
Districts	Cate gory	Walk	2-Wheeler	Local Transp	Others	All	Walk	2-Wheeler	Local Transp	Others	All
Ahme Dabad	FHW	26	3	5	1	35	74%	9%	14%	3%	100%
	MPHW	15	2	2	1	20	75%	10%	10%	5%	100%
	All	41	5	7	2	55	75%	9%	13%	4%	100%
Bharuch	FHW	42	12	8	1	63	67%	19%	13%	2%	100%
	MPHW	18	3	2	1	24	75%	13%	8%	4%	100%
	All	60	15	10	2	87	69%	17%	11%	2%	100%
Juna Gadh	FHW	32	3	4	0	39	82%	8%	10%	0%	100%
	MPHW	13	2	0	1	16	81%	13%	0%	6%	100%
	All	45	5	4	1	55	82%	9%	7%	2%	100%
All Districts	FHW	100	18	17	2	137	73%	13%	12%	1%	100%
	MPHW	46	7	4	3	60	77%	12%	7%	5%	100%
	All	146	25	21	5	197	74%	13%	11%	3%	100%

Table 8.1.16	Infrastructure				
Null Hypothesis	Deg. of Freedom	χ^2	p	Reject/ Accept	Remarks
Time taken to place of work	4	2.25	0.69	Accept	No significant difference
Vehicle Availability to Health Centre	4	2.64	0.62	Accept	
Local transport to villages	4	0.86	0.93	Accept	
Transport to beneficiaries place	6	5.52	0.479	Accept	

1. Travel Infrastructure

a. To Place of Work

This is measured by ascertaining the availability of transport and time taken to travel to health centre. An analysis of vehicle availability shows that is always available in 65% responses in all districts. Availability is the best in Ahmedabad with 72%, followed by Bharuch at 66% and Junagadh with 57% level (Table 8.1.13). For others, either the availability of transport is sometimes (30%) or never (5%). Time taken to travel to place of work is another dimension of travel infrastructure. Analysis reveal that in 80% responses, time taken is low (less than one hour), medium (1 to 2 hours) in 16% responses and high (more than 2 hours) in 4%. Districtwise analysis reveals that time taken is low in 86% responses in Ahmedabad, 78% in Bharuch and 76% in Junagadh (Table 8.1.12). Test of hypothesis show that there is no significant difference in availability of transport and time taken to go to place of work across districts. (Table 8.1.16)

Combined analysis of availability of transport and time taken reveal that both are interrelated. In Junagadh, where the share of responses in which transport is always available is least and the share of responses with time taken to travel as medium or high is the highest. Thus vehicle availability is a key physical infrastructure to ensure less travel time to work place.

b. Local Transport to Villages in Work Area

Local travel to villages in work area of health workers is always available in 61% cases with 64% in Ahmedabad, 62% in Bharuch and 57% in Junagadh. Availability is sometimes in 33% in cases, and never in 6% cases. Thus in 40% cases, availability of local transport has to be improved to ensure that this does not affect productivity of health workers (Table 8.1.14). No significant difference in this respect is found across the districts based on test of hypothesis (Table 8.1.16).

Table No 8.1.17	Facilities in Health Centre											
District	**FHW**				**MPHW**				**All**			
	I Condition of Centre; II. Water, Sitting, toilet facilities											
Ahmedabad	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Bad	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Poor	1	1	3%	3%	0	0	0%	0%	1	1	2%	2%
Normal	10	8	29%	23%	2	4	13%	27%	12	12	24%	24%
Good	18	17	51%	49%	9	6	60%	40%	27	23	54%	46%
Very Good	6	9	17%	26%	4	5	27%	33%	10	14	20%	28%
Total	35	35	100%	100%	15	15	100%	100%	50	50	100%	100%
Bharuch												
Bad	5	4	11%	9%	0	0	0%	0%	5	4	8%	6%
Poor	6	4	13%	9%	0	0	0%	0%	6	4	9%	6%
Normal	10	15	21%	32%	3	3	17%	17%	13	18	20%	28%
Good	23	23	49%	49%	8	7	44%	39%	31	30	48%	46%
Very Good	3	1	6%	2%	7	8	39%	44%	10	9	15%	14%
Total	47	47	100%	100%	18	18	100%	100%	65	65	100%	100%
Junagadh												
Bad	1	4	3%	5%	0	3	0%	20%	1	7	1%	3%
Poor	4	5	10%	13%	0	2	0%	13%	4	7	2%	3%
Normal	13	23	33%	28%	6	4	38%	27%	19	27	11%	13%
Good	14	40	36%	33%	7	4	44%	27%	21	44	12%	21%
Very Good	7	10	18%	21%	3	2	19%	13%	10	12	6%	6%
Total	39	82	100%	100%	16	15	100%	100%	55	97	32%	46%
All Districts												
Bad	6	8	5%	5%	0	3	0%	6%	6	11	4%	5%
Poor	11	10	9%	6%	0	2	0%	4%	11	12	6%	6%
Normal	33	46	27%	23%	11	11	22%	23%	44	57	26%	27%
Good	55	80	45%	50%	24	17	49%	35%	79	97	46%	46%
Very Good	16	20	13%	16%	14	15	29%	31%	30	35	18%	17%
Total	121	164	100%	100%	49	48	100%	100%	170	212	100%	100%

a. Travel to Beneficiary Place

Visiting beneficiaries to provide health care services is an important part of duty of health workers. Availability of transport to beneficiaries place can be by walk, 2-wheelers, local transport and other means (Table 8.1.15). The response shows that in 74% of cases, they reach the beneficiaries by walk, which is 75% in Ahmedabad, 69% in Bharuch and 82% in Junagadh. 2-wheeler is used by 13% workers: 9% in Ahmedabad, 17% in Bharuch and 9% in Junagadh. In case of both FHW and MPHW, the travel pattern to beneficiary place is similar. In this case also, no significant difference is found across the districts based on test of hypothesis (Table 8.1.16).

Table 8.1.18	Facilities at Health Centre				
Null Hypothesis	Deg. of Freedom	χ^2	p	Reject/ Accept	Remarks
Condition of Health Centre	6	10.69	0.098	Accept	No Significant Difference
Water, sitting and toilet	6	10.37	0.11	Accept	No Significant difference

8.1.5 Facilities in Work Place

Through NRHM and various other programs, Government has committed huge resources to improve the physical condition and facilities of health centres in the State. Over years new buildings have been built and existing building have been renovated and repaired. The aim is to provide good quality work place to workers and beneficiaries. Facilities like drinking water, sitting arrangements and toilet have been added or improved in these centres (Table 8.1.17)

1. Condition of Health Centre

Overall physical condition of health centres is good or very good in 64%, with a district wise break up of 74% in Ahmedabad, 63% in Bharuch and 56% in Junagadh. The condition is bad or poor in 10% cases with 2% in Ahmedabad, 17% in Bharuch and 9% in Junagadh. Thus Bharuch has more health centres which require improvement in condition. All instances of poor or bad condition are mentioned by FHW. It has to be ascertained whether the conditions in health centres are convenient for female. No significant difference is condition of health centres is found across the districts based on test of hypothesis. (Table 8.1.18)

2. Water, Sitting and Toilet facilities

Availability of these facilities is found to be good or very good by 52% health workers whereas 11% found them bad or poor. Only 2% in Ahmedabad found them to be bad or poor compared to 6% in Junagadh and 12% in Bharuch. No significant difference is found in the availability of these facilities at health centres based on test of hypothesis.

8.1.6 Resources in Health Centre

Day to day functioning of health centres require sufficient quantity of drugs without stock-outs which may adversely affect the health care outcomes and reliability for the patients. Likewise, medical equipments for laboratory and few emergency medical care equipments are provided in PHCs. Proper availability of drugs and equipments in

PHCs is crucial to provide proper health care to the patients/ beneficiaries. Hence, these aspects too were covered in the survey.

Table 8.1.19	Resources in Health Centre											
District	**FHW**				**MPHW**				**All**			
	I. Availability of drugs;				**II. Condition of equipments**							
Ahmedabad	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Bad	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Poor	0	2	0%	6%	0	0	0%	0%	0	2	0%	4%
Normal	7	5	20%	14%	5	0	33%	0%	12	5	24%	10%
Good	16	12	46%	34%	7	6	47%	40%	23	18	46%	36%
Very Good	12	16	34%	46%	3	9	20%	60%	15	25	30%	50%
Total	35	35	100%	100%	15	15	100%	100%	50	50	100%	100%
Bharuch												
Bad	0	1	0%	2%	0	0	0%	0%	0	1	0%	2%
Poor	1	2	2%	4%	0	0	0%	0%	1	2	2%	3%
Normal	18	2	38%	4%	3	0	17%	0%	21	2	32%	3%
Good	23	30	49%	64%	11	7	61%	39%	34	37	52%	57%
Very Good	5	12	11%	26%	4	11	22%	61%	9	23	14%	35%
Total	47	47	100%	100%	18	18	100%	100%	65	65	100%	100%
Junagadh												
Bad	0	0	0%	0%	1	0	6%	0%	1	0	2%	0%
Poor	1	0	3%	0%	1	1	6%	6%	2	1	4%	2%
Normal	12	0	31%	0%	2	1	13%	6%	14	1	25%	2%
Good	19	14	49%	37%	8	2	50%	13%	27	16	49%	30%
Very Good	7	24	18%	63%	4	12	25%	75%	11	36	20%	67%
Total	39	38	100%	100%	16	16	100%	100%	55	54	100%	100%
All Districts												
Bad	0	1	0%	1%	1	0	2%	0%	1	1	1%	1%
Poor	4	4	4%	3%	1	1	2%	2%	5	5	3%	3%
Normal	38	7	34%	6%	10	1	20%	2%	48	8	30%	5%
Good	53	56	47%	47%	26	15	53%	31%	79	71	49%	42%
Very Good	17	52	15%	43%	11	32	22%	65%	28	84	17%	50%
Total	112	120	100%	100%	49	49	100%	100%	161	169	100%	100%

Table 8.1.20	Resources at Health Centre				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Availability of drugs	6	0.28	0.218	Accept	No significant Difference
Condition of equipments	6	16.58	0.011	Reject	Significant difference

1. Availability of Drugs

Response of health workers show that overall in 66% cases, drug inventory is good or very good. Corresponding level is 76% in Ahmedabad, 66% in Bharuch and 57% in Junagadh. Availability is bad or poor in 4% cases: nil in Ahmedabad, 2% in Bharuch

and 11% in Junagadh. In Junagadh, there are a relatively more number of cases in which drug inventory is bad or poor in both FHW and MPHW Table (8.1.19). Test of hypothesis shows no significant difference in availability of drugs across districts (Table 8.1.20).

2. Condition of Medical Equipments

This is found to be good or very good in 92% cases in all districts. It is 86% in Ahmedabad, 92% in Bharuch and 97% in Junagadh. The lowest is 80% among FHW in Ahmedabad. Test of hypothesis shows significant difference in condition of medical equipments in these districts (Tables 8.1.20 & 8.1.20).

8.1.7 Activities of Health Workers

Many activities are undertaken by the health workers to implement various health programs, provide health care and emergency medical services. For efficient and effective delivery of health care, important activities undertaken are awareness generation, target for key programs and meet beneficiaries.

1. Awareness Generation: Target Groups

Awareness generation is a key component of activities taken up under RCH program at the field level by health workers. Awareness generation with specific information, education and communication activities are undertaken targeting different groups. In addition, it is combined with other activities like Mamta abhiyan which is designated for immunization and antenatal checkups held every Wednesday.

Main target groups are beneficiaries of programs, Women Groups, Community/social groups, Mamta day visitors and Gram Sabha. Overall feedback of health workers shows that most of the beneficiary oriented activities target beneficiaries directly (24%) and Mamta day visitors (24%) followed by Women Groups (19%), Gram Sabhas (16%) and community groups (12%). This is 24%, 25%, 21%, 13% and 12% in Ahmedabad, 24%, 24%, 19%, 18% and 11% in Bharuch and 26%, 23%, 18%, 15% and 13% in Junagadh. The pattern of activities is similar in all the districts except minor variations. Involvement of Women groups in Ahmedabad and Gram Sabhas in Bharuch is more compared to overall level (Table 8.1.22). No significant difference is seen across districts as far as groups targeted for these activities (Table 8.1.21).

Table 8.1.21	Activities of Health Workers				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Activities for which targets are fixed	6	11.26	0.081	Accept	No Significant Difference
Target groups for awareness generation activities	10	3.42	0.97	Accept	
Whether beneficiaries approach for services on their own (Demand for health care)	6	2.75	0.84	Accept	
Place of visiting beneficiaries	8	19.88	0.011	Reject	Significant difference
Difficulty in achieving targets	8	25.4	0.001	Reject	

2. Place of meeting Beneficiaries

Delivery of health care by the workers takes place at different locations depending on local needs and situation. Sub-Centre is the focal point of services of health workers catering to 5-7 villages. As the headquarters of health workers, they are expected to stay near sub-centres, work from there and visit villages and beneficiaries from there. Health workers meet beneficiaries/patients for the purpose of awareness activities, preventive health care, and treatment. For these purposes, they meet at home of beneficiaries, sub centres, Anganwadi, places of friends/relatives and other locations. (Table 8.1.24)

Survey results show that in 47% cases they meet at beneficiaries home, in 21% cases at sub-centres, 17% cases at Anganwadi and 9% cases at place of friends or relatives. Comparison of three districts shows that in Ahmedabad, the place of meeting is less in sub-centres at 9% and more at home in 57% cases. Significant difference is seen as far as place of meeting beneficiaries across districts.

Table 8.1.22		Activities: Target Groups for IEC Activities													
Districts		**Benefi Ciaries**	**Women groups**	**Comm. Meet**	**Mamta Day**	**Gram sabha**	**Oth ers**	**All**	**Benef iciari**	**Wome groups**	**Comm. meetin**	**Mamta day**	**Gram sabha**	**Others**	**All**
Ahmedabad	**FHW**	23	21	10	22	11	5	92	25%	23%	11%	24%	12%	5%	100%
	MPHW	8	6	6	11	6	2	39	21%	15%	15%	28%	15%	5%	100%
	All	31	27	16	33	17	7	131	24%	21%	12%	25%	13%	5%	100%
Bharuch	**FHW**	40	32	19	41	30	6	168	24%	19%	11%	24%	18%	4%	100%
	MPHW	17	13	7	17	13	5	72	24%	18%	10%	24%	18%	7%	100%
	All	57	45	26	58	43	11	240	24%	19%	11%	24%	18%	5%	100%
Junagadh	**FHW**	37	25	19	31	21	10	143	26%	17%	13%	22%	15%	7%	100%
	MPHW	14	10	6	14	8	3	55	25%	18%	11%	25%	15%	5%	100%
	All	51	35	25	45	29	13	198	26%	18%	13%	23%	15%	7%	100%
All Districts	**FHW**	100	78	48	94	62	21	403	25%	19%	12%	23%	15%	5%	100%
	MPHW	39	29	19	42	27	10	166	23%	17%	11%	25%	16%	6%	100%
	All	139	107	67	136	89	31	569	24%	19%	12%	24%	16%	5%	100%

Table 8.1.23	Planning: Targeted Activities									
	Family Planning	**Institutional Delivery**	**ANC 3 visits**	**Others**	**All**	**Family Planning**	**Inst. Delivery**	**ANC 3 visits**	**Others**	**All**
Districts	Ahmedabad					Bharuch				
FHW	23	14	23	15	75	43	24	23	7	97
	31%	19%	31%	20%	100%	44%	25%	24%	7%	100%
MPHW	13	2	4	1	20	18	9	8	3	38
	65%	10%	20%	5%	100%	47%	24%	21%	8%	100%
All	36	16	27	16	95	61	33	31	10	135
	38%	17%	28%	17%	100%	45%	24%	23%	7%	100%
Districts	Junagadh					All Districts				
FHW	35	28	28	19	110	101	66	74	41	282
	32%	25%	25%	17%	100%	36%	23%	26%	15%	100%
MPHW	14	10	9	6	39	45	21	21	10	97
	36%	26%	23%	15%	100%	46%	22%	22%	10%	100%
All	49	38	37	25	149	146	87	95	51	379
	33%	26%	25%	17%	100%	39%	23%	25%	13%	100%

Table 8.1.24		Activities: Place of visiting Beneficiaries											
Districts		at home	Sub-centre	Angan-wadi	Friend / Rel	Others	All	at home	Sub-centre	Angan-wadi	Friend / Rel	Others	All
Ahmedabad	FHW	33	5	7	5	7	57	58%	9%	12%	9%	12%	100%
	MPHW	14	2	3	3	3	25	56%	8%	12%	12%	12%	100%
	All	47	7	10	8	10	82	57%	9%	12%	10%	12%	100%
Bharuch	FHW	46	29	25	12	2	114	40%	25%	22%	11%	2%	100%
	MPHW	18	7	5	3	3	36	50%	19%	14%	8%	8%	100%
	All	64	36	30	15	5	150	43%	24%	20%	10%	3%	100%
Junagadh	FHW	38	22	12	7	5	84	45%	26%	14%	8%	6%	100%
	MPHW	15	8	6	3	1	33	45%	24%	18%	9%	3%	100%
	All	53	30	18	10	6	117	45%	26%	15%	9%	5%	100%
All Districts	FHW	117	56	44	24	14	255	46%	22%	17%	9%	5%	100%
	MPHW	47	17	14	9	7	94	50%	18%	15%	10%	7%	100%
	All	164	73	58	33	21	349	47%	21%	17%	9%	6%	100%

Table 8.1.25		Difficulty in Achieving the Targets										
Districts	Category	Very Easy	Easy	Normal	Difficult	Impo ssible	All	Very Easy	Easy	Normal	Difficult	Impo ssible	All
Ahmedabad	**FHW**	4	13	11	8	3	39	10%	33%	28%	21%	8%	100%
	MPHW	2	3	3	6	1	15	13%	20%	20%	40%	7%	100%
	All	6	16	14	14	4	54	11%	30%	26%	26%	7%	100%
Bharuch	**FHW**	4	10	13	20	5	52	8%	19%	25%	38%	10%	100%
	MPHW	3	0	7	9	2	21	14%	0%	33%	43%	10%	100%
	All	7	10	20	29	7	73	10%	14%	27%	40%	10%	100%
Junagadh	**FHW**	`4	0	6	24	5	39	10%	0%	15%	62%	13%	100%
	MPHW	2	1	2	9	2	16	13%	6%	13%	56%	13%	100%
	All	6	1	8	33	7	55	11%	2%	15%	60%	13%	100%
All Districts	**FHW**	12	23	30	52	13	130	9%	18%	23%	40%	10%	100%
	MPHW	7	4	12	24	5	52	13%	8%	23%	46%	10%	100%
	All	19	27	42	76	18	182	10%	15%	23%	42%	10%	100%

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Table 8.1.26		Activities: Beneficiaries approaching for services on their own											
Districts	Category	Never	Rarely	Some times	Mostly	Always	All	Never	Rarely	Some times	Mostly	Always	All
Ahmedabad	FHW	0	3	11	12	12	38	0%	8%	29%	32%	32%	100%
	MPHW	0	3	0	5	6	14	0%	21%	0%	36%	43%	100%
	All	0	6	11	17	18	52	0%	12%	21%	33%	35%	100%
Bharuch	FHW	0	23	7	12	8	50	0%	46%	14%	24%	16%	100%
	MPHW	0	6	1	6	6	19	0%	32%	5%	32%	32%	100%
	All	0	29	8	18	14	69	0%	42%	12%	26%	20%	100%
Junagadh	FHW	0	17	6	5	12	40	0%	43%	15%	13%	30%	100%
	MPHW	0	6	1	5	3	15	0%	40%	7%	33%	20%	100%
	All	0	23	7	10	15	55	0%	42%	13%	18%	27%	100%
All Districts	FHW	0	43	24	29	32	128	0%	34%	19%	23%	25%	100%
	MPHW	0	15	2	16	15	48	0%	31%	4%	33%	31%	100%
	All	0	58	26	45	47	176	0%	33%	15%	26%	27%	100%

3. Targeted Activities

To achieve the overall health goals the State, time bound targets are given to the health workers. Target determination for various activities is an important component of health plan. In all districts, target setting is done in 39% cases for Family Planning, 23% for Institutional Delivery, 22% for ANC check up and 13% for others. District level analysis shows Family Planning as targeted activity in 38% cases in Ahmedabad, 45% in Bharuch and 33% in Junagadh. In case of Institutional Delivery it is 17%, 24% and 26% whereas for ANC check up it is 28%, 23% and 25% indicating variation across districts. This also shows that the key maternal health activities are planned through a targeted approach at delivery level whereas the same cannot be said for child health activities like immunization and nutrition (Table 8.1.23). No significant difference is seen in targeted activities across districts (Table 8.1.21).

4. Difficulty in Achieving Targets

Health care objectives are achieved by fixing targets for key activities on an annual basis. Targets are achieved or not achieved depending on local situation, problems and challenges. An assessment of difficulty in achieving targets reveals that in 25% cases it was very easy or easy. In 52% cases it is found to be difficult or impossible. Difficulty level is highest in Junagadh where 73% health workers found it difficult or impossible. The same is 50% in Bharuch and 33% in Ahmedabad (8.1.25). Significant difference is seen as far as difficulty in achieving targets across districts.

Determination of target, its monitoring and review are crucial in management of public health delivery in the State. Variation in difficulty levels across districts show that the process of fixing targets not uniform and the methodology needs to be streamlined. Though targets have to be fixed by taking into account the local factors, the process needs to be scientific and facilitate attaining the overall health objectives.

5. Demand for Health Care

Availability of reliable and effective public health system will ensure that beneficiaries would approach for health care services on their own (Table 8.1.26). Though it depends on many factors, perception of health workers gives a measure of this indicator. Survey findings show that 53% of health workers feel that beneficiaries approach for health care in all or most cases. This is 68% in Ahmedabad, 46% in Bharuch and 45% in Junagadh. Overall, in 33% cases, beneficiaries rarely approach for services. This is 12% in Ahmedabad, 42% in Bharuch and 42% in Junagadh. Compared to MPHW, few FHW perceive that the beneficiaries approach on their own for services.

No significant variation in the behaviour of beneficiaries is observed across districts (Table 8.1.21).

8.1.8 Human Resources Management

Human resources are at the heart of an effective public health delivery system. Health workers constitute the cutting edge level of health care providing preventive and curative health care and implementing various health programs involving different stakeholders. Effectiveness of human resource management can be assessed by evaluating the influence of extrinsic and intrinsic motivational factors. Extrinsic factors are pay and allowances, condition of health centre and facilities and intrinsic factors are interpersonal relationship, performance evaluation, involvement in decision making and recognition of work.

1. **Interpersonal Relationship**

This is considered to be good or very good by 94% of workers and bad or poor by 1% workers (Table 8.1.28). However, situation varies across the districts, wherein 9% in Bharuch, 8% in Ahmedabad and none in Junagadh feel, it is normal or bad. Significant difference is observed across the districts based on test of hypothesis (Table 8.1.27)

2. **Motivation Level of Health Workers**

Level of motivation is good or very good in 37% cases in all districts. This is 31% in Ahmedabad, 40% in Bharuch and 37% in Junagadh. Overall, 43% feel it is bad or poor. This is 28% in Ahmedabad, 48% in Bharuch and 50% in Junagadh (Table 8.1.27). Significant difference is found across the districts based on test of hypothesis (Table 8.1.27).

3. **Involvement in Decision Making**

This is considered to be good or very good in 37% cases and bad or poor in 43% cases. Involvement level is lowest in Ahmedabad where 31% feel it is good or very good while the same is 40% in Bharuch and 37% in Junagadh. High variation in level of involvement of MPHW in decision making is observed with 14% in Ahmedabad and in Bharuch 67% feel good or very good (Table 8.1.29). Test of hypothesis show significant difference across the districts (Table 8.1.27).

4. **Quality of Evaluation of Work**

This is considered good or very good in 40% cases in all districts with 52% in Ahmedabad, 34% in Bharuch and 35% in Junagadh. 6% in Ahmedabad, 30% in Bharuch and 44% in Junagadh perceive this as bad or poor (Table 8.1.29). In general more

MPHW (46%) perceive appraisal as good or very good compared to FHW (36%). Test of hypothesis shows significant difference across the districts.

Table 8.1.27	Human Resources Management				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Interpersonal Relationships	6	20.4500	0.0020	Reject	Significant Difference
Motivation Level	8	31.2000	0.0040	Reject	
Involvement in decision making	6	34.8000	0.0040	Reject	
Quality of evaluation of performance	6	20.5900	0.0020	Reject	
Burden of work	4	12.69	0.002	Reject	
Opportunities for career growth	6	15.2	0.019	Reject	
Sufficiency of training	4	9.98	0.041	Reject	
Quality of training	6	6.44	0.376	Accept	No significant difference
Satisfaction with pay and allowances	4	8.31	0.081	Accept	
Clarity of work	6	11.11	0.085	Accept	

5. Pay & Allowances

Overall, 44% health workers are fully satisfied with pay and allowances whereas 41% are partially satisfied and 5% not satisfied. Health workers are fully satisfied in 54% cases in Ahmedabad, 35% in Bharuch and 45% in Junagadh. There is no satisfaction in 18% cases in Ahmedabad and Bharuch and 7% cases in Junagadh. Level of satisfaction among the FHW (47%) is more than MPHW (37%) (Table 8.1.30). The difference is highest in Ahmedabad where the level of full satisfaction is 66% in FHW and 27% in MPHW. Significant difference is found in this respect across districts based on test of hypothesis (Table 8.1.27).

Table 8.1.28				Human Resource Management I							
I. Inter-personal relationship; II. Motivation level											
	I	II	I	II	I	II	I	II	I	II	I	II
Ahmedabad		FHW				MPHW				All		
Bad	0	0	0%	0%	0	4	0%	29%	0	4	0%	8%
Poor	0	5	0%	14%	0	5	0%	36%	0	10	0%	20%
Normal	4	17	11%	49%	0	3	0%	21%	4	20	8%	41%
Good	22	12	63%	34%	7	2	47%	14%	29	14	58%	29%
Very Good	9	1	26%	3%	8	0	53%	0%	17	1	34%	2%
Total	35	35	100%	100%	15	14	100%	100%	50	49	100%	100%
Bharuch												
Bad	2	2	4%	4%	0	3	0%	17%	2	5	3%	8%
Poor	0	24	0%	51%	0	2	0%	11%	0	26	0%	40%
Normal	4	7	9%	15%	0	1	0%	6%	4	8	6%	12%
Good	31	13	66%	28%	11	12	61%	67%	42	25	65%	38%
Very Good	10	1	21%	2%	7	0	39%	0%	17	1	26%	2%
Total	47	47	100%	100%	18	18	100%	100%	65	65	100%	100%
Junagadh												
Bad	0	12	0%	32%	0	4	0%	25%	0	16	0%	30%
Poor	0	8	0%	21%	0	3	0%	19%	0	11	0%	20%
Normal	0	6	0%	16%	0	1	0%	6%	0	7	0%	13%
Good	12	12	32%	32%	8	7	57%	44%	20	19	38%	35%
Very Good	26	0	68%	0%	6	1	43%	6%	32	1	62%	2%
Total	38	38	100%	100%	14	16	100%	100%	52	54	100%	100%
All Districts												
Bad	2	14	2%	12%	0	11	0%	23%	2	25	1%	15%
Poor	0	37	0%	31%	0	10	0%	21%	0	47	0%	28%
Normal	8	30	7%	25%	0	5	0%	10%	8	35	5%	21%
Good	65	37	54%	31%	26	21	55%	44%	91	58	54%	35%
Very Good	45	2	38%	2%	21	1	45%	2%	66	3	40%	2%
Total	120	120	100%	100%	47	48	100%	100%	167	168	100%	100%

Table 8.1.29		Human Resource Management II									
I. Involvement in decision making; II. Quality of evaluation of Work											
	I	II	I	II	I	II	I	II	I	II	I	II
Ahmedabad		FHW				MPHW				All	
Bad	0	0	0%	0%	2	2	13%	13%	2	2	4%	4%
Poor	10	1	29%	3%	5	0	33%	0%	15	1	30%	2%
Normal	16	14	46%	40%	5	7	33%	47%	21	21	42%	42%
Good	9	20	26%	57%	3	6	20%	40%	12	26	24%	52%
Very Good	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Total	35	35	100%	100%	15	15	100%	100%	50	50	100%	100%
Bharuch											
Bad	6	5	13%	11%	3	3	18%	17%	9	8	14%	13%
Poor	21	10	45%	22%	5	1	29%	6%	26	11	41%	17%
Normal	13	18	28%	39%	0	5	0%	28%	13	23	20%	36%
Good	7	13	15%	28%	9	9	53%	50%	16	22	25%	34%
Very Good	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Total	47	46	100%	100%	17	18	100%	100%	64	64	100%	100%
Junagadh											
Bad	17	8	49%	22%	4	3	25%	20%	21	11	41%	21%
Poor	4	10	11%	27%	5	2	31%	13%	9	12	18%	23%
Normal	5	8	14%	22%	2	3	13%	20%	7	11	14%	21%
Good	9	11	26%	30%	5	7	31%	47%	14	18	27%	35%
Very Good	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Total	35	37	100%	100%	16	15	100%	100%	51	52	100%	100%
All Districts											
Bad	23	13	20%	11%	9	8	19%	17%	32	21	19%	13%
Poor	35	21	30%	18%	15	3	31%	6%	50	24	30%	14%
Normal	34	40	29%	34%	7	15	15%	31%	41	55	25%	33%
Good	25	44	21%	37%	17	22	35%	46%	42	66	25%	40%
Very Good	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Total	117	118	100%	100%	48	48	100%	100%	165	166	100%	100%

Table 8.1.30		Human Resource Management III							
		Satisfaction with Pay & Allowances							
Districts	Category	No	Somewhat	Fully	Total	No	Somewhat	Fully	Total
Ahmedabad	**FHW**	0	12	23	35	0%	34%	66%	100%
	MPHW	9	2	4	15	60%	13%	27%	100%
	All	9	14	27	50	18%	28%	54%	100%
Bharuch	**FHW**	9	22	16	47	19%	47%	34%	100%
	MPHW	3	8	7	18	17%	44%	39%	100%
	All	12	30	23	65	18%	46%	35%	100%
Junagadh	**FHW**	2	19	18	39	5%	49%	46%	100%
	MPHW	2	7	7	16	13%	44%	44%	100%
	All	4	26	25	55	7%	47%	45%	100%
All Districts	**FHW**	0	53	57	121	0%	44%	47%	100%
	MPHW	9	17	18	49	18%	35%	37%	100%
	All	9	70	75	170	5%	41%	44%	100%

Table 8.1.31		Human Resource Management IV							
		Burden of work							
Districts	Category	Very high	Normal	Less	Total	Very high	Normal	Less	Total
Ahme dabad	**FHW**	15	16	4	35	43%	46%	11%	100%
	MPHW	9	6	0	15	60%	40%	0%	100%
	All	24	22	4	50	48%	44%	8%	100%
Bharuch	**FHW**	25	22	0	47	53%	47%	0%	100%
	MPHW	9	9	0	18	50%	50%	0%	100%
	All	34	31	0	65	52%	48%	0%	100%
Junagadh	**FHW**	32	6	1	39	82%	15%	3%	100%
	MPHW	11	5	0	16	69%	31%	0%	100%
	All	43	11	1	55	78%	20%	2%	100%
All Districts	**FHW**	72	44	5	121	60%	36%	4%	100%
	MPHW	29	20	0	49	59%	41%	0%	100%
	All	71	77	22	170	42%	45%	13%	100%

Table 8.1.32		Human Resource Management V									
		Clarity of work									
District		Never	Some times	Mostly	Always	Total	Never	Some times	Mostly	Always	Total
Ahme dabad	FHW	7	18	5	5	35	20%	51%	14%	14%	100%
	MPHW	4	4	3	4	15	27%	27%	20%	27%	100%
	All	11	22	8	9	50	22%	44%	16%	18%	100%
Bharuch	FHW	16	28	3	0	47	34%	60%	6%	0%	100%
	MPHW	5	6	5	2	18	28%	33%	28%	11%	100%
	All	21	34	8	2	65	32%	52%	12%	3%	100%
Junagadh	FHW	15	12	8	3	38	39%	32%	21%	8%	100%
	MPHW	2	6	3	4	15	13%	40%	20%	27%	100%
	All	17	18	11	7	53	32%	34%	21%	13%	100%
All Districts	FHW	38	58	16	8	120	32%	48%	13%	7%	100%
	MPHW	11	16	11	10	48	23%	33%	23%	21%	100%
	All	49	74	27	18	168	29%	44%	16%	11%	100%

Table 8.1.33		Human Resource Management VI									
		Career Growth									
District		Nil	Poor	Normal	Good	Total	Nil	Poor	Normal	Good	Total
Ahmedabad	FHW	8	4	20	3	35	23%	11%	57%	9%	100%
	MPHW	10	3	0	2	15	67%	20%	0%	13%	100%
	All	18	7	20	5	50	36%	14%	40%	10%	100%
Bharuch	FHW	18	10	8	11	47	38%	21%	17%	23%	100%
	MPHW	6	2	2	8	18	33%	11%	11%	44%	100%
	All	24	12	10	19	65	37%	18%	15%	29%	100%
Junagadh	FHW	9	11	8	9	37	24%	30%	22%	24%	100%
	MPHW	4	2	4	5	15	27%	13%	27%	33%	100%
	All	13	13	12	14	52	25%	25%	23%	27%	100%
All Districts	FHW	35	25	36	23	119	29%	21%	30%	19%	100%
	MPHW	20	7	6	15	48	42%	15%	13%	31%	100%
	All	55	32	42	38	167	33%	19%	25%	23%	100%

6. Burden of Work

Overall, 60% workers think they have very high burden of work. This level is 48% in Ahmedabad, 52% in Bharuch and 78% in Junagadh. 82% of FHW in Junagadh find the burden of work as very high. Burden of work is considered less in 8% cases in Ahmedabad, nil cases in Bharuch and 2% in Junagadh (Table 8.1.31). Test of hypothesis show significant difference in burden of work across the districts (Table 8.1.27).

7. Clarity of Work

In 27% cases clarity of work exists in most or at all times. In rest 73% cases, clarity exists sometimes or never. Districtwise analysis shows that clarity exists always or mostly in 34% cases in Ahmedabad, 15% in Bharuch and 34% in Junagadh. Clarity is low among FHW (80%) compared to MPHW (56%). Among the districts, clarity is lowest in Bharuch (84%) compared to 66% in both Ahmedabad and Junagadh (Table 8-1.32). Test of hypothesis show no significant difference in clarity of work across the districts.

8. Career Growth (Opportunity for of Promotion)

48% of health workers think that their chances of promotion are normal or good. This level is 50% in Ahmedabad, 44% in Bharuch and 49% in Junagadh. Others feel that their chances are nil or poor. Comparison of FHW and MPHW shows that 29% of FHW and 42% of MPHW feel that their promotional chances are nil (Table 8.1.33). Test of hypothesis show significant difference in perception of opportunity for career growth across the districts (Table 8.1.27).

9. Training

An important and integral part of human resource development is training. Sufficiency and quality of training are two important parameters which were assessed in survey of health workers.

a. Adequacy of Training

Assessments show that 25% of health workers think the training is less and 8% think it is excess. 34% in Ahmedabad, 29% in Bharuch and 13% in Junagadh think the training is less. Significant variation is observed in MPHW across districts, with 53% in Ahmedabad, 22% in Bharuch and 0% in Junagadh who think that the training is less (Table 8.1.34). Significant difference is found in adequacy of training across districts based on test of hypothesis (Table 8.1.27).

Table 8.1.34		Training of Health Workers							
Districts		Adequacy of training							
	Category	Less	Sufficient	Excess	Total	Less	Sufficient	Excess	Total
Ahme dabad	FHW	9	22	4	35	26%	63%	11%	100%
	MPHW	8	5	2	15	53%	33%	13%	100%
	All	17	27	6	50	34%	54%	12%	100%
Bharuch	FHW	14	30	1	45	31%	67%	2%	100%
	MPHW	4	13	1	18	22%	72%	6%	100%
	All	18	43	2	63	29%	68%	3%	100%
Junagadh	FHW	7	29	3	39	18%	74%	8%	100%
	MPHW	0	12	2	14	0%	86%	14%	100%
	All	7	41	5	53	13%	77%	9%	100%
All Districts	FHW	9	81	8	119	8%	68%	7%	100%
	MPHW	8	30	5	47	17%	64%	11%	100%
	All	17	111	13	166	10%	67%	8%	100%

b. Quality of Training

As far as the quality of training concerned, 18% of all health workers think it is weak or normal. This is 20% in Ahmedabad, 12% in Bharuch and 23% in Junagadh. 50% of all health workers observe that quality is very good or excellent. This is 49% in Ahmedabad, 48% in Bharuch and 53% in Junagadh (Table 8.1.35). Test of hypothesis show that no significant difference in quality of training across the districts.

8.1.9 Monitoring & Review

All the activities planned are monitored and reviewed by higher officials to ensure that they are properly implemented. Functioning of health workers is monitored by Medical Officers at PHC level and CDHO at the district level. Periodic reports and meetings are the normal monitoring mechanism for this purpose. This has to be optimal, without being too many or too few to be effective.

8.1.9 Monitoring & Review

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Table 8.1.35		Training of Health Workers					
		Quality of Training					
Districts	Category	Weak	Normal	Good	Very Good	Excellent	Total
Ahmedabad	FHW	0	4	11	11	9	35
	MPHW	0	6	5	1	3	15
	All	0	10	16	12	12	50
	FHW	0%	11%	31%	31%	26%	100%
	MPHW	0%	40%	33%	7%	20%	100%
	All	0%	20%	32%	24%	24%	100%
Bharuch	FHW	2	3	20	15	7	47
	MPHW	0	3	6	5	4	18
	All	2	6	26	20	11	65
	FHW	4%	6%	43%	32%	15%	100%
	MPHW	0%	17%	33%	28%	22%	100%
	All	3%	9%	40%	31%	17%	100%
Junagadh	FHW	0	9	9	10	11	39
	MPHW	1	2	4	3	4	14
	All	1	11	13	13	15	53
	FHW	0%	23%	23%	26%	28%	100%
	MPHW	7%	14%	29%	21%	29%	100%
	All	2%	21%	25%	25%	28%	100%
All Districts	FHW	0	16	40	36	27	121
	MPHW	0	11	15	9	11	47
	All	0	27	55	45	38	168
	FHW	0%	13%	33%	30%	22%	100%
	MPHW	0%	23%	32%	19%	23%	100%
	All	0%	16%	33%	27%	23%	100%

Table 8.1.36	Monitoring & Review: I. No of Reports; II. Utility of Reporting											
	FHW				MPHW				All			
Ahmedabad	I	II	I	II	I	II	I	II	I	II	I	II
Very High	4	7	13%	20%	4	5	29%	33%	8	12	18%	24%
High	8	15	26%	43%	1	2	7%	13%	9	17	20%	34%
Normal	18	10	58%	29%	9	8	64%	53%	27	18	60%	36%
Less	1	2	3%	6%	0	0	0%	0%	1	2	2%	4%
Very Less	0	1	0%	3%	0	0	0%	0%	0	1	0%	2%
Total	31	35	100%	100%	14	15	100%	100%	45	50	100%	100%
Bharuch												
Very High	6	6	13%	13%	6	4	33%	22%	12	10	19%	15%
High	8	32	17%	68%	4	10	22%	56%	12	42	19%	65%
Normal	31	9	67%	19%	7	2	39%	11%	38	11	59%	17%
Less	1	0	2%	0%	0	1	0%	6%	1	1	2%	2%
Very Less	0	0	0%	0%	1	1	6%	6%	1	1	2%	2%
Total	46	47	100%	100%	18	18	100%	100%	64	65	100%	100%
Junagadh												
Very High	17	12	45%	32%	5	2	33%	13%	22	14	42%	26%
High	11	14	29%	37%	3	6	20%	40%	14	20	26%	38%
Normal	10	11	26%	29%	6	4	40%	27%	16	15	30%	28%
Less	0	1	0%	3%	0	2	0%	13%	0	3	0%	6%
Very Less	0	0	0%	0%	1	1	7%	7%	1	1	2%	2%
Total	38	38	100%	100%	15	15	100%	100%	53	53	100%	100%
All Districts												
Very High	4	25	13%	21%	4	11	29%	23%	8	36	18%	21%
High	8	61	26%	51%	1	18	7%	38%	9	79	20%	47%
Normal	18	30	58%	25%	9	14	64%	29%	27	44	60%	26%
Less	1	3	3%	3%	0	3	0%	6%	1	6	2%	4%
Very Less	0	1	0%	1%	0	2	0%	4%	0	3	0%	2%
Total	31	120	100%	100%	14	48	100%	100%	45	168	100%	100%

Table 8.1.37	Reporting & Review: I. No of Reviews; II. Utility of Reviews											
	FHW				MPHW				All			
Ahmedabad	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Very High	7	6	22%	18%	2	3	13%	21%	9	9	19%	19%
High	10	18	31%	55%	3	1	20%	7%	13	19	28%	40%
Normal	12	7	38%	21%	10	10	67%	71%	22	17	47%	36%
Less	3	2	9%	6%	0	0	0%	0%	3	2	6%	4%
Very Less	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Total	32	33	100%	100%	15	14	100%	100%	47	47	100%	100%
Bharuch												
Very High	8	5	17%	11%	5	5	28%	28%	13	10	20%	15%
High	10	35	22%	74%	2	8	11%	44%	12	43	19%	66%
Normal	28	7	61%	15%	9	4	50%	22%	37	11	58%	17%
Less	0	0	0%	0%	1	1	6%	6%	1	1	2%	2%
Very Less	0	0	0%	0%	1	0	6%	0%	1	0	2%	0%
Total	46	47	100%	100%	18	18	100%	100%	64	65	100%	100%
Junagadh												
Very High	12	10	32%	28%	3	3	20%	19%	15	13	29%	25%
High	6	14	16%	39%	2	9	13%	56%	8	23	15%	44%
Normal	19	10	51%	28%	9	2	60%	13%	28	12	54%	23%
Less	0	2	0%	6%	0	2	0%	13%	0	4	0%	8%
Very Less	0	0	0%	0%	1	0	7%	0%	1	0	2%	0%
Total	37	36	100%	100%	15	16	100%	100%	52	52	100%	100%
All Districts												
Very High	27	21	23%	18%	10	11	21%	23%	37	32	23%	20%
High	26	67	23%	58%	7	18	15%	38%	33	85	20%	52%
Normal	59	24	51%	21%	28	16	58%	33%	87	40	53%	24%
Less	3	4	3%	3%	1	3	2%	6%	4	7	2%	4%
Very Less	0	0	0%	0%	2	0	4%	0%	2	0	1%	0%
Total	115	116	100%	100%	48	48	100%	100%	163	164	100%	100%

Table 8.1.38	Monitoring and Review				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Number of reports	6	14.63	0.023	Reject	Significant Difference
Usage of reporting	6	14.13	0.028	Reject	
Number of reviews	6	5.28	0.508	Accept	No significant difference
Usage of review	6	12.47	0.052	Accept	

1. Reports

Overall, 48% of health workers find the number of reports as very high or high whereas only 2% think it as less or very less. In Junagadh, 68% think that number of reports as very high or high while it is 38% in both Ahmedabad and Bharuch. The pattern is similar for FHW and MPHW (Table 8.1.36).

As far as the utility of reports is concerned, 68% health workers think it to be very high or high. This level is 80% in Bharuch, 64% in Junagadh and 58% in Ahmedabad. FHW think the reports to be more useful at 71% compared to 61% in MPHW. Significant difference is observed across districts both in number of reports as well as utility of reports (Table 8.1.38).

2. Reviews

Observation regarding number of review meetings is similar across districts with an overall of 43% health workers finding it high or very high and 53% as normal. In case of utility of reviews, this is found to be 72% in all districts who find it to be very high or high. The level is 81% in Bharuch, 69% Junagadh and 57% in Ahmedabad (Table 8.1.37). No significant difference is observed across districts both in number of reviews and utility of such reviews (Table 8.1.38).

8.1.10 Time Management

With many activities and programs to be planned and implemented, proper management of available time by health workers will increase their productivity in attaining the goals. Perception of health workers regarding time spent on different activities in terms of activity-days and their perception of effective use of time was ascertained is the field survey.

Table 8.1.39	Time Management				
Null Hypothesis	**Degrees of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Time devoted to key activities	12	35.48	0.004	Reject	Significant Difference
Effective use of time	4	14.6	0.006	Reject	

Table 8.1.40	Time Management: Activity-Days											
District	Ahmedabad						Bharuch					
	FHW	MPHW	All	FHW	MPHW	All	FHW	MPHW	All	FHW	MPHW	All
1. Field Visit	159	169	162	49%	57%	51%	170	180	174	51%	51%	51%
2. Health Centre	73	68	72	22%	23%	22%	77	69	74	23%	20%	22%
3. Training/Workshop	10	8	10	3%	3%	3%	15	11	13	4%	3%	4%
4. Meetings	48	31	43	15%	10%	14%	21	25	22	6%	7%	6%
5. Reporting etc	21	19	21	6%	6%	6%	26	33	29	8%	9%	8%
6. Emergency	7	2	6	2%	1%	2%	24	32	27	7%	9%	8%
7. Others	9	1	6	3%	0%	2%	4	3	4	1%	1%	1%
Total	328	297	319	100%	100%	100%	336	353	343	100%	100%	100%
District	Junagadh						All Districts					
1. Field Visit	175	184	178	51%	52%	51%	167	178	171	50%	53%	51%
2. Health Centre	58	52	56	17%	15%	16%	71	64	68	21%	19%	20%
3. Training/Workshop	16	17	17	5%	5%	5%	14	12	13	4%	4%	4%
4. Meetings	33	28	31	10%	8%	9%	33	28	31	10%	8%	9%
5. Reporting etc	27	30	28	8%	9%	8%	25	28	26	7%	8%	8%
6. Emergency	20	21	21	6%	6%	6%	17	21	18	5%	6%	5%
7. Others	13	20	16	4%	6%	5%	8	8	8	2%	2%	2%
Total	343	352	347	100%	100%	100%	335	338	336	100%	100%	100%

Table 8.1.41		Time Management: Effective Use of time								
Districts	Category	Not Possible	Very Less	Normal	Very Good	Total	Not Possible	Very Less	Normal	Very Good	Total
Ahmedabad	FHW	0	3	4	22	29	0%	10%	14%	76%	100%
	MPHW	0	0	2	11	13	0%	0%	15%	85%	100%
	All	0	3	6	33	42	0%	7%	14%	79%	100%
Bharuch	FHW	0	4	21	19	44	0%	9%	48%	43%	100%
	MPHW	0	0	7	11	18	0%	0%	39%	61%	100%
	All	0	4	28	30	62	0%	6%	45%	48%	100%
Junagadh	FHW	3	3	11	19	36	8%	8%	31%	53%	100%
	MPHW	0	2	7	7	16	0%	13%	44%	44%	100%
	All	3	5	18	26	52	6%	10%	35%	50%	100%
All Districts	FHW	0	10	36	60	109	0%	9%	33%	55%	100%
	MPHW	0	2	16	29	47	0%	4%	34%	62%	100%
	All	0	12	52	89	156	0%	8%	33%	57%	100%

1. Activity-Days

Number of days spent on key activities spread over a year was ascertained in survey. The key activities identified were field visits, health centre activity, training/workshop, meetings, emergency medical care or other activities. It is observed that health workers spend 51% of days in field activities, 20% in health centre activities, 9% in meetings, 8% in preparation of reports, 5% in emergency care, 4% in training/workshop and 2% in other activities (Table 8.1.40).

In Ahmedabad, MPHW spend (57%) more time in field activities compared to FHW (49%) whereas FHW spend (15%) more time in training compared to MPHW (10%). In Junagadh and Bharuch 51% time is spent in field activities. 8% of time is spent on emergency medical care in Bharuch. In Junagadh time spent in health centre activities is 16% which is 22% in both Ahmedabad and Bharuch. Significant difference is observed across districts both in number of reports as well as utility of reports (Table 8.1.39).

2. Effective Use of Time

Overall, 57% think that effective use of time is very good. This is highest in Ahmedabad with 79%, and 50% in Junagadh and 48% in Bharuch (Table 8.1.41). Significant difference is observed across districts in this respect.

8.1.11 Financial Powers

Absence of authority to undertake minor activities involving financial implication can have adverse impact on ability to provide proper service delivery. Under NRHM health centres are provided financial powers to undertake minor repairs and maintenance

in health centre and for emergency purchases. However, it is important to understand whether these powers are exercised in practice.

Table 8.1.42	Exercise of Financial Powers				
Null Hypothesis	Degrees of Freedom	χ^2	P	Reject/ Accept	Remarks
Repairs and Maintenance	8	11.53	0.17	Accept	No significant difference
Emergency Purchase	6	23.55	<0.0001	Reject	Significant difference

1. Repairs and Maintenance

32% of all health workers find it easy or very easy to undertake repairs and maintenance work. This is 34% in Ahmedabad, 21% in Bharuch and 35% in Junagadh. In contrast, 37% find this very difficult with 36% in Ahmedabad, 35% in Bharuch and 39% in Junagadh. Thus, substantial proportions of health workers feel that it is not easy to undertake such works (Table 8.1.43). Test of hypothesis show that there is no significant difference across districts in exercising these powers (Table 8.1.42).

2. Emergency Purchases

As regards emergency purchases, 49% think this is possible always or most of the times. This is 44% in Ahmedabad, 42% in Bharuch and 62% in Junagadh. However, 51% think it is difficult or impossible to make emergency purchases. This is highest in 58% in Bharuch, 56% in Ahmedabad and 37% in Junagadh. Here again, it is observed that the powers are not easy to exercise (Table 8.1.44). Significant difference is found across districts in exercising these powers.

Table 8.1.43		**Financial Powers**										
		Repair & Maintenance										
Districts		**Very Easy**	**Easy**	**Normal**	**Difficult**	**Impossible**	**Total**	**Very Easy**	**Easy**	**Normal**	**Difficult**	**Impossible**	**Total**
Ahmedabad	**FHW**	1	11	10	6	7	35	3%	31%	29%	17%	20%	100%
	MPHW	1	2	7	3	2	15	7%	13%	47%	20%	13%	100%
	All	2	13	17	9	9	50	4%	26%	34%	18%	18%	100%
Bharuch	**FHW**	1	9	17	17	3	47	2%	19%	36%	36%	6%	100%
	MPHW	5	7	3	2	1	18	28%	39%	17%	11%	6%	100%
	All	6	16	20	19	4	65	9%	25%	31%	29%	6%	100%
Junagadh	**FHW**	6	7	11	10	3	37	16%	19%	30%	27%	8%	100%
	MPHW	2	1	4	6	1	14	14%	7%	29%	43%	7%	100%
	All	8	8	15	16	4	51	16%	16%	29%	31%	8%	100%
All Districts	**FHW**	1	27	38	33	13	119	1%	23%	32%	28%	11%	100%
	MPHW	1	10	14	11	4	47	2%	21%	30%	23%	9%	100%
	All	2	37	52	44	17	166	1%	22%	31%	27%	10%	100%

Table 8.1.44		Financial Powers									
Districts	Category	Emergency Purchase									
		Always	Mostly	Sometimes	Never	Total	Always	Mostly	Sometimes	Never	Total
Ahmedabad	FHW	11	9	11	4	35	31%	26%	31%	11%	100%
	MPHW	1	1	2	11	15	7%	7%	13%	73%	100%
	All	12	10	13	15	50	24%	20%	26%	30%	100%
Bharuch	FHW	8	8	27	3	46	17%	17%	59%	7%	100%
	MPHW	8	3	6	1	18	44%	17%	33%	6%	100%
	All	16	11	33	4	64	25%	17%	52%	6%	100%
Junagadh	FHW	15	8	11	3	37	41%	22%	30%	8%	100%
	MPHW	4	5	5	0	14	29%	36%	36%	0%	100%
	All	19	13	16	3	51	37%	25%	31%	6%	100%
All Districts	FHW	11	25	49	10	118	9%	21%	42%	8%	100%
	MPHW	1	9	13	12	47	2%	19%	28%	26%	100%
	All	12	34	62	22	165	7%	21%	38%	13%	100%

8.2 Analysis of Survey of Beneficiaries

8.2.1   Analysis of Sample

Table 8.2.1	Sample of Beneficiaries/ Patients					
District	**Female**		**Male**		**Total**	
	No	**%**	**No**	**%**	**No**	**%**
Ahmedabad	70	74%	25	26%	95	100%
Bharuch	63	69%	28	31%	91	100%
Junagadh	59	63%	35	37%	94	100%
All Districts	192	69%	88	31%	280	100%

Beneficiaries and patients who availed primarily Reproductive and Child Health care in the last 2 years were selected on a random basis for field survey. In total there were 280 beneficiaries with a break-up of 69% female and 31% male beneficiaries (Table 8.2.1). Test of hypothesis of sample distribution shows that the male and female distribution of respondents has no significant difference across districts (Table 8.2.2).

Graph 8.3: Sample size of Beneficiaries

Graph 8.3: Sample Distribution
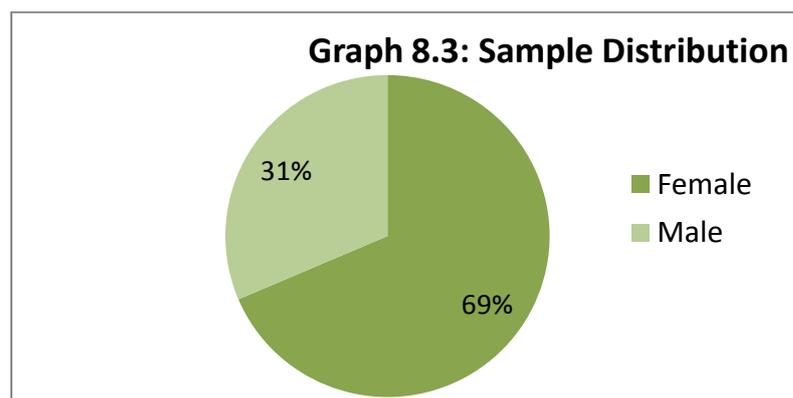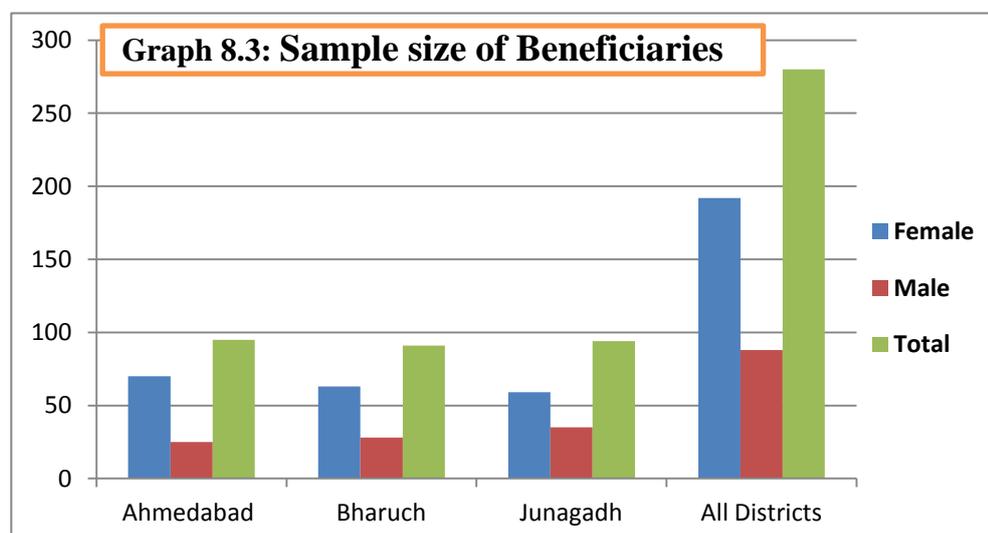
Table 8.2.2	Beneficiary: Survey Sample				
Null Hypothesis	**Degrees of Freedom**	**χ²**	**p**	**Reject/ Accept**	**Remarks**
Sample Distribution	3	2.64	0.27	Accept	No significant difference

8.2.2 Demographic Profile of Beneficiaries

1. Age of Respondents

Age distribution of beneficiaries reveal that majority of beneficiaries from Ahmedabad district were from <25 year age group (34%) while majority of beneficiaries from Bharuch (52%) & Junagadh district (53%) were from 26-35 years of age (Table 8.2.3). There is statistically significant difference found in the age composition of respondents across the districts (Table 8.2.5). Similarly, significant statistical difference is observed in the age of male and female (X^2=40; p=0.003). Female respondents were found to be younger in comparison to male counterparts. 33% female are < 25 years compared to 15% males. Thus, few men especially in reproductive active age of < 35 years avail reproductive health care.

Table 8.2.3	Age Profile Beneficiaries/ Patients											
Age	**Ahmedabad**						**Bharuch**					
	F	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**
<25	27	4	31	40%	16%	34%	20	4	24	29%	18%	26%
26-35	20	8	28	30%	32%	30%	38	9	47	55%	41%	52%
36-45	13	8	21	19%	32%	23%	4	9	13	6%	41%	14%
>45	7	5	12	10%	20%	13%	7	0	7	10%	0%	8%
Total	67	25	92	100%	100%	100%	69	22	91	100%	100%	100%
	Junagadh						**All Districts**					
<25	18	4	22	31%	11%	23%	65	12	77	33%	15%	28%
26-35	28	22	50	47%	63%	53%	86	39	125	44%	48%	45%
36-45	7	4	11	12%	11%	12%	24	21	45	12%	26%	16%
>45	6	5	11	10%	14%	12%	20	10	30	10%	12%	11%
Total	59	35	94	100%	100%	100%	195	82	277	100%	100%	100%

Graph 8.4: **Age Profile**
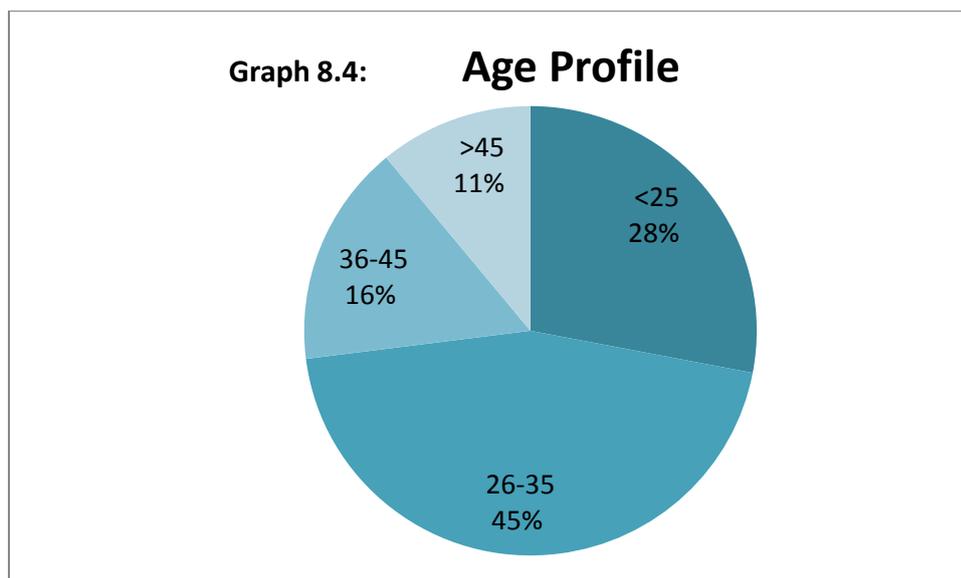
Table 8.2.4	Family Size of Beneficiaries							
	Ahmedabad		Bharuch		Junagadh		All Districts	
	No	%	No	%	No	%	No	%
Up to 2	5	5%	0	0%	2	2%	7	3%
3-4	30	32%	26	29%	23	24%	79	29%
5-6	40	43%	50	56%	56	60%	146	53%
>6	19	20%	13	15%	13	14%	45	16%
Total	94	100%	89	100%	94	100%	277	100%

2. Family Size

Analysis of number of members in families of respondents reveals that 3% have up to 2, 29% have 3 to 4, 53% have 5 to 6 and 16% have more than 6 members (Table 8.2.4). Significant variation is observed across districts. It can be seen that Ahmedabad has a flatter distribution of beneficiaries compared to Bharuch and Junagadh. However, no statistically significant difference is found in the family size of respondents across districts (Table 8.2.5).

Graph 8.5: Family Size

- Up to 2: 3%
- 3-4: 29%
- 5-6: 52%
- >6: 16%
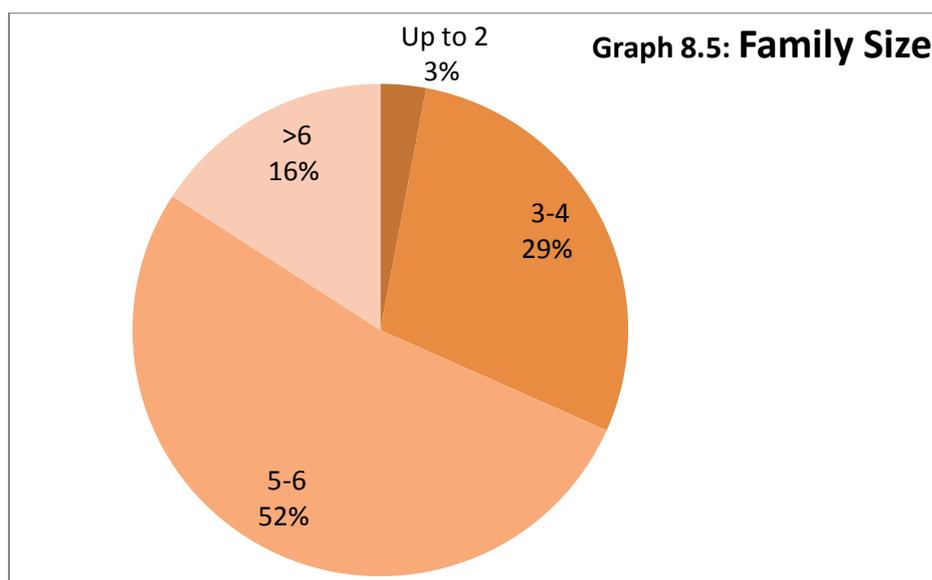
8.2.3 Socio-Economic Profile of Beneficiaries

1. Primary Occupation

Assessment of occupation of beneficiaries shows that 36% do household activities, 9% business, 6% services, 34% work as labourers and 14% as agricultural workers (Table 8.2.6). The same is 48%, 7%, 5%, 28%, and 11% for female and 12%, 13%, 9%, 45% and 20% for male respondents. After household work, most of women do labour work followed by agriculture. Men are mostly engaged in labour work followed by agricultural labour. No statistically significant difference is found in the primary occupation of beneficiaries in the survey (Table 8.2.5).

Table 8.2.5	Socio-Economic and Demographic characteristics				
Null Hypothesis	**Degrees of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Age profile	6	13.7	0.034	Reject	Significant Difference
Family size of respondents	6	6.13	0.189	Accept	No significant difference
Primary occupation	10	10.5	0.4	Accept	
Monthly Income	4	19.38	0.0007	Reject	Significant Difference
Poverty	2	46.48	<0.0001	Reject	
Literacy	8	63.03	<0.0001	Reject	
Caste	6	42.97	<0.0001	Reject	

Graph 8.6: Occupation

- Household — 36%
- Business — 9%
- Service — 6%
- Labour — 34%
- Agricultural workers — 14%
- Others — 1%

Graph 8.7: Monthly Income

- < 3000 — 43%
- 3000-6000 — 33%
- 6000-10000 — 18%
- 10000-20000 — 3%
- >20000 — 3%
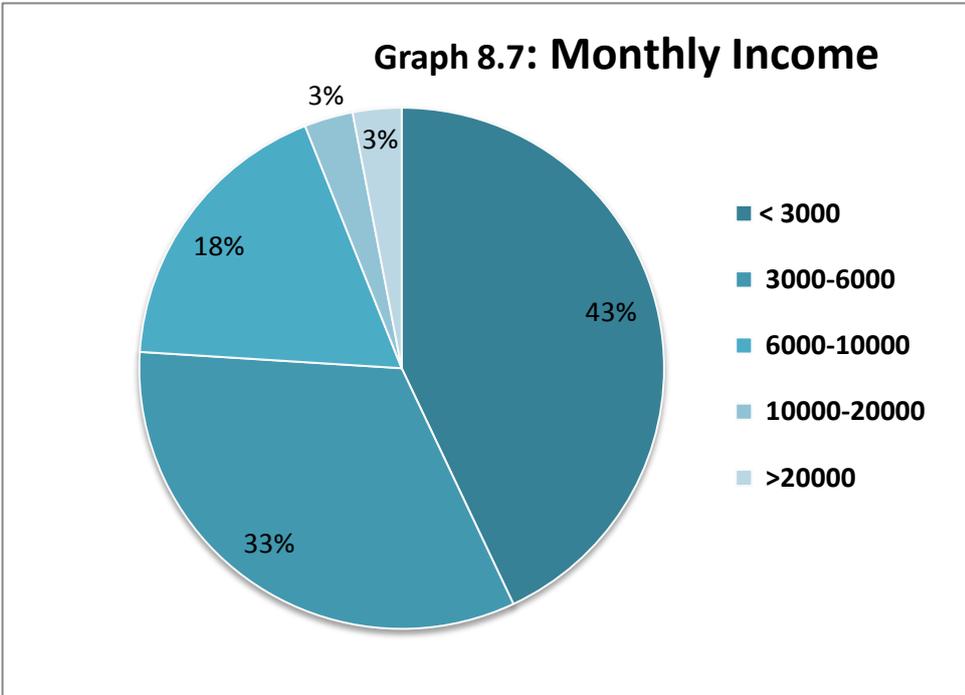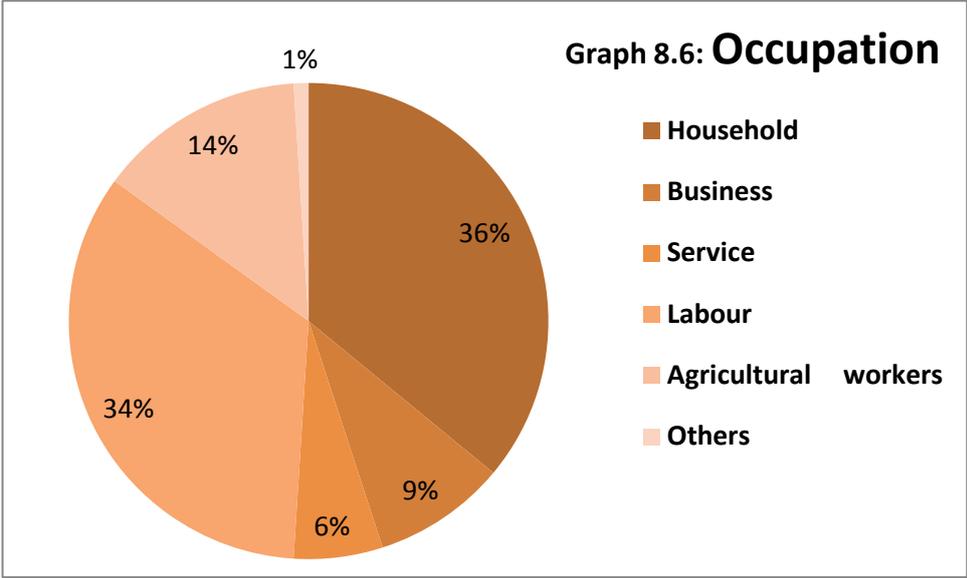
Table 8.2.6	Primary Occupation of Beneficiaries											
District	Ahmedabad						Bharuch					
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
1. Household	29	2	31	45%	8%	34%	32	1	33	51%	4%	37%
2. Business	4	2	6	6%	8%	7%	4	4	8	6%	15%	9%
3. Service	2	2	4	3%	8%	4%	2	1	3	3%	4%	3%
4. Labour	24	14	38	37%	56%	42%	18	11	29	29%	42%	33%
5. Agricultural workers	5	5	10	8%	20%	11%	7	8	15	11%	31%	17%
6. Others	1	0	1	2%	0%	1%	0	1	1	0%	4%	1%
Total	65	25	90	100%	100%	100%	63	26	89	100%	100%	100%
District	Junagadh						All Districts					
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
1. Household	28	7	35	47%	20%	37%	89	10	99	48%	12%	36%
2. Business	6	5	11	10%	14%	12%	14	11	25	7%	13%	9%
3. Service	5	5	10	8%	14%	11%	9	8	17	5%	9%	6%
4. Labour	11	14	25	19%	40%	27%	53	39	92	28%	45%	34%
5. Agricultural workers	8	4	12	14%	11%	13%	20	17	37	11%	20%	14%
6. Others	1	0	1	2%	0%	1%	2	1	3	1%	1%	1%
Total	59	35	94	100%	100%	100%	187	86	273	100%	100%	100%

Table 8.2.7	Monthly Income of Beneficiaries											
District	**Ahmedabad**						**Bharuch**					
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
< 3000	30	17	47	54%	71%	59%	28	9	37	45%	33%	42%
3000-6000	20	5	25	36%	21%	31%	23	7	30	37%	26%	34%
6000-10000	6	2	8	11%	8%	10%	5	7	12	8%	26%	13%
10000-20000	0	0	0	0%	0%	0%	2	3	5	3%	11%	6%
>20000	0	0	0	0%	0%	0%	4	1	5	6%	4%	6%
Total	56	24	80	100%	100%	100%	62	27	89	100%	100%	100%
District	**Junagadh**						**All Districts**					
< 3000	15	14	29	26%	41%	32%	73	40	113	41%	47%	43%
3000-6000	16	14	30	28%	41%	33%	59	26	85	34%	31%	33%
6000-10000	21	6	27	36%	18%	29%	32	15	47	18%	18%	18%
10000-20000	3	0	3	5%	0%	3%	5	3	8	3%	4%	3%
>20000	3	0	3	5%	0%	3%	7	1	8	4%	1%	3%
Total	58	34	92	100%	100%	100%	176	85	261	100%	100%	100%

Table 8.2.8	Poverty Level of Beneficiaries											
District	**Ahmedabad**						**Bharuch**					
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
BPL	54	15	69	89%	71%	84%	22	14	36	37%	54%	42%
Non BPL	7	6	13	11%	29%	16%	38	12	50	63%	46%	58%
Total	61	21	82	100%	100%	100%	60	26	86	100%	100%	100%
District	**Junagadh**						**All Districts**					
BPL	18	15	33	32%	44%	36%	94	44	138	53%	54%	53%
Non BPL	39	19	58	68%	56%	64%	84	37	121	47%	46%	47%
Total	57	34	91	100%	100%	100%	178	81	259	100%	100%	100%

Table 8.2.9	Literacy Level of Beneficiaries											
District	**Ahmedabad**						**Bharuch**					
	Female	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
1. Non-Literate	38	3	41	59%	13%	47%	11	1	12	17%	4%	13%
2. Primary	23	14	37	36%	58%	42%	18	13	31	29%	46%	34%
3. Secondary	2	3	5	3%	13%	6%	27	13	40	43%	46%	44%
4. Graduate	0	4	4	0%	17%	5%	6	1	7	10%	4%	8%
5. Post-Graduate	1	0	1	2%	0%	1%	1	0	1	2%	0%	1%
Total	64	24	88	100%	100%	100%	63	28	91	100%	100%	100%
District	**Junagadh**						**All Districts**					
	Female	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
1. Non-Literate	8	1	9	14%	3%	10%	57	5	62	31%	6%	23%
2. Primary	20	15	35	34%	44%	38%	61	42	103	33%	49%	38%
3. Secondary	22	13	35	37%	38%	38%	51	29	80	27%	34%	29%
4. Graduate	8	4	12	14%	12%	13%	14	9	23	8%	10%	8%
5. Post-Graduate	1	1	2	2%	3%	2%	3	1	4	2%	1%	1%
Total	59	34	93	100%	100%	100%	186	86	272	100%	100%	100%

Table 8.2.10	Caste Category of Respondents											
District	**Ahmedabad**						**Bharuch**					
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
1. Scheduled Caste	11	5	16	20%	22%	20%	10	1	11	16%	4%	12%
2. Scheduled Tribe	4	0	4	7%	0%	5%	13	11	24	21%	39%	27%
3. SEBC	32	13	45	57%	57%	57%	14	4	18	23%	14%	20%
4. Others	9	5	14	16%	22%	18%	24	12	36	39%	43%	40%
Total	56	23	79	100%	100%	100%	61	28	89	100%	100%	100%
District	**Junagadh**						**All Districts**					
District	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
1. Scheduled Caste	12	8	20	21%	24%	22%	33	14	47	19%	17%	18%
2. Scheduled Tribe	9	3	12	16%	9%	13%	26	14	40	15%	17%	15%
3. SEBC	11	13	24	19%	39%	26%	57	30	87	33%	36%	34%
4. Others	26	9	35	45%	27%	38%	59	26	85	34%	31%	33%
Total	58	33	91	100%	100%	100%	175	84	259	100%	100%	100%

2. Monthly Income

Majority of people (43%) have a monthly income of less than Rs. 3000 while 33% have Rs. 3000 to 6000 (Table 8.2.7). Only 6% have more than Rs 10000 as monthly income. In Ahmedabad, 90% of people have income below Rs. 6000 which means most of beneficiaries are from low income groups. In Bharuch and Junagadh, this is 76% and 65%, which shows that sizeable proportion of beneficiaries is from non-low income group. Particularly in Bharuch, 15% of male beneficiaries are from income above Rs 10000. Statistically significant difference is found in the monthly income of beneficiaries in the survey (Table 8.2.5). An analysis income distribution shows that female respondents have higher income than their male counterpart in Ahmedabad and Junagadh.

This could be due to various factors like urbanization, availability of private health care and awareness among low income group. This has implication for policy and management of health care delivery in terms of targeting of services, awareness promotion and availability of public health care in urban areas which require further study and analysis.

3. Poverty Level

In all, 53% of beneficiaries are from below poverty line category, 84% in Ahmedabad, 42% in Bharuch and 36% in Junagadh. This is consistent with observation in monthly income of respondents discussed before. More non-BPL people avail health care services in Bharuch and Junagadh compared to Ahmedabad. Similar to monthly income, this could be because people with paying capacity avail private health care since they are easily available in urban districts like Ahmedabad. Minor variation is observed across male and female in these districts (Table 8.2.8). Test of hypothesis shows that poverty level of beneficiaries is significantly different across districts (Table 8.2.5).

Graph 8.8: **Poverty**

47%

53%

■ BPL

■ Non BPL

Graph 8.9: **Literacy**

- ■ Non-Literate
- ■ Primary
- ■ Secondary
- ■ Graduate
- ■ Post-Graduate
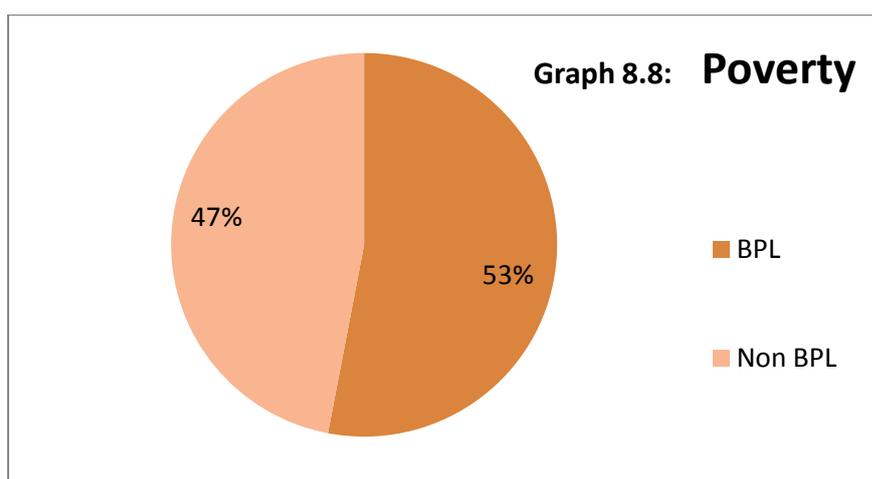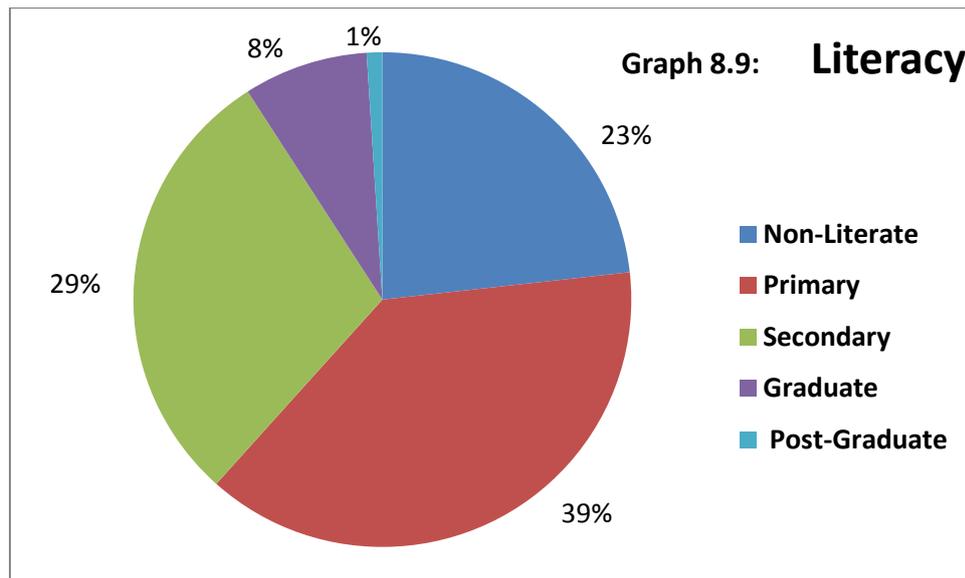
4. Literacy Level

Profile analysis of literacy level of beneficiaries shows that 23% were non-literate, 38% primary school educated, 29% secondary school educated, 8% graduates and 1% post-graduates. Across districts it can be seen that in Ahmedabad, 47% are non-literate and 42% are primary school educated whereas in Bharuch it is 13% and 34% and in Junagadh it is 10% and 38%. Analysis between genders shows that female are 31% non-literate compared to 6% among male (Table 8.2.9). Statistically significant difference is found in literacy level of beneficiaries in the survey (Table 8.2.5).

Thus like income and poverty, literacy level also indicates variation across districts requiring further study to understand the inter-relationships and mutuality which can help in improving delivery of public health care.

5. Caste Group

As districts selected for survey are from different geographical and demographic regions of Gujarat, analysis of caste groups of individual districts is undertaken (Table 8.2.10). Taken together they can provide an understanding of the State as a whole. It is seen that in all, 18% belong to Scheduled Castes, 15% to Scheduled Tribes, 34% to Socially and Economically Backward and 33% to other castes. The proportion in percentage in Ahmedabad is 20, 5, 57 and 18, Bharuch is 12, 27, 20 and 40 and Junagadh is 22, 13, 26 and 38. Statistically significant difference is found in the composition of castes of beneficiaries across the districts (Table 8.2.5).

Graph 8.10: Caste

- 18% Scheduled Caste
- 15% Scheduled Tribe
- 34% SEBC
- 33% Others
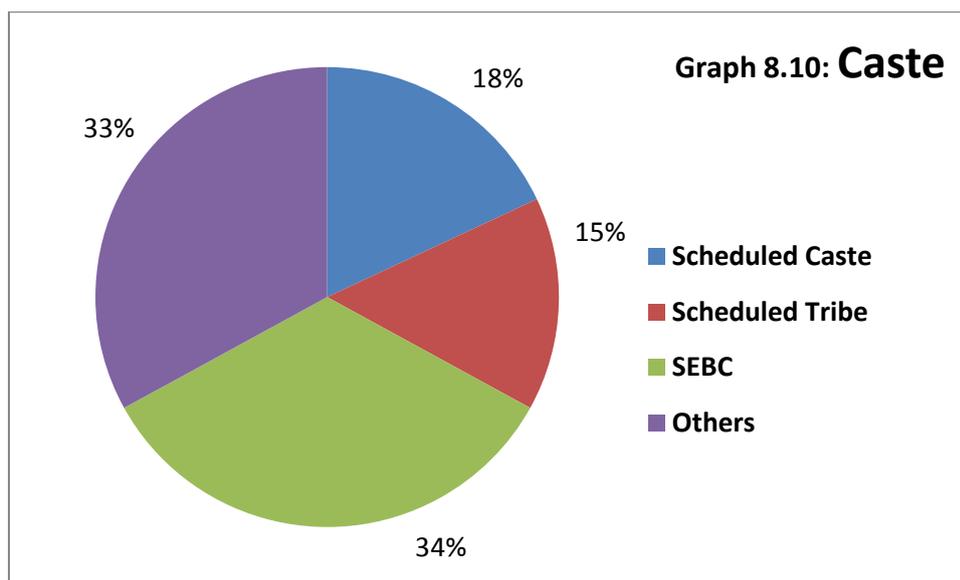
8.2.4 Awareness Programs

1. Participation in Awareness Programs

Awareness of public health care issues is ascertained by assessing type and frequency of programs attended and its utility. It is seen that 85% of respondents have participated in awareness programs, 88% for female and 80% for male. Proportion of participation is 79% in Ahmedabad, 87% in Bharuch and 89% in Junagadh (Table 8.2.11). No statistically significant difference is found in participation of beneficiaries in awareness programs (Table 8.2.11).

Of those who participated in awareness programs, largest proportion of respondents, 31% participated in immunization programs, 20% in family planning, 17% in communicable disease, 15% in maternal health, 13% in nutrition and 4% in other programs. In every district, participation was highest in immunization followed by family planning programs in case of female. In case of male, largest proportion of respondents attended awareness programs on communicable diseases followed by immunization. Even among female, maternal health programs occupy 3rd or 4th slot in priority. No statistically significant difference is found in the type of awareness programs in which beneficiaries participated (Table 8.2.14).

Table 8.2.11	Participation in Awareness Programs										
District	**Ahmedabad**						**Bharuch**					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Yes	55	20	75	79%	80%	79%	57	22	79	90%	79%	87%
No	15	5	20	21%	20%	21%	6	6	12	10%	21%	13%
Total	70	25	95	100%	100%	100%	63	28	91	100%	100%	100%
	Junagadh						**All Districts**					
Yes	56	28	84	95%	80%	89%	168	70	238	88%	80%	85%
No	3	7	10	5%	20%	11%	24	18	42	13%	20%	15%
Total	59	35	94	100%	100%	100%	192	88	280	100%	100%	100%
If Yes, type and frequency of programs participated												
	Ahmedabad						**Bharuch**					
Program	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Immunization	46	7	53	41%	22%	37%	46	10	56	36%	22%	33%
Family Planning	23	6	29	21%	19%	20%	24	11	35	19%	24%	20%
Communi diseases	11	8	19	10%	25%	13%	16	12	28	13%	27%	16%
Maternal Health	20	4	24	18%	13%	17%	14	4	18	11%	9%	10%
Nutrition	9	1	10	8%	3%	7%	23	6	29	18%	13%	17%
Others	2	6	8	2%	19%	6%	4	2	6	3%	4%	3%
Total	111	32	143	100%	100%	100%	127	45	172	100%	100%	100%
	Junagadh						**All Districts**					
Immunization	39	18	57	27%	23%	26%	131	35	166	34%	23%	31%
Family Planning	31	14	45	21%	18%	20%	78	31	109	20%	20%	20%
Comm. diseases	23	22	45	16%	29%	20%	50	42	92	13%	27%	17%
Maternal Health	23	14	37	16%	18%	17%	57	22	79	15%	14%	15%
Nutrition	24	5	29	17%	6%	13%	56	12	68	15%	8%	13%
Others	5	4	9	3%	5%	4%	11	12	23	3%	8%	4%
Total	145	77	222	100%	100%	100%	383	154	537	100%	100%	100%

Table 8.2.12	Utility of Awareness Programs											
	Ahmedabad						Bharuch					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Bad	0	0	0	0%	0%	0%	0	0	0	0%	0%	0%
Poor	1	2	3	2%	10%	4%	0	0	0	0%	0%	0%
Normal	10	7	17	18%	33%	22%	2	6	8	3%	21%	9%
Good	44	11	55	80%	52%	72%	43	17	60	69%	61%	67%
Very Good	0	1	1	0%	5%	1%	17	5	22	27%	18%	24%
Total	55	21	76	100%	100%	100%	62	28	90	100%	100%	100%
	Junagadh						All Districts					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Bad	0	0	0	0%	0%	0%	0	0	0	0%	0%	0%
Poor	2	2	4	3%	6%	4%	3	4	7	2%	5%	3%
Normal	11	4	15	19%	12%	16%	23	17	40	13%	21%	16%
Good	27	24	51	47%	73%	56%	114	52	166	65%	63%	65%
Very Good	18	3	21	31%	9%	23%	35	9	44	20%	11%	17%
Total	58	33	91	100%	100%	100%	175	82	257	100%	100%	100%

Table 8.2.13	Visit of Health Personnel: Category											
District	Ahmedabad						Bharuch					
Category	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
FHW	53	21	74	24%	26%	24%	44	13	57	25%	18%	23%
MPHW	35	8	43	16%	10%	14%	28	18	46	16%	25%	19%
ASHA	61	16	77	28%	20%	25%	50	22	72	29%	31%	29%
Angan wadi	20	11	31	9%	13%	10%	41	8	49	24%	11%	20%
NGOs	50	20	70	23%	24%	23%	4	1	5	2%	1%	2%
Doctors	2	4	6	1%	5%	2%	5	9	14	3%	13%	6%
Others	0	2	2	0%	2%	1%	2	0	2	1%	0%	1%
Total	221	82	303	100%	100%	100%	174	71	245	100%	100%	100%
District	Junagadh						All Districts					
FHW	43	19	62	29%	24%	27%	140	53	193	26%	23%	25%
MPHW	23	13	36	15%	17%	16%	86	39	125	16%	17%	16%
ASHA	41	24	65	27%	31%	29%	152	62	214	28%	27%	28%
Angan wadi	36	20	56	24%	26%	25%	97	39	136	18%	17%	18%
NGOs	2	0	2	1%	0%	1%	56	21	77	10%	9%	10%
Doctors	4	1	5	3%	1%	2%	11	14	25	2%	6%	3%
Others	1	1	2	1%	1%	1%	3	3	6	1%	1%	1%
Total	150	78	228	100%	100%	100%	545	231	776	100%	100%	100%

Table 8.2.14	Awareness Programs				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Participation in awareness programs	2	4.36	0.11	Accept	No significant difference
Type of awareness program participated	10	16.46	0.087	Accept	
Utility of awareness programs	4	10.3	0.035	Reject	Significant Difference
Type of health personnel who visited	12	112.9	<0.0001	Reject	

2. Utility of Awareness Programs

Assessment of utility of programs shows that in all 82% find these programs good or very good, which is 73% in Ahmedabad, 91% in Bharuch and 89% in Junagadh. Utility is good or very good in case of 85% female and 74% for male respondents. Only 57% male in Ahmedabad found it good or very good (Table 8.2.12). Test of hypothesis shows statistically significant difference is found in the utility of awareness programs across districts (Table 8.2.14).

3. Visit of Health Personnel: Category

Visit of health care personnel to beneficiaries' residence is a key component of awareness creation activities Analysis of data across districts shows that ASHA workers visited the respondents in 28% cases, FHW in 25%, Anganwadi workers in 18%, MPHW in 16%, NGOs in 10% and Doctors in 3% cases (Table 8.2.13). In Ahmedabad, NGO made visits in 23% cases as against only 2% and 1% in Bharuch and Junagadh. Thus the role of NGOs in awareness creation varies depending on profile of district. Statistically significant difference is found in the category of health personnel who visited the respondents across districts (Table 8.2.14). In is found that ASHA service which is a product of NRHM has made good penetration in providing health care services in rural areas.

8.2.5 Health Care Seeking Behaviour

Behavioural aspects of beneficiaries in seeking health care services have tremendous impact on health care delivery. This comprises of guidance seeking and decision making behaviour, selection of health care providers and purpose of visit to health centre.

1. Guidance Seeking Behaviour: Influencers

Assessment of guidance seeking behaviour of respondents across districts show that, 32% seek guidance from health workers, 20% from spouses, 20% from ASHA workers, 18% from parents and 6% from friends and relatives. However, in Ahmedabad highest of 31% seek guidance from spouse and 28% from parents whereas in Bharuch and Junagadh highest proportion approach health workers followed by ASHA workers. Interestingly, across the districts 25% female seek guidance of husband compared to 8% of male seeking guidance of wife (Table 8.2.16). Significant variation is observed in guidance seeking behaviour across districts (Table 8.2.15).

2. Decision Making Behaviour

Guidance seeking is followed by decision making in availing particular health care service. It is found that in 38% cases decision is taken by respondents themselves, 23% cases by spouse, 13% by parents, 13% by health workers, 8% by ASHA workers and 4% by friends and relatives (Table 8.2.17). Thus in contrast to guidance seeking, in actual decision making dependence is more on near and dear rather than health workers. Own self, spouse, parents or friends/relatives decide in 88% cases and health workers and ASHA in only 12% cases in Ahmedabad. The same is 75% and 25% in Bharuch and 64% and 36% in Junagadh. In case of 28% of female, decision is made by husband compared to 12% cases where wife make's decision for male. Test of hypothesis shows significant variation in decision making behaviour across districts (Table 8.2.15).

Table 8.2.15	Health Care Seeking Behaviour				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Persons influencing health related issues	10	99.23	<0.001	Reject	Significant Difference
Person who takes health related decision	12	63.56	<0.001	Reject	
Previous visit to private hospital	3	24.9	<0.001	Reject	
Type of health practitioner consulted	10	36.4	<0.001	Reject	
Purpose of visit to health centre	10	2.5	0.96	Accept	No significant difference

Table 8.2.16	Health Seeking Behaviour: Influencers											
	Ahmedabad						Bharuch					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Husband/ Wife	57	4	61	35%	12%	31%	10	6	16	11%	15%	12%
Parents	47	8	55	28%	24%	28%	10	3	13	11%	8%	10%
Friend/ Relative	16	8	24	10%	24%	12%	2	0	2	2%	0%	2%
Health Workers	22	7	29	13%	21%	15%	35	19	54	38%	48%	41%
ASHA	18	4	22	11%	12%	11%	29	9	38	32%	23%	29%
Others	5	3	8	3%	9%	4%	5	3	8	5%	8%	6%
Total	165	34	199	100%	100%	100%	91	40	131	100%	100%	100%
	Junagadh						All Districts					
Husband/ Wife	19	1	20	20%	2%	13%	86	11	97	25%	8%	20%
Parents	10	11	21	11%	18%	14%	67	22	89	19%	16%	18%
Friend/ Relative	1	3	4	1%	5%	3%	19	11	30	5%	8%	6%
Health Workers	42	28	70	44%	47%	45%	99	54	153	28%	40%	32%
ASHA	21	17	38	22%	28%	25%	68	30	98	19%	22%	20%
Others	2	0	2	2%	0%	1%	12	6	18	3%	4%	4%
Total	95	60	155	100%	100%	100%	351	134	485	100%	100%	100%

Table 8.2.17	Health Seeking Behaviour: Decision Makers											
Category	Ahmedabad						Bharuch					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Husband/wife	52	3	55	36%	9%	31%	15	9	24	18%	24%	20%
Parents	35	4	39	24%	12%	22%	7	1	8	8%	3%	7%
Friend/Relative	7	2	9	5%	6%	5%	2	3	5	2%	8%	4%
Health Workers	8	2	10	6%	6%	6%	8	6	14	10%	16%	11%
ASHA	3	2	5	2%	6%	3%	14	3	17	17%	8%	14%
Others	0	0	0	0%	0%	0%	0	0	0	0%	0%	0%
Total	143	33	176	100%	100%	100%	84	38	122	100%	100%	100%
	Junagadh						All Districts					
Own self	35	23	58	37%	46%	40%	111	59	170	35%	49%	38%
Husband/wife	22	2	24	23%	4%	17%	89	14	103	28%	12%	23%
Parents	3	7	10	3%	14%	7%	45	12	57	14%	10%	13%
Friend/Relative	3	0	3	3%	0%	2%	12	5	17	4%	4%	4%
Health Workers	19	15	34	20%	30%	24%	35	23	58	11%	19%	13%
ASHA	12	3	15	13%	6%	10%	29	8	37	9%	7%	8%
Others	0	0	0	0%	0%	0%	0	0	0	0%	0%	0%
Total	94	50	144	100%	100%	100%	321	121	442	100%	100%	100%

Diagram 8.2 : Beneficiries: Disitance Chart of Influencers/ Decision Makers

NGO

Private Medical Practitioners

Traditional Healers

ASHA

Parents

FHW/ MPH

Spouse

Beneficiaries

Medical Officers

Friends/

Relatives

Anganwadi Workers

Referral Hospitals
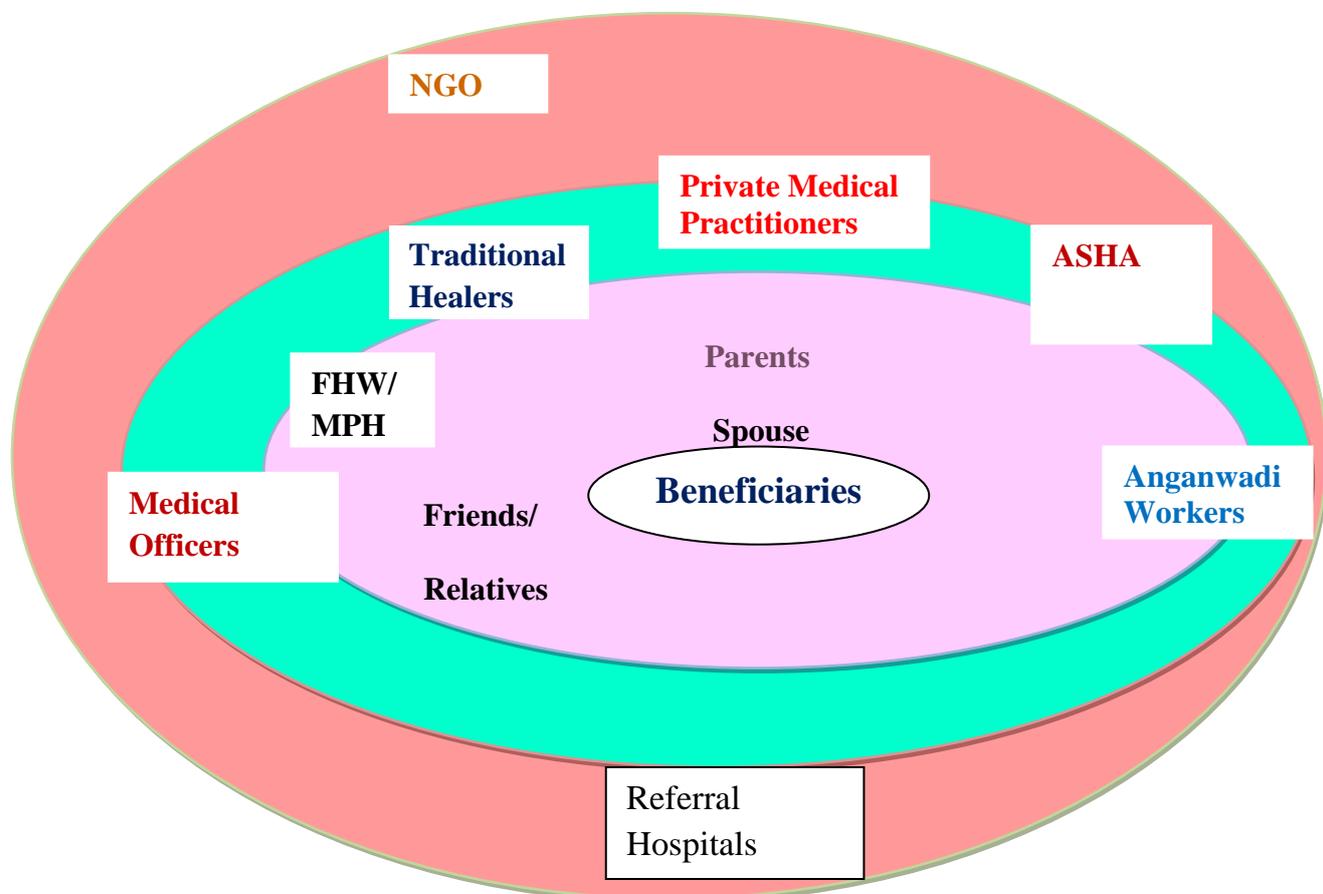
Table 8.2.18	Health Seeking Behaviour: Services Providers											
a. **Visit to Health Centre**	**Ahmedabad**						**Bharuch**					
	Female	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
Yes	63	20	83	90%	80%	87%	60	28	88	95%	100%	97%
No	7	5	12	10%	20%	13%	3	0	3	5%	0%	3%
Total	70	25	95	100%	100%	100%	63	28	91	100%	100%	100%
b. **Previous visit to private doctor**												
Yes	56	23	79	81%	92%	84%	32	14	46	51%	50%	51%
No	13	2	15	19%	8%	16%	31	14	45	49%	50%	49%
Total	69	25	94	100%	100%	100%	63	28	91	100%	100%	100%
If yes, type of health practitioner												
Village Doctor	1	1	2	2%	4%	2%	16	5	21	33%	29%	32%
Ayurvedic Doctor	8	4	12	14%	17%	15%	2	2	4	4%	12%	6%
Qualified Allopath	29	15	44	50%	65%	54%	13	2	15	27%	12%	23%
Nurses	20	3	23	34%	13%	28%	15	8	23	31%	47%	35%
Traditional Healer	0	0	0	0%	0%	0%	1	0	1	2%	0%	2%
Others	0	0	0	0%	0%	0%	1	0	1	2%	0%	2%
Total	58	23	81	100%	100%	100%	48	17	65	100%	100%	100%
	Junagadh						**All Districts**					
Yes	52	31	83	88%	89%	88%	175	79	254	91%	90%	91%
No	7	4	11	12%	11%	12%	17	9	26	9%	10%	9%
Total	59	35	94	100%	100%	100%	192	88	280	100%	100%	100%
b. Previous visit to private doctor												
Yes	37	18	55	63%	51%	59%	125	55	180	65%	63%	65%
No	22	17	39	37%	49%	41%	66	33	99	35%	38%	35%
Total	59	35	94	100%	100%	100%	191	88	279	100%	100%	100%
If yes, type of health practitioner												
Village Doctor	12	7	19	29%	37%	32%	29	13	42	20%	22%	20%
Ayurvedic Doctor	3	0	3	7%	0%	5%	13	6	19	9%	10%	9%
Qualified Allopath	13	9	22	32%	47%	37%	55	26	81	37%	44%	39%
Nurses	11	2	13	27%	11%	22%	46	13	59	31%	22%	29%
Traditional Healer	2	1	3	5%	5%	5%	3	1	4	2%	2%	2%
Others	0	0	0	0%	0%	0%	1	0	1	1%	0%	0%
Total	41	19	60	100%	100%	100%	147	59	206	100%	100%	100%

Table 8.2.19	Health Seeking Behaviour: Purpose of visit to health centre											
District	**Ahmedabad**						**Bharuch**					
	Female	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
Immunization	29	8	37	32%	24%	30%	32	12	44	30%	27%	29%
Family Planning	16	9	25	17%	27%	20%	21	9	30	19%	20%	20%
Communicable diseases	27	7	34	29%	21%	27%	31	9	40	29%	20%	26%
Maternal Health	14	3	17	15%	9%	14%	14	3	17	13%	7%	11%
Nutrition	4	3	7	4%	9%	6%	10	11	21	9%	24%	14%
Others	2	3	5	2%	9%	4%	0	1	1	0%	2%	1%
Total	92	33	125	100%	100%	100%	108	45	153	100%	100%	100%
	Junagadh						**All Districts**					
Immunization	26	13	39	26%	25%	26%	87	33	120	29%	26%	28%
Family Planning	24	10	34	24%	20%	23%	61	28	89	20%	22%	21%
Communicable Diseases	20	21	41	20%	41%	27%	78	37	115	26%	29%	27%
Maternal Health	12	5	17	12%	10%	11%	40	11	51	13%	9%	12%
Nutrition	16	2	18	16%	4%	12%	30	16	46	10%	12%	11%
Others	1	0	1	1%	0%	1%	3	4	7	1%	3%	2%
Total	99	51	150	100%	100%	100%	299	129	428	100%	100%	100%

3. Private Service Providers: Previous Visit and Type

Analysis of survey shows that 65% of beneficiaries who visited health centres in last two years had availed health care service from private service providers before approaching PHC. This was a high of 84% in Ahmedabad, 51% in Bharuch and 59% in Junagadh. The share was 65% in case of Female and 63% for Male (Table 8.2.18). Statistically significant difference is observed in respect of respondents having visited other service providers before visiting PHC across districts (Table 8.2.15).

Analysis of type of private service providers chosen shows that 39% respondents visited qualified allopath, 29% nurses, 20% village doctors, 9% Ayurvedic doctors and 2% traditional healers. In Ahmedabad, only 2% visited village doctors whereas 54% visited qualified allopath. Share of beneficiaries visiting village doctors is higher at 32% in Junagadh and Bharuch (Table 8.1.18). Statistically significant difference is observed across districts in the choosing the type of health practitioners.

4. Nature and Purpose of Visit to Health Centre

Assessment of purpose of visit to health centre shows that 28% visited for immunization, 27% for communicable diseases, 21% for family planning, 12% for maternal health and 11% for nutrition. Same pattern is observed in all the three districts in both the genders. What is significant is that maternal health falls in 4th and nutrition in 5th priority even among female for visiting health centres (Table 8.2.19). No statistically significant difference is found in the purpose of visit to health centre by beneficiaries (Table 8.2.15).

Table 8.2.20		Infrastructure: Travel to health centre											
		Transport						Road					
District	Level	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
Ahmedabad	Bad	5	0	5	7%	0%	5%	15	6	21	21%	24%	22%
	Poor	2	3	5	3%	12%	5%	12	3	15	17%	12%	16%
	Normal	31	9	40	44%	36%	42%	13	1	14	19%	4%	15%
	Good	29	11	40	41%	44%	42%	28	13	41	40%	52%	43%
	Very Good	3	2	5	4%	8%	5%	2	2	4	3%	8%	4%
	Total	70	25	95	100%	100%	100%	70	25	95	100%	100%	100%
Bharuch	Bad	1	0	1	2%	0%	1%	4	1	5	6%	4%	5%
	Poor	7	1	8	11%	4%	9%	2	1	3	3%	4%	3%
	Normal	6	1	7	10%	4%	8%	12	2	14	19%	7%	15%
	Good	43	13	56	69%	46%	62%	42	11	53	67%	39%	58%
	Very Good	5	13	18	8%	46%	20%	3	13	16	5%	46%	18%
	Total	62	28	90	100%	100%	100%	63	28	91	100%	100%	100%
Junagadh	Bad	0	0	0	0%	0%	0%	7	2	9	12%	6%	10%
	Poor	8	8	16	14%	23%	17%	10	8	18	17%	23%	19%
	Normal	17	10	27	29%	29%	29%	10	13	23	17%	37%	24%
	Good	23	16	39	39%	46%	41%	19	11	30	32%	31%	32%
	Very Good	11	1	12	19%	3%	13%	13	1	14	22%	3%	15%
	Total	59	35	94	100%	100%	100%	59	35	94	100%	100%	100%
All Districts	Bad	6	0	6	3%	0%	2%	26	9	35	14%	10%	13%
	Poor	17	12	29	9%	14%	10%	24	12	36	13%	14%	13%
	Normal	54	20	74	28%	23%	27%	35	16	51	18%	18%	18%
	Good	95	40	135	50%	45%	48%	89	35	124	46%	40%	44%
	Very Good	19	16	35	10%	18%	13%	18	16	34	9%	18%	12%
	Total	191	88	279	100%	100%	100%	192	88	280	100%	100%	100%

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Table 8.2.21									Facilities in Health Centre									
District	**Ahmedabad**									**Bharuch**								
No	**a. Condition of HC**			**b. Cleanliness**			**c. Water, toilet etc**			**a. Condition of HC**			**b. Cleanliness**			**c. Water, toilet etc**		
	F	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**
Bad	0	3	3	0	1	1	1	0	1	0	0	0	0	0	0	0	1	1
Poor	2	1	3	4	2	6	6	2	8	0	0	0	1	1	2	0	1	1
Normal	29	12	41	28	10	38	40	15	55	3	1	4	4	0	4	14	1	15
Good	36	9	45	37	12	49	20	7	27	52	9	61	44	11	55	43	12	55
Very Good	1	0	1	0	0	0	0	0	0	8	18	26	14	15	29	5	13	18
Total	68	25	93	69	25	94	67	24	91	63	28	91	63	27	90	62	28	90
Bad	0%	12%	3%	0%	4%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	4%	1%
Poor	3%	4%	3%	6%	8%	6%	9%	8%	9%	0%	0%	0%	2%	4%	2%	0%	4%	1%
Normal	43%	48%	44%	41%	40%	40%	60%	63%	60%	5%	4%	4%	6%	0%	4%	23%	4%	17%
Good	53%	36%	48%	54%	48%	52%	30%	29%	30%	83%	32%	67%	70%	41%	61%	69%	43%	61%
Very Good	1%	0%	1%	0%	0%	0%	0%	0%	0%	13%	64%	29%	22%	56%	32%	8%	46%	20%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Junagadh									**All Districts**								
Bad	0	0	0	0	1	1	2	1	3	0	3	3	0	2	2	3	2	5
Poor	1	0	1	5	2	7	5	3	8	3	1	4	10	5	15	11	6	17
Normal	16	16	32	16	17	33	16	21	37	48	29	77	48	27	75	70	37	107
Good	25	17	42	19	15	34	20	9	29	113	35	148	100	38	138	83	28	111
Very Good	17	2	19	18	0	18	16	1	17	26	20	46	32	15	47	21	14	35
Total	59	35	94	58	35	93	59	35	94	190	88	278	190	87	277	188	87	275
Bad	0%	0%	0%	0%	3%	1%	3%	3%	3%	0%	3%	1%	0%	2%	1%	2%	2%	2%
Poor	2%	0%	1%	9%	6%	8%	8%	9%	9%	2%	1%	1%	5%	6%	5%	6%	7%	6%
Normal	27%	46%	34%	28%	49%	35%	27%	60%	39%	25%	33%	28%	25%	31%	27%	37%	43%	39%
Good	42%	49%	45%	33%	43%	37%	34%	26%	31%	59%	40%	53%	53%	44%	50%	44%	32%	40%
Very Good	29%	6%	20%	31%	0%	19%	27%	3%	18%	14%	23%	17%	17%	17%	17%	11%	16%	13%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

8.2.6 Accessibility

1. Infrastructure

Physical infrastructure like roads and transport to health centre are important not only for health workers but for beneficiaries too and can be a decisive factor in making a choice. Quality of transport is ascertained by assessing beneficiary experience of vehicle availability and road condition. Survey results show that 61% find availability of transport to be good or very good. This is 82% in Bharuch, 54% in Junagadh and 47% in Ahmedabad. 10% in Bharuch and Ahmedabad and 17% in Junagadh find this bad or poor (Table 8.2.20). Significant difference is observed in the availability of transport to health centre in the districts (Table 8.2.22).

Table 8.2.22	Infrastructure				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Availability of transport to health centre	6	25.93	<0.0001	Reject	Significant Difference
Condition of road to health centre	8	84.77	<0.0001	Reject	

In all, road condition is considered good or very good in 56% cases and bad or poor in 26% cases. Across districts, condition is good or very good in 47% cases in Ahmedabad, 76% in Bharuch and 47% in Junagadh (Table 8.2.20). Test of hypothesis also show significant difference in road condition across the districts (Table 8.2.22).

2. Facilities

Table 8.2.23	Facilities in Health centre				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Condition of health centre	4	64.8	<0.0001	Reject	Significant Difference
Cleanliness in health centre	4	43.2	<0.0001	Reject	
Water, toilet etc facilities in health centre	4	71.2	<0.0001	Reject	

Facilities like drinking water, toilet, cleanliness and general condition of health centre were assessed in the survey (Table 8.2.21).   General condition is found to be good or very good by 70% of beneficiaries. This is 49% in Ahmedabad, 96% in Bharuch and 65% in Junagadh.

Cleanliness is found to be good or very good in 67% cases, which was 93% in Bharuch, 56% in Junagadh and 52% in Ahmedabad. It was found to be bad or poor by 6% overall, 7% in Ahmedabad, 6% in Bharuch and 9% in Junagadh.

Availability of drinking water and toilet facilities is good or very good by 51% beneficiaries. This was 30% in Ahmedabad, 81% in Bharuch and 49% in Junagadh. In all 16% find it bad or poor, which is 10% in Ahmedabad, 12% in Junagadh and 2% in Bharuch. Thus variation is observed in the availability of basic facilities. Test of hypothesis shows that there is significant difference in all these facilities: condition of health centre, cleanliness and drinking water and toilet (Table 8.2.23).

8.2.7 Quality of Service

Quality of service is the most important factor in public health care delivery. Apart from overall assessment regarding service, factors like availability of doctors/health workers, waiting time and guidance in health centre were assessed during the survey.

1. Availability of Doctors/Health Workers

Regarding availability, in 93% cases doctors and in 87% cases health workers were present during the visit for health care. Availability of doctors was 98% in Ahmedabad, 95% in Bharuch and 85% in Junagadh. Statistically significant difference is found in the availability of doctors during visit of beneficiary to health centres (Table 8.2.25).

Availability of health workers was 87% in all which was 91% in Ahmedabad, 87% in Bharuch and 83% in Junagadh. Test of hypothesis show no significant difference in the presence of health workers Table (8.2.24).

2. Waiting Time

Waiting time is less than an hour in 82% cases. This is 74% in Ahmedabad, 92% in Bharuch and 84% in Junagadh. In Ahmedabad 26% wait for more than an hour which is 16% in Junagadh and 8% in Bharuch (Table 8.2.25). No statistically significant difference is found in the waiting time for the patients to get service.

3. Guidance and Counselling

The quality of guidance and counselling provided was good or very good in 73% cases. This was 53% in Ahmedabad, 94% in Bharuch and 78% in Junagadh. It was bad or poor in 3% cases in all, which was 7% in Ahmedabad, nil in Bharuch and 1% in Junagadh (Table 8.2.26) Significant difference was observed in guidance and counselling provided to patients or beneficiaries (Table 8.2.24).

4. Quality of Service

70% beneficiaries find quality of service to be good or very good. This is 52% in Ahmedabad, 94% in Bharuch and 66% in Junagadh. 74% female find it this way compared to 61% male. It was bad or poor in 3% cases in all, which was 7% in Ahmedabad, 1% in Bharuch and 2% in Junagadh Table (8.2.25). Statistically significant difference is found in the quality of service at the health centre across districts (Table 8.2.24). Quality is a composite indicator which depends on many other factors studied in the survey.

5. Availability of Lab/Drugs

Health centres are expected to provide drugs and lab facilities to patients. It is found in 88% cases these were made available to respondents. This was 82% in Ahmedabad, 87% in Bharuch and 96% in Junagadh. Statistically significant difference is observed across districts in the availability of drugs and laboratory services (Table 8.2.27). Quality of drugs/lab service is good or very good in 58% cases in all which was 54% in Ahmedabad, 84% in Bharuch and 40% in Junagadh. However, in quality of these services there is significant difference across districts (Table 8.2.24). Thus availability does not ensure quality as can be seen in Junagadh. As far as getting lab these services from outside, it was available 48% overall, and 43% in Ahmedabad, 51% in Bharuch and 51% in Junagadh. 59% male procured from outside compared to 43% female (Table 8.2.27). No statistically significant difference is observed drugs/lab services are obtained from outside (Table 8.2.24).

6. Referral Services

37% beneficiaries were sent for treatment to referral hospital. This was 24% in Ahmedabad, 43% in Bharuch and 45% in Junagadh. Significant difference is observed in the extent of referrals to next tier hospitals (Table 8.2.28). 52% of those referred are accompanied by health worker or doctor, which was 53% in Ahmedabad, 58% in Bharuch and 45% in Junagadh. No significant statistical difference is observed in the practice of accompanying referred patients.

In terms of quality of referral services, in all, 72% find referral services good or very good. This is 55% in Ahmedabad, 84% in Bharuch and 74% in Junagadh. 52% of male compared to 82% female find these services good or very good. No significant difference is found in the quality of referral services (Table 8.2.24).

7. Repeat Visit to Health Centre

Repeat visit in future is a key indicator of quality of services. It is found that 67% will certainly come back to health centre in future, 32% are uncertain and 1% will never return. The levels are 39%, 60% and 1% in Ahmedabad, 84%, 16% and nil in Bharuch and 80%, 19% and 1% in Junagadh. 61% male and 80% female are certain to return in future (Table 8.2.29). In this, statistically significant difference is observed across districts.

Table 8.2.24	Experience in Health Centre				
Null Hypothesis (Ho)	Degrees of Freedom	χ^2	p	Reject/ Accept	Remarks
Availability of Doctors	2	10.78	0.005	Reject	Significant difference
Availability of Health Workers	2	1.9	0.387	Accept	No significant difference
Waiting time to meet doctor/HW	4	9.41	0.0516	Accept	
Satisfaction with guidance and counselling	4	42.1	<0.0001	Reject	Significant Difference
Quality of service	4	54.1	<0.0001	Reject	
Whether drugs were available	2	8.4	0.02	Reject	
Quality of drugs	4	103.2	<0.0001	Reject	
Whether purchased drugs from outside	2	1.7	0.43	Accept	No significant difference
Whether referral service was availed	2	10.3	0.006	Reject	Significant Difference
Whether accompanied by health personnel	2	0.87	0.65	Accept	No significant difference
Quality of referral service	4	5.9	0.21	Accept	
Possibility of repeat visit to health centre in the future	4	52.9	<0.0001	Reject	Significant Difference

Table 8.2.25	Health Care: Quality of service											
	Ahmedabad						Bharuch					
Presence of Personnel	Female		Male		Total		Female		Male		Total	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Doctor	62	1	20	1	82	2	55	3	26	1	81	4
HW	39	4	13	1	52	5	52	8	22	3	74	11
Doctor	98%	2%	95%	5%	98%	2%	95%	5%	96%	4%	95%	5%
HW	91%	9%	93%	7%	91%	9%	87%	13%	88%	12%	87%	13%
District	Junagadh						All Districts					
Doctor	49	5	27	8	76	13	166	9	73	10	239	19
HW	46	11	29	4	75	15	137	23	64	8	201	31
Doctor	91%	9%	77%	23%	85%	15%	95%	5%	88%	12%	93%	7%
HW	81%	19%	88%	12%	83%	17%	86%	14%	89%	11%	87%	13%
Waiting time	Ahmedabad						Bharuch					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
< I hr	52	16	68	76%	67%	74%	56	0	56	95%	0%	92%
1-2 hr	14	6	20	21%	25%	22%	2	1	3	3%	50%	5%
> 2 hrs	2	2	4	3%	8%	4%	1	1	2	2%	50%	3%
Total	68	24	92	100%	100%	100%	59	2	61	100%	100%	100%
District	Junagadh						All Districts					
< I hr	45	31	76	80%	89%	84%	153	47	200	84%	77%	82%
1-2 hr	9	2	11	16%	6%	12%	25	9	34	14%	15%	14%
> 2 hrs	2	2	4	4%	6%	4%	5	5	10	3%	8%	4%
Total	56	35	91	100%	100%	100%	183	61	244	100%	100%	100%
Quality	Ahmedabad						Bharuch					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Bad	3	0	3	4%	0%	3%	0	0	0	0%	0%	0%
Poor	3	1	4	4%	4%	4%	1	0	1	2%	0%	1%
Normal	24	13	37	35%	54%	40%	3	2	5	5%	7%	5%
Good	37	9	46	54%	38%	50%	50	9	59	79%	32%	65%
Very Good	1	1	2	1%	4%	2%	9	17	26	14%	61%	29%
Total	68	24	92	100%	100%	100%	63	28	91	100%	100%	100%
District	Junagadh						All Districts					
Bad	1	0	1	2%	0%	1%	4	0	4	2%	0%	1%
Poor	0	1	1	0%	3%	1%	4	2	6	2%	2%	2%
Normal	13	17	30	22%	49%	32%	40	32	72	21%	37%	26%
Good	24	16	40	41%	46%	43%	111	34	145	58%	39%	52%
Very Good	21	1	22	36%	3%	23%	31	19	50	16%	22%	18%
Total	59	35	94	100%	100%	100%	190	87	277	100%	100%	100%

Table 8.2.26	Health Care: Guidance and Counselling					
District	**Ahmedabad**			**Bharuch**		
	Female	**Male**	**Total**	**Female**	**Male**	**Total**
Bad	0	1	1	1	0	1
Poor	5	1	6	0	0	0
Normal	28	9	37	4	1	5
Good	35	9	44	48	13	61
Very Good	1	5	6	9	14	23
Total	69	25	94	62	28	90
Bad	0%	4%	1%	2%	0%	1%
Poor	7%	4%	6%	0%	0%	0%
Normal	41%	36%	39%	6%	4%	6%
Good	51%	36%	47%	77%	46%	68%
Very Good	1%	20%	6%	15%	50%	26%
Total	100%	100%	100%	100%	100%	100%
	Junagadh			**All Districts**		
Bad	1	0	1	2	1	3
Poor	0	0	0	5	1	6
Normal	9	10	19	41	20	61
Good	32	22	54	115	44	159
Very Good	17	3	20	27	22	49
Total	59	35	94	190	88	278
Bad	2%	0%	1%	1%	1%	1%
Poor	0%	0%	0%	3%	1%	2%
Normal	15%	29%	20%	22%	23%	22%
Good	54%	63%	57%	61%	50%	57%
Very Good	29%	9%	21%	14%	25%	18%
Total	100%	100%	100%	100%	100%	100%

Table 8.2.27	Availability of Drugs and Laboratory Services											
	Ahmedabad						Bharuch					
a. Availability of Lab services /Drugs at health centre												
	F	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**
Yes	56	18	74	85%	75%	82%	53	26	79	84%	93%	87%
No	10	6	16	15%	25%	18%	10	2	12	16%	7%	13%
Total	66	24	90	100%	100%	100%	63	28	91	100%	100%	100%
b. Quality of drugs / lab services												
Bad	0	0	0	0%	0%	0%	0	0	0	0%	0%	0%
Poor	0	1	1	0%	6%	2%	1	0	1	2%	0%	1%
Normal	20	10	30	42%	56%	45%	8	3	11	16%	12%	14%
Good	27	7	34	56%	39%	52%	38	9	47	75%	35%	61%
Very Good	1	0	1	2%	0%	2%	4	14	18	8%	54%	23%
Total	48	18	66	100%	100%	100%	51	26	77	100%	100%	100%
c. Obtained Lab services/drugs from outside												
Yes	23	17	40	33%	68%	43%	33	12	45	55%	43%	51%
No	46	8	54	67%	32%	57%	27	16	43	45%	57%	49%
Total	69	25	94	100%	100%	100%	60	28	88	100%	100%	100%
District	Junagadh						All Districts					
a. Availability of Lab Services/ Drugs at health centre												
Yes	58	31	89	100%	89%	96%	167	75	242	89%	86%	88%
No	0	4	4	0%	11%	4%	20	12	32	11%	14%	12%
Total	58	35	93	100%	100%	100%	187	87	274	100%	100%	100%
b. Quality of drugs / lab services												
Bad	28	7	35	48%	20%	38%	28	7	35	18%	9%	15%
Poor	6	5	11	10%	14%	12%	7	6	13	4%	8%	6%
Normal	5	5	10	9%	14%	11%	33	18	51	21%	23%	22%
Good	11	14	25	19%	40%	27%	76	30	106	48%	38%	45%
Very Good	8	4	12	14%	11%	13%	13	18	31	8%	23%	13%
Total	58	35	93	100%	100%	100%	157	79	236	100%	100%	100%
c. Obtained Lab services/drugs from outside												
Yes	25	22	47	42%	65%	51%	81	51	132	43%	59%	48%
No	34	12	46	58%	35%	49%	107	36	143	57%	41%	52%
Total	59	34	93	100%	100%	100%	188	87	275	100%	100%	100%

Table 8.2.28	Health Care: Referral Services											
	Ahmedabad						Bharuch					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Whether referred?												
Yes	14	9	23	20%	36%	24%	28	10	38	46%	36%	43%
No	56	16	72	80%	64%	76%	33	18	51	54%	64%	57%
Total	70	25	95	100%	100%	100%	61	28	89	100%	100%	100%
Whether accompanied by Doctor/ Health Worker?												
Yes	7	2	9	70%	29%	53%	14	8	22	50%	80%	58%
No	3	5	8	30%	71%	47%	14	2	16	50%	20%	42%
Total	10	7	17	100%	100%	100%	28	10	38	100%	100%	100%
Quality of referral services												
Bad	0	0	0	0%	0%	0%	0	0	0	0%	0%	0%
Poor	0	2	2	0%	22%	9%	1	0	1	4%	0%	3%
Normal	3	5	8	23%	56%	36%	3	2	5	11%	22%	14%
Good	10	2	12	77%	22%	55%	22	2	24	81%	22%	67%
Very Good	0	0	0	0%	0%	0%	1	5	6	4%	56%	17%
Total	13	9	22	100%	100%	100%	27	9	36	100%	100%	100%
District	Junagadh						All Districts					
Whether referred?												
Yes	26	16	42	44%	46%	45%	68	35	103	36%	40%	37%
No	33	19	52	56%	54%	55%	122	53	175	64%	60%	63%
Total	59	35	94	100%	100%	100%	190	88	278	100%	100%	100%
Whether accompanied by Doctor/ Health Worker?												
Yes	24	13	37	51%	45%	49%	45	23	68	53%	50%	52%
No	23	16	39	49%	55%	51%	40	23	63	47%	50%	48%
Total	47	29	76	100%	100%	100%	85	46	131	100%	100%	100%
Quality of referral services												
Bad	1	0	1	3%	0%	2%	1	0	1	1%	0%	1%
Poor	2	1	3	6%	5%	6%	3	3	6	4%	8%	5%
Normal	3	8	11	9%	42%	21%	9	15	24	12%	41%	22%
Good	18	10	28	55%	53%	54%	50	14	64	68%	38%	58%
Very Good	9	0	9	27%	0%	17%	10	5	15	14%	14%	14%
Total	33	19	52	100%	100%	100%	73	37	110	100%	100%	100%

Table 8.2.29	**Repeat Visit for Health Care**											
District	**Ahmedabad**						**Bharuch**					
	F	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**
Never	0	1	1	0%	4%	1%	0	0	0	0%	0%	0%
May be	51	6	57	73%	24%	60%	13	2	15	21%	7%	16%
Certainly	19	18	37	27%	72%	39%	50	26	76	79%	93%	84%
Total	70	25	95	100%	100%	100%	63	28	91	100%	100%	100%
District	**Junagadh**						**All Districts**					
Never	0	1	1	0%	3%	1%	0	2	2	0%	2%	1%
May be	10	8	18	17%	23%	19%	74	16	90	39%	18%	32%
Certainly	49	26	75	83%	74%	80%	118	70	188	61%	80%	67%
Total	59	35	94	100%	100%	100%	192	88	280	100%	100%	100%

Table 8.2.30	**Documentation and Record keeping**											
District	**Ahmedabad**						**Bharuch**					
a. Any Record given from health centre?												
	F	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**
Yes	27	12	39	39%	50%	42%	44	18	62	73%	64%	70%
No	42	12	54	61%	50%	58%	16	10	26	27%	36%	30%
Total	69	24	93	100%	100%	100%	60	28	88	100%	100%	100%
b. Usefulness of documents												
Yes	21	9	30	100%	100%	100%	42	17	59	98%	94%	97%
No	0	0	0	0%	0%	0%	1	1	2	2%	6%	3%
Total	21	9	30	100%	100%	100%	43	18	61	100%	100%	100%
District	**Junagadh**						**All Districts**					
a. Any Record given from health centre?												
Yes	37	18	55	65%	51%	60%	108	48	156	58%	55%	57%
No	20	17	37	35%	49%	40%	78	39	117	42%	45%	43%
Total	57	35	92	100%	100%	100%	186	87	273	100%	100%	100%
b. Usefulness of documents												
Yes	35	16	51	73%	48%	63%	98	42	140	88%	70%	81%
No	13	17	30	27%	52%	37%	14	18	32	13%	30%	19%
Total	48	33	81	100%	100%	100%	112	60	172	100%	100%	100%

Table 8.2.31	Documentation and Record Keeping				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Record Given from health centre	3	15.4	0.005	Reject	Significant Difference
Usefulness of documents	3	34.5	<0.001	Reject	

8.2.8 Documentation

57% of respondents have reported to have been provided document or record from health centre. This is 42% in Ahmedabad, 70% in Bharuch and 60% in Junagadh. Of this, 81% find it useful. This level is 100% in Ahmedabad, 97% in Bharuch and 63% in Junagadh. 88% males find it useful compared to 71% female (Table 8.2.30). Significant difference is found across districts in providing health documents to patients as well as its usefulness (Table 8.2.31). Thus though large number of respondents found documentation useful, the availability is not uniform or standardised.

8.2.9 Financial Resources/ Burden

1. Health Expenditure: Affordability

58% of those surveyed visited private medical practitioners in the past 1 year. This level was 73% in Ahmedabad, 56% in Bharuch and 47% in Junagadh. The extent is similar for male and female at 60% and 55%. Among those visited, 58% spent less than Rs 1000, 30% spent Rs 1000 to 3000, 7% spent Rs 5000 to 10000 and 4% spent more than Rs 10000. Those who spent below Rs 1000 were highest in Junagadh at 74%, 49% in Ahmedabad and 56% in Bharuch (Table 8.2.33). It is found that significant difference exists in availing private health care and the extent of out-of-pocket health expenditure (Table 8.2.32).

2. Financial Assistance from Government

Of those who were surveyed, 47% had availed Government's financial assistance under some scheme or other. This was 40% in Ahmedabad, 58% in Bharuch and 45% in Junagadh. More female (52%) avail these benefits compared to male (39%). Of the total, 84% have found it easy to avail this assistance which was 60% in Ahmedabad, 98% in Bharuch and 87% in Junagadh. In Ahmedabad, only 29% male and 68% female find it easy to get the financial assistance compared to other districts where it was more than 80% in all the cases (Table 8.2.34).

Analysis of test of hypothesis shows that significant difference exists in proportion of persons availing some form of Government financial assistance and difficulty in availing the assistance (Table 8.2.32).

Table 8.2.32	Financial Resources/Burden				
Null Hypothesis	Deg. of Freedom	χ^2	p	Reject/ Accept	Remarks
Whether availed financial assistance from Government	2	6.7	0.034	Reject	Significant Difference
Experience in getting financial assistance	2	22.8	<0.001	Reject	
Instance of visit to private health care	2	13.4	0.006	Reject	
Out of pocket private expenditure	4	13.2	0.01	Reject	
Willingness to pay for better service	3	10.9	0.004	Reject	

3. Willingness to Pay for Better Services

The survey also ascertained the willingness of beneficiaries to pay for better services. Of those surveyed, 77% have expressed willingness to pay for better services, which was 88% in Ahmedabad, 67% in Bharuch and 76% in Junagadh. 78% male and 76% female were willing to pay for better services in all districts (Table 8.2.35). Significant difference is found in the willingness of respondents to pay for better health services (Table 8.2.32).

Table 8.2.33	Affordability: Out-of-Pocket Expenditure on Health Care											
District	**Ahmedabad**						**Bharuch**					
	F	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**	**F**	**M**	**Tot**
Yes	48	21	69	69%	84%	73%	36	14	50	58%	50%	56%
No	22	4	26	31%	16%	27%	26	14	40	42%	50%	44%
Total	70	25	95	100%	100%	100%	62	28	90	100%	100%	100%
If Yes, expenditure												
<1000	30	4	34	63%	19%	49%	18	9	27	50%	75%	56%
1000-3000	15	12	27	31%	57%	39%	9	2	11	25%	17%	23%
3000-5000	3	2	5	6%	10%	7%	5	1	6	14%	8%	13%
5000-10000	0	3	3	0%	14%	4%	4	0	4	11%	0%	8%
Total	48	21	69	100%	100%	100%	36	12	48	100%	100%	100%
	Junagadh						**All Districts**					
Yes	31	13	44	53%	37%	47%	115	48	163	60%	55%	58%
No	28	22	50	47%	63%	53%	76	40	116	40%	45%	42%
Total	59	35	94	100%	100%	100%	191	88	279	100%	100%	100%
If Yes, expenditure												
<1000	23	11	34	74%	73%	74%	71	24	95	62%	50%	58%
1000-3000	7	4	11	23%	27%	24%	31	18	49	27%	38%	30%
3000-5000	1	0	1	3%	0%	2%	9	3	12	8%	6%	7%
5000-10000	0	0	0	0%	0%	0%	4	3	7	3%	6%	4%
Total	31	15	46	100%	100%	100%	115	48	163	100%	100%	100%

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Table 8.2.34	Financial Assistance from Government											
	Ahmedabad						Bharuch					
a. Financial Assistance under Government Schemes												
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Yes	29	8	37	43%	32%	40%	39	14	53	62%	50%	58%
No	39	17	56	57%	68%	60%	24	14	38	38%	50%	42%
Total	68	25	93	100%	100%	100%	63	28	91	100%	100%	100%
b. If yes, whether it was easy?												
Yes	19	2	21	68%	29%	60%	38	12	50	100%	92%	98%
No	9	5	14	32%	71%	40%	0	1	1	0%	8%	2%
Total	28	7	35	100%	100%	100%	38	13	51	100%	100%	100%
	Junagadh						All Districts					
a. Financial Assistance under Government Schemes												
Yes	30	12	42	51%	34%	45%	98	34	132	52%	39%	47%
No	29	23	52	49%	66%	55%	92	54	146	48%	61%	53%
Total	59	35	94	100%	100%	100%	190	88	278	100%	100%	100%
b. If yes, whether it was easy?												
Yes	24	10	34	83%	100%	87%	81	24	105	85%	80%	84%
No	5	0	5	17%	0%	13%	14	6	20	15%	20%	16%
Total	29	10	39	100%	100%	100%	95	30	125	100%	100%	100%

Table 8.2.35	Willingness to pay for better service in health centres											
	Ahmedabad						Bharuch					
	F	M	Tot	F	M	Tot	F	M	Tot	F	M	Tot
Yes	59	22	81	87%	92%	88%	40	18	58	67%	69%	67%
No	9	2	11	13%	8%	12%	20	8	28	33%	31%	33%
Total	68	24	92	100%	100%	100%	60	26	86	100%	100%	100%
	Junagadh						All Districts					
Yes	40	24	64	80%	71%	76%	139	64	203	78%	76%	77%
No	10	10	20	20%	29%	24%	39	20	59	22%	24%	23%
Total	50	34	84	100%	100%	100%	178	84	262	100%	100%	100%

8.3 Analysis of Socio-Economic Factors

In the beneficiary survey, the respondents were asked to provide information about their demographic, social and economic status. These were Age, Family Size, Monthly Income, Poverty Level, Occupation, Literacy and Caste. These key factors, individually and jointly, influence the health care status of the respondents. Therefore, it is necessary to understand the impact of these variables on health care behaviour. During the survey of respondents, some critical responses regarding health care were obtained in all the districts. For this purpose, responses in respect of attendance in health awareness programs, health care seeking behaviour in terms of guidance and decision making, purpose of visit to health centre, quality of service at the health centre, possibility of repeat visit to health centre, annual expenditure on health care and willingness to pay for better health service were ascertained and analyzed.

Data tables were generated from the information collected in the survey. Based on this, Chi-Square test of hypothesis was undertaken to ascertain the relationship between these variables.

8.3.1   Age of Respondents

In terms of attendance in awareness generation programs, 88%, 93%, 76% and 73% of respondents of age groups 18-25, 26-35, 36-45 and more than 45 attended such programs (Table 8.3.2 to 8.3.9).

Analysis of health care seeking behaviour reveals key influencer in different age groups. Health workers are the key influencers for all age groups. Parents are the second key influencers in the age group 18-25, ASHA workers in 26-35 and more than 45 and spouses in 36-45 age groups. However, in Ahmedabad, spouses and parents are the key influencers. Decisions regarding health care are made by respondents themselves in most cases. This is followed by spouses and parents. In Ahmedabad, spouses are the key decision makers in the groups 18-25 and 26-35.

Key purpose of visit to health centre is immunization followed by communicable diseases in all age groups. Family planning is the main purpose in age group 36-45 in Ahmedabad and Bharuch. Perception regarding quality of service remains the same across all age groups. As far as repeat visit is concerned, 58% of 18-25 age group respondents, 72% of 26-35, 67% of 36-45 and 73% of more than 45 are certain to repeat their visit.

Persons in age group 36-45 were most likely to go to private practitioner for health care (71%) which was in the 55-60% range for other groups. Similarly, 84% of 36-45 groups are willing to pay more for better service which is 70-80% for other groups.

Test of hypothesis shows that there is no significant difference among age groups in attending awareness program and availing private health care. In case of health care influencers, decision making, purpose of visit, quality of health service, repeat visit to health centre and willingness to pay for better services, there is significant difference between the age groups (Table 8.3.1)

Table 8.3.1	Age of Beneficiaries				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Attended Awareness Program	6	10.7	0.098	Accept	No significant difference
Health Seeking Behaviour - Influencer	6	31.6	<0.0001	Reject	Significant Difference
Health Seeking Behaviour - Decision Maker	6	26.12	<0.0001	Reject	
Purpose of visit to health centre	6	31.95	<0.0001	Reject	
Quality of service	6	14.06	0.029	Reject	
Repeat visit to health centre	6	13.65	0.034	Reject	
Availed private health care	6	6.56	0.363	Accept	No significant difference
Willingness to pay for better services	6	15.47	0.017	Reject	Significant difference

Table 8.3.2	Attended Awareness Program											
Age	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
	Ahmedabad						Bharuch					
18-25	25	6	31	81%	19%	100%	23	1	24	96%	4%	100%
26-35	24	4	28	86%	14%	100%	41	6	47	87%	13%	100%
36-45	15	6	21	71%	29%	100%	10	3	13	77%	23%	100%
>45	9	3	12	75%	25%	100%	5	2	7	71%	29%	100%
Total	73	19	92	79%	21%	100%	79	12	91	87%	13%	100%
	Junagadh						All Districts					
18-25	20	2	22	91%	9%	100%	68	9	77	88%	12%	100%
26-35	47	3	50	94%	6%	100%	112	13	125	90%	10%	100%
36-45	9	2	11	82%	18%	100%	34	11	45	76%	24%	100%
>45	8	3	11	73%	27%	100%	22	8	30	73%	27%	100%
Total	84	10	94	89%	11%	100%	236	41	277	85%	15%	100%

Chart 8.3: **Health Care Seeking Behaviour of Beneficiaries**

Demographic/ Socio-Economic Factors

- Gender
- Age
- Family Size
- Income
- Poverty
- Education
- Occupation

Access

- Vehicle and Road
- Distance

Affordability

* Direct Costs: Drugs, transport
*Indirect cost: Loss of wages

Awareness

- Programs
- Publicity
- Participation

Influencers

Decision Makers

Health Care Seeking Behaviour

Quality of Services

Availability
- Doctors
- Health Workers
- Drugs/Lab

Repeat Visit

Table 8.3.3							Health Care Seeking Behaviour - Influencer							
Age	Spouse	Parents	Frnd/Rel	HW	ASHA	Othrs	Total	Spouse	Parents	Frnd/Rel	HW	ASHA	Othrs	Total
							Ahmedabad							
18-25	23	25	9	9	9	2	77	30%	32%	12%	12%	12%	3%	100%
26-35	21	20	7	6	8	5	67	31%	30%	10%	9%	12%	7%	100%
36-45	11	8	4	9	4	1	37	30%	22%	11%	24%	11%	3%	100%
>45	3	1	4	5	0	0	13	23%	8%	31%	38%	0%	0%	100%
Total	58	54	24	29	21	8	194	30%	28%	12%	15%	11%	4%	100%
							Bharuch							
18-25	4	4	1	14	11	1	35	11%	11%	3%	40%	31%	3%	100%
26-35	8	6	1	24	22	4	65	12%	9%	2%	37%	34%	6%	100%
36-45	4	3	0	10	2	2	21	19%	14%	0%	48%	10%	10%	100%
>45	0	0	0	6	3	1	10	0%	0%	0%	60%	30%	10%	100%
Total	16	13	2	54	38	8	131	12%	10%	2%	41%	29%	6%	100%
							Junagadh							
18-25	1	6	0	15	6	2	30	3%	20%	0%	50%	20%	7%	100%
26-35	15	11	2	38	22	0	88	17%	13%	2%	43%	25%	0%	100%
36-45	1	2	1	7	5	0	16	6%	13%	6%	44%	31%	0%	100%
>45	3	2	1	10	5	0	21	14%	10%	5%	48%	24%	0%	100%
Total	20	21	4	70	38	2	155	13%	14%	3%	45%	25%	1%	100%
							All Districts							
18-25	28	35	10	38	26	5	142	20%	25%	7%	27%	18%	4%	100%
26-35	44	37	10	68	52	9	220	20%	17%	5%	31%	24%	4%	100%
36-45	16	13	5	26	11	3	74	22%	18%	7%	35%	15%	4%	100%
>45	6	3	5	21	8	1	44	14%	7%	11%	48%	18%	2%	100%
Total	94	88	30	153	97	18	480	20%	18%	6%	32%	20%	4%	100%

Table 8.3.4		Health Care Seeking Behaviour - Decision Maker												
Age	Own self	Spouse	Parents	Friend/ Relative	HW	ASHA	Total	Own self	Husband/ wife	Parents	Friend/ Relative	HW	ASHA	Total
							Ahmedabad							
18-25	18	23	17	2	3	3	66	27%	35%	26%	3%	5%	5%	100%
26-35	17	17	13	3	2	2	54	31%	31%	24%	6%	4%	4%	100%
36-45	14	10	5	2	1	0	32	44%	31%	16%	6%	3%	0%	100%
>45	8	2	3	2	4	0	19	42%	11%	16%	11%	21%	0%	100%
Total	57	52	38	9	10	5	171	33%	30%	22%	5%	6%	3%	100%
							Bharuch							
18-25	11	4	3	1	3	8	30	37%	13%	10%	3%	10%	27%	100%
26-35	31	11	4	2	6	6	60	52%	18%	7%	3%	10%	10%	100%
36-45	8	7	1	1	3	2	22	36%	32%	5%	5%	14%	9%	100%
>45	4	2	0	1	2	1	10	40%	20%	0%	10%	20%	10%	100%
Total	54	24	8	5	14	17	122	44%	20%	7%	4%	11%	14%	100%
							Junagadh							
18-25	11	6	2	3	7	5	34	32%	18%	6%	9%	21%	15%	100%
26-35	33	13	6	0	19	9	80	41%	16%	8%	0%	24%	11%	100%
36-45	5	1	1	0	5	0	12	42%	8%	8%	0%	42%	0%	100%
>45	9	4	1	0	3	1	18	50%	22%	6%	0%	17%	6%	100%
Total	58	24	10	3	34	15	144	40%	17%	7%	2%	24%	10%	100%
							All Districts							
18-25	40	33	22	6	13	16	130	31%	25%	17%	5%	10%	12%	100%
26-35	81	41	23	5	27	17	194	42%	21%	12%	3%	14%	9%	100%
36-45	27	18	7	3	9	2	66	41%	27%	11%	5%	14%	3%	100%
>45	21	8	4	3	9	2	47	45%	17%	9%	6%	19%	4%	100%
Total	169	100	56	17	58	37	437	39%	23%	13%	4%	13%	8%	100%

Table 8.3.5	Purpose of Visit to Health Centre													
	Immuni zation	Family Planning	Communi diseases	Maternal Health	Nutrition	Others	Total	Immuni zation	Family Planning	Communi diseases	Maternal Health	Nutrition	Others	Total
Age	Ahmedabad													
18-25	13	2	10	6	2	0	33	39%	6%	30%	18%	6%	0%	100%
26-35	13	10	10	6	3	2	44	30%	23%	23%	14%	7%	5%	100%
36-45	10	9	7	2	2	1	31	32%	29%	23%	6%	6%	3%	100%
>45	8	2	3	2	4	0	19	42%	11%	16%	11%	21%	0%	100%
Total	44	23	30	16	11	3	127	35%	18%	24%	13%	9%	2%	100%
	Bharuch													
18-25	11	9	9	3	6	1	39	28%	23%	23%	8%	15%	3%	100%
26-35	23	16	25	12	9	0	85	27%	19%	29%	14%	11%	0%	100%
36-45	8	3	3	1	5	0	20	40%	15%	15%	5%	25%	0%	100%
>45	2	2	3	1	1	0	9	22%	22%	33%	11%	11%	0%	100%
Total	44	30	40	17	21	1	153	29%	20%	26%	11%	14%	1%	100%
	Junagadh													
18-25	7	8	5	6	7	1	34	21%	24%	15%	18%	21%	3%	100%
26-35	31	21	20	8	10	0	90	34%	23%	22%	9%	11%	0%	100%
36-45	0	3	7	0	0	0	10	0%	30%	70%	0%	0%	0%	100%
>45	1	2	9	3	1	0	16	6%	13%	56%	19%	6%	0%	100%
Total	39	34	41	17	18	1	150	26%	23%	27%	11%	12%	1%	100%
	All Districts													
18-25	31	19	24	15	15	2	106	29%	18%	23%	14%	14%	2%	100%
26-35	67	47	55	26	22	2	219	31%	21%	25%	12%	10%	1%	100%
36-45	18	15	17	3	7	1	61	30%	25%	28%	5%	11%	2%	100%
>45	11	6	15	6	6	0	44	25%	14%	34%	14%	14%	0%	100%
Total	127	87	111	50	50	5	430	30%	20%	26%	12%	12%	1%	100%

Table 8.3.6						Quality of Service						
	Bad	Poor	Normal	Good	Very Good	Total	Bad	Poor	Normal	Good	Very Good	Total
Age						Ahmedabad						
18-25	0	1	13	16	0	30	0%	3%	43%	53%	0%	100%
26-35	1	2	10	14	0	27	4%	7%	37%	52%	0%	100%
36-45	1	0	8	12	0	21	5%	0%	38%	57%	0%	100%
>45	1	0	8	2	1	12	8%	0%	67%	17%	8%	100%
Total	3	3	39	44	1	90	3%	3%	43%	49%	1%	100%
						Bharuch						
18-25	0	0	0	18	6	24	0%	0%	0%	75%	25%	100%
26-35	0	0	2	35	10	47	0%	0%	4%	74%	21%	100%
36-45	0	0	1	5	7	13	0%	0%	8%	38%	54%	100%
>45	0	0	1	3	3	7	0%	0%	14%	43%	43%	100%
Total	0	0	4	61	26	91	0%	0%	4%	67%	29%	100%
						Junagadh						
18-25	0	0	6	8	8	22	0%	0%	27%	36%	36%	100%
26-35	0	1	17	21	11	50	0%	2%	34%	42%	22%	100%
36-45	0	0	4	7	0	11	0%	0%	36%	64%	0%	100%
>45	0	0	5	6	0	11	0%	0%	45%	55%	0%	100%
Total	0	1	32	42	19	94	0%	1%	34%	45%	20%	100%
						All Districts						
18-25	0	1	19	42	14	76	0%	1%	25%	55%	18%	100%
26-35	1	3	29	70	21	124	1%	2%	23%	56%	17%	100%
36-45	1	0	13	24	7	45	2%	0%	29%	53%	16%	100%
>45	1	0	14	11	4	30	3%	0%	47%	37%	13%	100%
Total	3	4	75	147	46	275	1%	1%	27%	53%	17%	100%

Table 8.3.7	Repeat Visit to Health Centre															
	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total
Age	Ahmedabad								Bharuch							
18-25	0	24	7	31	0%	77%	23%	100%	0	6	18	24	0%	25%	75%	100%
26-35	0	18	10	28	0%	64%	36%	100%	0	7	40	47	0%	15%	85%	100%
36-45	1	9	11	21	5%	43%	52%	100%	0	1	12	13	0%	8%	92%	100%
>45	0	4	8	12	0%	33%	67%	100%	0	1	6	7	0%	14%	86%	100%
Total	1	55	36	92	1%	60%	39%	100%	0	15	76	91	0%	16%	84%	100%
	Junagadh								All Districts							
18-25	0	2	20	22	0%	9%	91%	100%	0	32	45	77	0%	42%	58%	100%
26-35	1	9	40	50	2%	18%	80%	100%	1	34	90	125	1%	27%	72%	100%
36-45	0	4	7	11	0%	36%	64%	100%	1	14	30	45	2%	31%	67%	100%
>45	0	3	8	11	0%	27%	73%	100%	0	8	22	30	0%	27%	73%	100%
Total	1	18	75	94	1%	19%	80%	100%	2	88	187	277	1%	32%	68%	100%

Table 8.3.8	Annual Out-of-Pocket Expenditure on Health															
Age	Yes	No		If Yes, Expenditure												
			Total	<1000	1000-3000	3000-5000	5000-10000	Total	Yes	No	Total	<1000	1000-3000	3000-5000	5000-10000	Total
Ahmedabad																
18-25	19	12	31	13	5	0	1	19	61%	39%	100%	68%	26%	0%	5%	100%
26-35	22	6	28	10	9	2	1	22	79%	21%	100%	45%	41%	9%	5%	100%
36-45	16	5	21	7	7	1	1	16	76%	24%	100%	44%	44%	6%	6%	100%
>45	10	2	12	4	4	2	0	10	83%	17%	100%	40%	40%	20%	0%	100%
Total	67	25	92	34	25	5	3	67	73%	27%	100%	51%	37%	7%	4%	100%
Bharuch																
18-25	11	12	23	5	2	3	1	11	48%	52%	100%	45%	18%	27%	9%	100%
26-35	26	21	47	13	7	3	3	26	55%	45%	100%	50%	27%	12%	12%	100%
36-45	9	4	13	6	0	0	0	6	69%	31%	100%	100%	0%	0%	0%	100%
>45	4	3	7	3	2	0	0	5	57%	43%	100%	60%	40%	0%	0%	100%
Total	50	40	90	27	11	6	4	48	56%	44%	100%	56%	23%	13%	8%	100%
Junagadh																
18-25	12	10	22	6	4	0	0	10	55%	45%	100%	60%	40%	0%	0%	100%
26-35	22	28	50	17	3	1	0	21	44%	56%	100%	81%	14%	5%	0%	100%
36-45	7	4	11	5	2	0	0	7	64%	36%	100%	71%	29%	0%	0%	100%
>45	3	8	11	3	0	0	0	3	27%	73%	100%	100%	0%	0%	0%	100%
Total	44	50	94	31	9	1	0	41	47%	53%	100%	76%	22%	2%	0%	100%
All Districts																
18-25	42	34	76	24	11	3	2	40	55%	45%	100%	60%	28%	8%	5%	100%
26-35	70	55	125	40	19	6	4	69	56%	44%	100%	58%	28%	9%	6%	100%
36-45	32	13	45	18	9	1	1	29	71%	29%	100%	62%	31%	3%	3%	100%
>45	17	13	30	10	6	2	0	18	57%	43%	100%	56%	33%	11%	0%	100%
Total	161	115	276	92	45	12	7	156	58%	42%	100%	59%	29%	8%	4%	100%

Table 8.3.9				Willingness to Pay for Better Services									
				Ahmedabad						Bharuch			
Age	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
18-25	26	4	30	87%	13%	100%	12	11	23	52%	48%	100%
26-35	23	4	27	85%	15%	100%	33	11	44	75%	25%	100%
36-45	19	2	21	90%	10%	100%	9	3	12	75%	25%	100%
>45	10	1	11	91%	9%	100%	4	3	7	57%	43%	100%
Total	78	11	89	88%	12%	100%	58	28	86	67%	33%	100%
				Junagadh						All Districts			
18-25	11	5	16	69%	31%	100%	49	20	69	71%	29%	100%
26-35	36	11	47	77%	23%	100%	92	26	118	78%	22%	100%
36-45	9	2	11	82%	18%	100%	37	7	44	84%	16%	100%
>45	8	2	10	80%	20%	100%	22	6	28	79%	21%	100%
Total	64	20	84	76%	24%	100%	200	59	259	77%	23%	100%

8.3.2 Family Size

Analysis of attendance in awareness generation programs shows that 90%, 85%, 88%, and 76% respondents with family size upto 2, 3-4, 5-6 and more than 6 attended such programs. Health workers are the key influencers for all age groups followed by ASHA and spouses. Decisions on health care are made by respondents themselves in most cases. This is followed by spouses and parents (Table 8.3.11 to 8.3.18)

Key purpose of visit to health centre is communicable diseases followed by immunization. Family planning is the main purpose in family size upto 2 & 5-6 in Bharuch and 3-4 & 5-6 in Junagadh. Regarding quality of service, 50% of upto 2, 65% of 3-4, 74% of 5-6 and 71% of more than 6 found it to be good or very good.

. As far as repeat visit is concerned, 60% of upto 2, 68% of 3-4, 67% of 5-6 and 80% of more than 6 were certain to visit the health centre again. It was found that 60% with family size upto 2, 53% of 3-4, 61% of 5-6 and 60% had availed private health care recently. 90% of respondents with family size upto 2, 83% of 3-4, 77% of 5-6 and 67% with more than 6 were willing to pay for better services.

Test of hypothesis shows that there is no significant difference in terms of family size in health care influencers, decision making, quality of health service, repeat visit to health centre, centre and willingness to pay for better services. In case of attendance in awareness programs and purpose of visit to health centre, there is significant difference across family sizes (Table 8.3.10).

Table 8.3.10	Family Size				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Attended Awareness Program	6	144.3	<0.0001	Reject	Significant difference
Health Seeking Behaviour - Influencer	6	9.7	0.14	Accept	No Significant difference
Health Seeking Behaviour - Decision Maker	6	12	0.062	Accept	
Purpose of visit to health centre	6	13.25	0.039	Reject	Significant difference
Quality of service	6	0.15	0.166	Accept	No significant difference
Repeat visit to health centre	6	7.44	0.282	Accept	
Availed private health care	6	3.53	0.74	Accept	
Willingness to pay for better services	6	7.76	0.256	Accept	

Table 8.3.11	Attended awareness program											
Family Size	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
	Ahmedabad						Bharuch					
Upto 2	5	1	6	83%	17%	100%	2	0	2	100%	0%	100%
3-4	24	6	30	80%	20%	100%	21	5	26	81%	19%	100%
5-6	31	9	40	78%	23%	100%	46	4	50	92%	8%	100%
>6	15	4	19	79%	21%	100%	10	3	13	77%	23%	100%
Total	75	20	95	79%	21%	100%	79	12	91	87%	13%	100%
	Junagadh						All Districts					
Upto 2	2	0	2	100%	0%	100%	9	1	10	90%	10%	100%
3-4	22	1	23	96%	4%	100%	67	12	79	85%	15%	100%
5-6	51	5	56	91%	9%	100%	128	18	146	88%	12%	100%
>6	9	4	13	69%	31%	100%	34	11	45	76%	24%	100%
Total	84	10	94	89%	11%	100%	238	42	280	85%	15%	100%

Table 8.3.12						Health Seeking Behaviour - Influencer							
Family Size	Spouse	Parents	Frnd/Rel	HW	ASHA	Othrs	Total	Spouse	Parents	Frnd/Rel	HW	ASHA	Othrs	Total
							Ahmedabad							
Up to 2	2	4	2	3	2	0	13	15%	31%	15%	23%	15%	0%	100%
3-4	20	17	9	9	7	2	64	31%	27%	14%	14%	11%	3%	100%
5-6	30	27	9	10	8	4	88	34%	31%	10%	11%	9%	5%	100%
>6	9	7	4	7	5	2	34	26%	21%	12%	21%	15%	6%	100%
Total	61	55	24	29	22	8	199	31%	28%	12%	15%	11%	4%	100%
							Bharuch							
Up to 2	0	0	1	2	2	0	5	0%	0%	20%	40%	40%	0%	100%
3-4	6	5	1	14	13	0	39	15%	13%	3%	36%	33%	0%	100%
5-6	8	7	0	32	18	4	69	12%	10%	0%	46%	26%	6%	100%
>6	2	1	0	6	5	4	18	11%	6%	0%	33%	28%	22%	100%
Total	16	13	2	54	38	8	131	12%	10%	2%	41%	29%	6%	100%
							Junagadh							
Up to 2	0	0	1	1	1	0	3	0%	0%	33%	33%	33%	0%	100%
3-4	5	5	0	19	11	0	40	13%	13%	0%	48%	28%	0%	100%
5-6	11	13	2	40	22	2	90	12%	14%	2%	44%	24%	2%	100%
>6	4	3	1	10	4	0	22	18%	14%	5%	45%	18%	0%	100%
Total	20	21	4	70	38	2	155	13%	14%	3%	45%	25%	1%	100%
							All Districts							
Up to 2	2	4	4	6	5	0	21	10%	19%	19%	29%	24%	0%	100%
3-4	31	27	10	42	31	2	143	22%	19%	7%	29%	22%	1%	100%
5-6	49	47	11	82	48	10	247	20%	19%	4%	33%	19%	4%	100%
>6	15	11	5	23	14	6	74	20%	15%	7%	31%	19%	8%	100%
Total	97	89	30	153	98	18	485	20%	18%	6%	32%	20%	4%	100%

Table 8.3.13	Health Seeking Behaviour - Decision Maker												
Occupation	Own self	Spouse	Parents	Friend/ Relative	HW	ASHA	Total	Own self	Husband/ wife	Parents	Friend/ Relative	HW	ASHA	Total
							Ahmedabad							
Up to 2	5	2	2	0	0	0	9	56%	22%	22%	0%	0%	0%	100%
3-4	20	19	12	3	3	2	59	34%	32%	20%	5%	5%	3%	100%
5-6	21	26	17	4	1	3	72	29%	36%	24%	6%	1%	4%	100%
>6	12	8	8	2	6	0	36	33%	22%	22%	6%	17%	0%	100%
Total	58	55	39	9	10	5	176	33%	31%	22%	5%	6%	3%	100%
							Bharuch							
Up to 2	2	0	0	0	0	0	2	100%	0%	0%	0%	0%	0%	100%
3-4	17	5	2	0	4	6	34	50%	15%	6%	0%	12%	18%	100%
5-6	27	15	6	5	7	9	69	39%	22%	9%	7%	10%	13%	100%
>6	8	4	0	0	3	2	17	47%	24%	0%	0%	18%	12%	100%
Total	54	24	8	5	14	17	122	44%	20%	7%	4%	11%	14%	100%
							Junagadh							
Up to 2	1	0	0	0	1	1	3	33%	0%	0%	0%	33%	33%	100%
3-4	17	7	2	0	7	4	37	46%	19%	5%	0%	19%	11%	100%
5-6	34	12	6	3	18	7	80	43%	15%	8%	4%	23%	9%	100%
>6	6	5	2	0	8	3	24	25%	21%	8%	0%	33%	13%	100%
Total	58	24	10	3	34	15	144	40%	17%	7%	2%	24%	10%	100%
							All Districts							
Up to 2	8	2	2	0	1	1	14	57%	14%	14%	0%	7%	7%	100%
3-4	54	31	16	3	14	12	130	42%	24%	12%	2%	11%	9%	100%
5-6	82	53	29	12	26	19	221	37%	24%	13%	5%	12%	9%	100%
>6	26	17	10	2	17	5	77	34%	22%	13%	3%	22%	6%	100%
Total	170	103	57	17	58	37	442	38%	23%	13%	4%	13%	8%	100%

Table 8.3.14							**Purpose of Visit to Health Centre**						
Family Size	**Immuni zation**	**Family Planning**	**Communi diseases**	**Maternal Health**	**Nutrition**	**Others**	**Total**	**Immuni zation**	**Family Planning**	**Communi diseases**	**Maternal Health**	**Nutrition**	**Others**	**Total**
							Ahmedabad						
Upto 2	3	1	3	0	0	0	7	43%	14%	43%	0%	0%	0%	100%
3-4	8	6	8	5	1	0	28	29%	21%	29%	18%	4%	0%	100%
5-6	22	13	12	8	4	3	62	35%	21%	19%	13%	6%	5%	100%
>6	4	5	11	4	2	2	28	14%	18%	39%	14%	7%	7%	100%
Total	37	25	34	17	7	5	125	30%	20%	27%	14%	6%	4%	100%
							Bharuch						
Upto 2	0	1	2	0	0	0	3	0%	33%	67%	0%	0%	0%	100%
3-4	14	5	14	4	7	1	45	31%	11%	31%	9%	16%	2%	100%
5-6	25	22	18	9	12	0	86	29%	26%	21%	10%	14%	0%	100%
>6	5	2	6	4	2	0	19	26%	11%	32%	21%	11%	0%	100%
Total	44	30	40	17	21	1	153	29%	20%	26%	11%	14%	1%	100%
							Junagadh						
Upto 2	1	0	1	0	0	0	2	50%	0%	50%	0%	0%	0%	100%
3-4	10	8	10	6	5	0	39	26%	21%	26%	15%	13%	0%	100%
5-6	26	24	22	7	10	1	90	29%	27%	24%	8%	11%	1%	100%
>6	2	2	8	4	3	0	19	11%	11%	42%	21%	16%	0%	100%
Total	39	34	41	17	18	1	150	26%	23%	27%	11%	12%	1%	100%
							All Districts						
Upto 2	4	2	6	0	0	0	12	33%	17%	50%	0%	0%	0%	100%
3-4	32	19	32	15	13	1	112	29%	17%	29%	13%	12%	1%	100%
5-6	73	59	52	24	26	4	238	31%	25%	22%	10%	11%	2%	100%
>6	11	9	25	12	7	2	66	17%	14%	38%	18%	11%	3%	100%
Total	120	89	115	51	46	7	428	28%	21%	27%	12%	11%	2%	100%

Table 8.3.15	Quality of Service										
Family Size	Bad	Poor	Normal	Good	Very Good	Total	Bad	Poor	Normal	Good	Very Good	Total
	Ahmedabad											
Upto 2	0	0	3	3	0	6	0%	0%	50%	50%	0%	100%
3-4	0	3	18	9	0	30	0%	10%	60%	30%	0%	100%
5-6	2	0	13	23	0	38	5%	0%	34%	61%	0%	100%
>6	1	0	7	10	1	19	5%	0%	37%	53%	5%	100%
Total	3	3	41	45	1	93	3%	3%	44%	48%	1%	100%
	Bharuch											
Upto 2	0	0	0	2	0	2	0%	0%	0%	100%	0%	100%
3-4	0	0	0	20	6	26	0%	0%	0%	77%	23%	100%
5-6	0	0	3	31	16	50	0%	0%	6%	62%	32%	100%
>6	0	0	1	8	4	13	0%	0%	8%	62%	31%	100%
Total	0	0	4	61	26	91	0%	0%	4%	67%	29%	100%
	Junagadh											
Upto 2	0	1	1	0	0	2	0%	50%	50%	0%	0%	100%
3-4	0	0	7	11	5	23	0%	0%	30%	48%	22%	100%
5-6	0	0	20	22	14	56	0%	0%	36%	39%	25%	100%
>6	0	0	4	9	0	13	0%	0%	31%	69%	0%	100%
Total	0	1	32	42	19	94	0%	1%	34%	45%	20%	100%
	All Districts											
Upto 2	0	1	4	5	0	10	0%	10%	40%	50%	0%	100%
3-4	0	3	25	40	11	79	0%	4%	32%	51%	14%	100%
5-6	2	0	36	76	30	144	1%	0%	25%	53%	21%	100%
>6	1	0	12	27	5	45	2%	0%	27%	60%	11%	100%
Total	3	4	77	148	46	278	1%	1%	28%	53%	17%	100%

Table 8.3.16						Repeat Visit to Health Centre									
Family Size	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total
				Ahmedabad								Bharuch			
upto 2	0	3	3	6	0%	50%	50%	100%	0	0	2	2	0%	0%	100%	100%
3-4	0	17	13	30	0%	57%	43%	100%	0	3	23	26	0%	12%	88%	100%
5-6	1	27	12	40	3%	68%	30%	100%	0	10	40	50	0%	20%	80%	100%
>6	1	1	7	9	11%	11%	78%	100%	0	2	11	13	0%	15%	85%	100%
Total	2	48	35	85	2%	56%	41%	100%	0	15	76	91	0%	16%	84%	100%
				Junagadh								All Districts			
upto 2	0	1	1	2	0%	50%	50%	100%	0	4	6	10	0%	40%	60%	100%
3-4	1	4	18	23	4%	17%	78%	100%	1	24	54	79	1%	30%	68%	100%
5-6	0	10	46	56	0%	18%	82%	100%	1	47	98	146	1%	32%	67%	100%
>6	0	3	10	13	0%	23%	77%	100%	1	6	28	35	3%	17%	80%	100%
Total	1	18	75	94	1%	19%	80%	100%	3	81	186	270	1%	30%	69%	100%

Table 8.3.17							Annual Out-of-Pocket Expenditure on Health									
Family Size	**Yes**	**No**	**Total**	**If Yes, Expenditure**					**Yes**	**No**	**Total**	**<1000**	**1000-3000**	**3000-10000**	**>10000**	**Total**
				<1000	**1000-3000**	**3000-10000**	**>10000**	**Total**								
								Ahmedabad								
Upto 2	4	2	6	2	1	0	1	4	67%	33%	100%	50%	25%	0%	25%	100%
3-4	21	9	30	7	14	0	0	21	70%	30%	100%	33%	67%	0%	0%	100%
5-6	33	7	40	21	9	2	1	33	83%	18%	100%	64%	27%	6%	3%	100%
>6	11	8	19	4	3	3	1	11	58%	42%	100%	36%	27%	27%	9%	100%
Total	69	26	95	34	27	5	3	69	73%	27%	100%	49%	39%	7%	4%	100%
								Bharuch								
Upto 2	1	1	2	0	0	1	0	1	50%	50%	100%	0%	0%	100%	0%	100%
3-4	12	14	26	7	2	0	3	12	46%	54%	100%	58%	17%	0%	25%	100%
5-6	29	20	49	19	7	2	0	28	59%	41%	100%	68%	25%	7%	0%	100%
>6	8	5	13	1	2	3	1	7	62%	38%	100%	14%	29%	43%	14%	100%
Total	50	40	90	27	11	6	4	48	56%	44%	100%	56%	23%	13%	8%	100%
								Junagadh								
Upto 2	1	1	2	1	0	0	0	1	50%	50%	100%	100%	0%	0%	0%	100%
3-4	9	14	23	7	1	1	0	9	39%	61%	100%	78%	11%	11%	0%	100%
5-6	26	30	56	18	6	0	0	24	46%	54%	100%	75%	25%	0%	0%	100%
>6	8	5	13	5	2	0	0	7	62%	38%	100%	71%	29%	0%	0%	100%
Total	44	50	94	31	9	1	0	41	47%	53%	100%	76%	22%	2%	0%	100%
								All Districts								
Upto 2	6	4	10	3	1	1	1	6	60%	40%	100%	50%	17%	17%	17%	100%
3-4	42	37	79	21	17	1	3	42	53%	47%	100%	50%	40%	2%	7%	100%
5-6	88	57	145	58	22	4	1	85	61%	39%	100%	68%	26%	5%	1%	100%
>6	27	18	45	10	7	6	2	25	60%	40%	100%	40%	28%	24%	8%	100%
Total	163	116	279	92	47	12	7	158	58%	42%	100%	58%	30%	8%	4%	100%

Table 8.3.18				Willingness to Pay for Better Services								
Family Size	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
				Ahmedabad						Bharuch		
Up to 2	6	0	6	100%	0%	100%	1	1	2	50%	50%	100%
3-4	29	1	30	97%	3%	100%	22	4	26	85%	15%	100%
5-6	33	5	38	87%	13%	100%	27	18	45	60%	40%	100%
>6	13	5	18	72%	28%	100%	8	5	13	62%	38%	100%
Total	81	11	92	88%	12%	100%	58	28	86	67%	33%	100%
				Junagadh						All Districts		
Up to 2	2	0	2	100%	0%	100%	9	1	10	90%	10%	100%
3-4	13	8	21	62%	38%	100%	64	13	77	83%	17%	100%
5-6	42	8	50	84%	16%	100%	102	31	133	77%	23%	100%
>6	7	4	11	64%	36%	100%	28	14	42	67%	33%	100%
Total	64	20	84	76%	24%	100%	203	59	262	77%	23%	100%

8.3.3 Monthly Income

Attendance in awareness generation programs is 81%, 88%, 96%, 88% and 88% for income groups less than Rs 3000, 3000-6000, 6000-10000, 10000-20000 and more than 20000. Attendance is marginally less at 77% among less than 3000 income group in Ahmedabad (Table 8.3.20 to 8.3.28).

Health workers are the key influencers among all groups. ASHA workers also have strong influence in the income groups less than 3000, 10000-20000 and more than 20000. In all income groups, key decision makers are respondents themselves followed by spouses. Health workers play strong role in less than 3000 and 3000-6000 group in Junagadh 10000-20000 in all districts.

Key purpose of visit to health centre is communicable diseases for less than 3000 group. For other income groups, immunization is the key purpose in all districts. In Junagadh, groups with less than 3000 and 3000-6000 income visit for family planning whereas higher income groups visit for immunization. However, maternal health is an important reason for visit in more than 20000 income group, may be because of better awareness. Perception regarding quality of service remains the same across age groups. However, a high 14% of less than 3000 group in Ahmedabad finds the service bad or poor. As far as repeat visit is concerned, 71% of less than 3000 income group, 67% of 3000-6000 groups, 68% of 6000-10000 group, 100% of 10000-20000 and nil of more than 20000 are certain to repeat visit to health centre.

In respect of visit to private health practitioners, 63% of income group less than 3000, 60% of 3000-6000 and around 50% of higher income groups had spent on private health care in one year. This is maximum in Ahmedabad and minimum in Junagadh. Similarly, 80% of less than 3000 income group, 76% of 3000-6000, 77% of 6000-10000 and 43% of 10000-20000 and more than 20000 groups were willing to pay for better services. Interestingly, lower income groups are willing to pay for better health services.

Income level of respondents is a key differentiator of various aspects of health care as can be ascertained from the test of hypothesis which shows that there is significant difference in all aspects of health care across income groups. (Table 8.3.19)

Table 8.3.19	Monthly Income				
Null Hypothesis	**Degrees of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Attended Awareness Program	4	18.26	0.001	Reject	
Health Seeking Behaviour - Influencer	4	41.31	<0.0001	Reject	
Health Seeking Behaviour - Decision Maker	4	34.24	<0.0001	Reject	
Purpose of visit to health centre	4	42.04	<0.0001	Reject	Significant Difference
Quality of service	4	18.8	0.001	Reject	
Repeat visit to health centre	4	18.56	0.001	Reject	
Availed private health care	4	14.1	0.007	Reject	
Willingness to pay for better services	4	18.68	0.001	Reject	

Table 8.3.20	Attended Awareness Program											
	Ahmedabad						Bharuch					
Monthly Income	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
< 3000	37	11	48	77%	23%	100%	30	7	37	81%	19%	100%
3000-6000	21	4	25	84%	16%	100%	29	1	30	97%	3%	100%
6000-10000	7	1	8	88%	13%	100%	11	1	12	92%	8%	100%
10000-20000	0	0	0	0%	0%	0%	4	1	5	80%	20%	100%
>20000	0	0	0	0%	0%	0%	4	1	5	80%	20%	100%
Total	65	16	81	80%	20%	100%	78	11	89	88%	12%	100%
	Junagadh						All Districts					
< 3000	25	4	29	86%	14%	100%	92	22	114	81%	19%	100%
3000-6000	25	5	30	83%	17%	100%	75	10	85	88%	12%	100%
6000-10000	26	0	26	100%	0%	100%	44	2	46	96%	4%	100%
10000-20000	3	0	3	100%	0%	100%	7	1	8	88%	13%	100%
>20000	3	0	3	100%	0%	100%	7	1	8	88%	13%	100%
Total	82	9	91	90%	10%	100%	225	36	261	86%	14%	100%

Table 8.3.21	Health Care Seeking Behaviour - Influencer													
	Ahmedabad													
Monthly Income	Spouse	Parents	Frnd/ Rel	HW	ASHA	Othrs	Total	Spouse	Parents	Frnd/ Rel	HW	ASHA	Othrs	Total
< 3000	27	26	14	14	13	6	100	27%	26%	14%	14%	13%	6%	100%
3000-6000	18	17	5	6	4	1	51	35%	33%	10%	12%	8%	2%	100%
6000-10000	4	2	2	2	2	0	12	33%	17%	17%	17%	17%	0%	100%
10000-20000	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
>20000	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
Total	49	45	21	22	19	7	163	30%	28%	13%	13%	12%	4%	100%
	Bharuch													
< 3000		5	2	23	19	5	57	0%	9%	4%	40%	33%	9%	100%
3000-6000	7	5	0	17	11	2	42	17%	12%	0%	40%	26%	5%	100%
6000-10000	3	2	0	8	2	0	15	20%	13%	0%	53%	13%	0%	100%
10000-20000	1	0	0	3	4	1	9	11%	0%	0%	33%	44%	11%	100%
>20000	1	1	0	2	2	0	6	17%	17%	0%	33%	33%	0%	100%
Total	15	13	2	53	38	8	129	12%	10%	2%	41%	29%	6%	100%
	Junagadh													
< 3000	3	4	1	23	15	0	46	7%	9%	2%	50%	33%	0%	100%
3000-6000	8	10	3	25	11	1	58	14%	17%	5%	43%	19%	2%	100%
6000-10000	8	5	0	19	9	0	41	20%	12%	0%	46%	22%	0%	100%
10000-20000	0	2	0	1	1	0	4	0%	50%	0%	25%	25%	0%	100%
>20000	1	0	0	1	1	1	4	25%	0%	0%	25%	25%	25%	100%
Total	20	21	4	69	37	2	153	13%	14%	3%	45%	24%	1%	100%
	All Districts													
< 3000	33	35	17	60	47	11	203	16%	17%	8%	30%	23%	5%	100%
3000-6000	33	32	8	48	26	4	151	22%	21%	5%	32%	17%	3%	100%
6000-10000	15	9	2	29	13	0	68	22%	13%	3%	43%	19%	0%	100%
10000-20000	1	2	0	4	5	1	13	8%	15%	0%	31%	38%	8%	100%
>20000	2	1	0	3	3	1	10	20%	10%	0%	30%	30%	10%	100%
Total	84	79	27	144	94	17	445	19%	18%	6%	32%	21%	4%	100%

Table 8.3.22								**Health Seeking Behaviour - Decision Maker**						
								Ahmedabad						
Monthly Income	**Own self**	**Spouse**	**Parents**	**Friend/ Relative**	**HW**	**ASHA**	**Total**	**Own self**	**Husband/ wife**	**Parents**	**Friend/ Relative**	**HW**	**ASHA**	**Total**
< 3000	29	24	16	5	4	3	81	36%	30%	20%	6%	5%	4%	100%
3000-6000	17	16	10	2	2	0	47	36%	34%	21%	4%	4%	0%	100%
6000-10000	5	3	4	0	2	1	15	33%	20%	27%	0%	13%	7%	100%
10000-20000	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
>20000	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
Total	51	43	30	7	8	4	143	36%	30%	21%	5%	6%	3%	100%
								Bharuch						
< 3000	19	9	3	2	6	9	48	40%	19%	6%	4%	13%	19%	100%
3000-6000	22	8	3	3	4	6	46	48%	17%	7%	7%	9%	13%	100%
6000-10000	5	4	2	0	2	1	14	36%	29%	14%	0%	14%	7%	100%
10000-20000	2	2	0	0	1	1	6	33%	33%	0%	0%	17%	17%	100%
>20000	4	1	0	0	0	0	5	80%	20%	0%	0%	0%	0%	100%
Total	52	24	8	5	13	17	119	44%	20%	7%	4%	11%	14%	100%
								Junagadh						
< 3000	16	3	0	1	15	3	38	42%	8%	0%	3%	39%	8%	100%
3000-6000	24	10	4	1	11	6	56	43%	18%	7%	2%	20%	11%	100%
6000-10000	15	10	4	0	5	4	38	39%	26%	11%	0%	13%	11%	100%
10000-20000	2	0	1	0	1	1	5	40%	0%	20%	0%	20%	20%	100%
>20000	1	1	0	1	1	1	5	20%	20%	0%	20%	20%	20%	100%
Total	58	24	9	3	33	15	142	41%	17%	6%	2%	23%	11%	100%
								All Districts						
< 3000	64	36	19	8	25	15	167	38%	22%	11%	5%	15%	9%	100%
3000-6000	63	34	17	6	17	12	149	42%	23%	11%	4%	11%	8%	100%
6000-10000	25	17	10	0	9	6	67	37%	25%	15%	0%	13%	9%	100%
10000-20000	4	2	1	0	2	2	11	36%	18%	9%	0%	18%	18%	100%
>20000	5	2	0	1	1	1	10	50%	20%	0%	10%	10%	10%	100%
Total	161	91	47	15	54	36	404	40%	23%	12%	4%	13%	9%	100%

Table 8.3.23	Purpose of Visit to Health Centre													
Monthly Income	Ahmedabad													
	Immuni zation	Family Planning	Communi diseases	Maternal Health	Nutrition	Others	Total	Immuni zation	Family Planning	Communi diseases	Maternal Health	Nutrition	Others	Total
< 3000	17	15	18	7	5	3	65	26%	23%	28%	11%	8%	5%	100%
3000-6000	10	5	7	5	0	1	28	36%	18%	25%	18%	0%	4%	100%
6000-10000	1	1	6	1	2	0	11	9%	9%	55%	9%	18%	0%	100%
10000-20000	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
>20000	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
Total	28	21	31	13	7	4	104	27%	20%	30%	13%	7%	4%	100%
	Bharuch													
< 3000	20	13	19	7	9	1	69	29%	19%	28%	10%	13%	1%	100%
3000-6000	14	11	11	6	7	0	49	29%	22%	22%	12%	14%	0%	100%
6000-10000	5	4	3	0	3	0	15	33%	27%	20%	0%	20%	0%	100%
10000-20000	1	0	2	1	1	0	5	20%	0%	40%	20%	20%	0%	100%
>20000	3	2	3	2	1	0	11	27%	18%	27%	18%	9%	0%	100%
Total	43	30	38	16	21	1	149	29%	20%	26%	11%	14%	1%	100%
	Junagadh													
< 3000	6	12	15	2	2	0	37	16%	32%	41%	5%	5%	0%	100%
3000-6000	14	13	15	6	8	0	56	25%	23%	27%	11%	14%	0%	100%
6000-10000	15	7	8	8	6	1	45	33%	16%	18%	18%	13%	2%	100%
10000-20000	2	1	1	0	1	0	5	40%	20%	20%	0%	20%	0%	100%
>20000	2	1	0	1	1	0	5	40%	20%	0%	20%	20%	0%	100%
Total	39	34	39	17	18	1	148	26%	23%	26%	11%	12%	1%	100%
	All Districts													
< 3000	43	40	52	16	16	4	171	25%	23%	30%	9%	9%	2%	100%
3000-6000	38	29	33	17	15	1	133	29%	22%	25%	13%	11%	1%	100%
6000-10000	21	12	17	9	11	1	71	30%	17%	24%	13%	15%	1%	100%
10000-20000	3	1	3	1	2	0	10	30%	10%	30%	10%	20%	0%	100%
>20000	5	3	3	3	2	0	16	31%	19%	19%	19%	13%	0%	100%
Total	110	85	108	46	46	6	401	27%	21%	27%	11%	11%	1%	100%

Table 8.3.24	Quality of Service											
	Ahmedabad											
Monthly Income	Bad	Poor	Normal	Good	Very Good	Total	Bad	Poor	Normal	Good	Very Good	Total
< 3000	3	3	20	19	1	46	7%	7%	43%	41%	2%	100%
3000-6000	0	0	14	11	0	25	0%	0%	56%	44%	0%	100%
6000-10000	0	0	2	6	0	8	0%	0%	25%	75%	0%	100%
10000-20000	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%
>20000	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%
Total	3	3	36	36	1	79	4%	4%	46%	46%	1%	100%
	Bharuch											
< 3000	0	0	0	25	12	37	0%	0%	0%	68%	32%	100%
3000-6000	0	0	2	20	8	30	0%	0%	7%	67%	27%	100%
6000-10000	0	0	2	8	2	12	0%	0%	17%	67%	17%	100%
10000-20000	0	0	0	4	1	5	0%	0%	0%	80%	20%	100%
>20000	0	0	0	3	2	5	0%	0%	0%	60%	40%	100%
Total	0	0	4	60	25	89	0%	0%	4%	67%	28%	100%
	Junagadh											
< 3000	0	0	13	13	3	29	0%	0%	45%	45%	10%	100%
3000-6000	0	1	7	14	8	30	0%	3%	23%	47%	27%	100%
6000-10000	0	0	10	11	6	27	0%	0%	37%	41%	22%	100%
10000-20000	0	0	1	1	1	3	0%	0%	33%	33%	33%	100%
>20000	0	0	1	1	1	3	0%	0%	33%	33%	33%	100%
Total	0	1	32	40	19	92	0%	1%	35%	43%	21%	100%
	All Districts											
< 3000	3	3	33	57	16	112	3%	3%	29%	51%	14%	100%
3000-6000	0	1	23	45	16	85	0%	1%	27%	53%	19%	100%
6000-10000	0	0	14	25	8	47	0%	0%	30%	53%	17%	100%
10000-20000	0	0	1	5	2	8	0%	0%	13%	63%	25%	100%
>20000	0	0	1	4	3	8	0%	0%	13%	50%	38%	100%
Total	3	4	72	136	45	260	1%	2%	28%	52%	17%	100%

Table 8.3.25	Repeat Visit to Health Centre															
	Ahmedabad								Bharuch							
Monthly Income	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total
< 3000	1	24	23	48	2%	50%	48%	100%	0	4	33	37	0%	11%	89%	100%
3000-6000	0	18	7	25	0%	72%	28%	100%	0	5	25	30	0%	17%	83%	100%
6000-10000	0	5	3	8	0%	63%	38%	100%	0	3	9	12	0%	25%	75%	100%
10000-20000	0	0	0	0	0%	0%	0%	0%	0	0	5	5	0%	0%	100%	100%
>20000	0	0	0	0	0%	0%	0%	0%	0	3	0	3	0%	100%	0%	100%
Total	1	47	33	81	1%	58%	41%	100%	0	15	72	87	0%	17%	83%	100%
	Junagadh								All Districts							
< 3000	0	4	25	29	0%	14%	86%	100%	1	32	81	114	1%	28%	71%	100%
3000-6000	0	5	25	30	0%	17%	83%	100%	0	28	57	85	0%	33%	67%	100%
6000-10000	1	6	20	27	4%	22%	74%	100%	1	14	32	47	2%	30%	68%	100%
10000-0000	0	0	3	3	0%	0%	100%	100%	0	0	8	8	0%	0%	100%	100%
>20000	0	1	0	1	0%	100%	0%	100%	0	4	0	4	0%	100%	0%	100%
Total	1	16	73	90	1%	18%	81%	100%	2	78	178	258	1%	30%	69%	100%

Table 8.3.26							Annual Out-of-Pocket Expenditure on Health									
							Ahmedabad									
Monthly Income	**Yes**	**No**	**Total**	**<1000**	**1000-3000**	**3000-5000**	**5000-10000**	**Total**	**Yes**	**No**	**Total**	**<1000**	**1000-3000**	**3000-5000**	**5000-10000**	**Total**
							If Yes, Expenditure									
< 3000	36	12	48	17	15	2	2	36	75%	25%	100%	47%	42%	6%	6%	100%
3000-6000	19	6	25	10	8	1	0	19	76%	24%	100%	53%	42%	5%	0%	100%
6000-10000	5	3	8	1	2	1	1	5	63%	38%	100%	20%	40%	20%	20%	100%
10000-20000	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%
>20000	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%
Total	60	21	81	28	25	4	3	60	74%	26%	100%	47%	42%	7%	5%	100%
							Bharuch									
< 3000	22	14	36	10	5	3	4	22	61%	39%	100%	45%	23%	14%	18%	100%
3000-6000	18	12	30	10	4	2	0	16	60%	40%	100%	63%	25%	13%	0%	100%
6000-10000	6	6	12	5	1	0	0	6	50%	50%	100%	83%	17%	0%	0%	100%
10000-20000	2	3	5	0	1	1	0	2	40%	60%	100%	0%	50%	50%	0%	100%
>20000	2	3	5	2	0	0	0	2	40%	60%	100%	100%	0%	0%	0%	100%
Total	50	38	88	27	11	6	4	48	57%	43%	100%	56%	23%	13%	8%	100%
							Junagadh									
< 3000	13	16	29	13	0	0	0	13	45%	55%	100%	100%	0%	0%	0%	100%
3000-6000	14	16	30	8	2	1	1	12	47%	53%	100%	67%	17%	8%	8%	100%
6000-10000	11	16	27	6	5	0	0	11	41%	59%	100%	55%	45%	0%	0%	100%
10000-20000	2	1	3	1	1	0	0	2	67%	33%	100%	50%	50%	0%	0%	100%
>20000	2	1	3	2	0	0	0	2	67%	33%	100%	100%	0%	0%	0%	100%
Total	42	50	92	30	8	1	1	40	46%	54%	100%	75%	20%	3%	3%	100%
							All Districts									
< 3000	71	42	113	40	20	5	6	71	63%	37%	100%	56%	28%	7%	8%	100%
3000-6000	51	34	85	28	14	4	1	47	60%	40%	100%	60%	30%	9%	2%	100%
6000-10000	22	25	47	12	8	1	1	22	47%	53%	100%	55%	36%	5%	5%	100%
10000-20000	4	4	8	1	2	1	0	4	50%	50%	100%	25%	50%	25%	0%	100%
>20000	4	4	8	4	0	0	0	4	50%	50%	100%	100%	0%	0%	0%	100%
Total	152	109	261	85	44	11	8	148	58%	42%	100%	57%	30%	7%	5%	100%

Table 8.3.27	Willingness to Pay for Better Services											
Monthly Income	**Ahmedabad**						**Bharuch**					
	Yes	**No**	**Total**	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**
< 3000	42	4	46	91%	9%	100%	24	11	35	69%	31%	100%
3000-6000	21	3	24	88%	13%	100%	21	7	28	75%	25%	100%
6000-10000	6	2	8	75%	25%	100%	7	4	11	64%	36%	100%
10000-20000	0	0	0	0%	0%	0%	2	3	5	40%	60%	100%
>20000	0	0	0	0%	0%	0%	3	2	5	60%	40%	100%
Total	69	9	78	88%	12%	100%	57	27	84	68%	32%	100%
	Junagadh						**All Districts**					
< 3000	20	6	26	77%	23%	100%	86	21	107	80%	20%	100%
3000-6000	19	9	28	68%	32%	100%	61	19	80	76%	24%	100%
6000-10000	20	4	24	83%	17%	100%	33	10	43	77%	23%	100%
10000-20000	2	0	2	100%	0%	100%	4	3	7	57%	43%	100%
>20000	1	1	2	50%	50%	100%	4	3	7	57%	43%	100%
Total	62	20	82	76%	24%	100%	188	56	244	77%	23%	100%

8.3.4 Poverty

Attendance in awareness generation programs was 82% among the people below poverty line and 90% among others. Comparison of districts shows that attendance of BPL is 84% in Ahmedabad which is more than non-BPL at 64%. Key influencers in health care were Health workers, Spouse and parents among BPL and Health workers and ASHA among the non-BPL. However, there is inter-district variation in case of BPL. In Ahmedabad family has a significant influence compared to other districts. The trend in case of decision making shows that respondents themselves and spouses were key decision makers for both BPL and non-BPL. Health workers play a key role in decision making among BPL in Junagadh and parents play significant role in Ahmedabad. (Tables 8.2.30 to 37)

The main purpose of visit to health centre is communicable diseases among BPL and immunization among others. Districtwise analysis shows that immunization is the key activity in all cases except BPL in Junagadh. Quality of service is found to be good or very good by 64% of BPL and 81% of non-BPL groups.

Interestingly, only 54% of BPL respondents as compared to 84% non-BPL are certain to make repeat visit to health centre. In Ahmedabad, only 32% of BPL is certain to make repeat visit. 63% of BPL and 53% of non-BPL visited private hospitals recently wherein most of them spent less than Rs 1000. 82% of BPL and 74% of non-BPL are willing to pay for better services. The proportion for BPL was a high of 91% in Ahmedabad and 71% in Bharuch.

From the test of hypothesis it can be observed that in these selected variables there is a significant difference between BPL and non-BPL respondents (Table 8.2.29).

Table 8.3.28	Poverty				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Attended Awareness Program	2	52.1	<0.0001	Reject	Significant Difference
Health Seeking Behaviour – Influencer	2	103.6	<0.0001	Reject	
Health Seeking Behaviour - Decision Maker	2	86.27	<0.0001	Reject	
Purpose of visit to health centre	2	76.07	<0.0001	Reject	
Quality of service	2	47.43	<0.0001	Reject	
Repeat visit to health centre	2	46.47	<0.0001	Reject	
Availed private health care	2	28.22	<0.0001	Reject	
Willingness to pay for better services	2	35.93	<0.0001	Reject	

Table 8.3.29	Attended awareness program											
Poverty	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
	Ahmedabad						Bharuch					
BPL	58	11	69	84%	16%	100%	29	7	36	81%	19%	100%
Non BPL	8	5	13	62%	38%	100%	46	4	50	92%	8%	100%
Total	66	16	82	80%	20%	100%	75	11	86	87%	13%	100%
	Junagadh						All Districts					
BPL	26	7	33	79%	21%	100%	113	25	138	82%	18%	100%
Non BPL	55	3	58	95%	5%	100%	109	12	121	90%	10%	100%
Total	81	10	91	89%	11%	100%	222	37	259	86%	14%	100%

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Table 8.3.30	Health Seeking Behaviour - Influencer													
Poverty	Spouse	Parents	Frnd/ Rel	HW	ASHA	Othrs	Total	Spouse	Parents	Frnd/ Rel	HW	ASHA	Othrs	Total
Ahmedabad														
BPL	48	44	17	19	12	5	145	33%	30%	12%	13%	8%	3%	100%
Non BPL	3	2	3	6	3	0	17	18%	12%	18%	35%	18%	0%	100%
Total	51	46	20	25	15	5	162	31%	28%	12%	15%	9%	3%	100%
Bharuch														
BPL	11	6	0	30	18	3	68	16%	9%	0%	44%	26%	4%	100%
Non BPL	4	6	1	21	18	5	55	7%	11%	2%	38%	33%	9%	100%
Total	15	12	1	51	36	8	123	12%	10%	1%	41%	29%	7%	100%
Junagadh														
BPL	3	10	3	22	12	1	51	6%	20%	6%	43%	24%	2%	100%
Non BPL	17	10	1	46	25	1	100	17%	10%	1%	46%	25%	1%	100%
Total	20	20	4	68	37	2	151	13%	13%	3%	45%	25%	1%	100%
All Districts														
BPL	62	60	20	71	42	9	264	23%	23%	8%	27%	16%	3%	100%
Non BPL	24	18	5	73	46	6	172	14%	10%	3%	42%	27%	3%	100%
Total	86	78	25	144	88	15	436	20%	18%	6%	33%	20%	3%	100%

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Table 8.3.31				Health Seeking Behaviour - Decision Maker									
Poverty	Own self	Spouse	Parents	Friend/ Relative	HW	ASHA	Total	Own self	Husband/ wife	Parents	Friend/ Relative	HW	ASHA	Total
							Ahmedabad							
BPL	43	41	29	5	3	3	124	35%	33%	23%	4%	2%	2%	100%
Non BPL	7	4	5	3	4	1	24	29%	17%	21%	13%	17%	4%	100%
Total	50	45	34	8	7	4	148	34%	30%	23%	5%	5%	3%	100%
							Bharuch							
BPL	19	7	2	3	7	7	45	42%	16%	4%	7%	16%	16%	100%
Non BPL	32	16	5	2	6	9	70	46%	23%	7%	3%	9%	13%	100%
Total	51	23	7	5	13	16	115	44%	20%	6%	4%	11%	14%	100%
							Junagadh							
BPL	18	7	3	0	16	4	48	38%	15%	6%	0%	33%	8%	100%
Non BPL	40	17	6	3	17	11	94	43%	18%	6%	3%	18%	12%	100%
Total	58	24	9	3	33	15	142	41%	17%	6%	2%	23%	11%	100%
							All Districts							
BPL	80	55	34	8	26	14	217	37%	25%	16%	4%	12%	6%	100%
Non BPL	79	37	16	8	27	21	188	42%	20%	9%	4%	14%	11%	100%
Total	159	92	50	16	53	35	405	39%	23%	12%	4%	13%	9%	100%

Table 8.3.32							Purpose of Visit to Health Centre						
Poverty	**Immuni zation**	**Family Planning**	**Communi diseases**	**Maternal Health**	**Nutrition**	**Others**	**Total**	**Immuni zation**	**Family Planning**	**Communi diseases**	**Maternal Health**	**Nutrition**	**Others**	**Total**
							Ahmedabad							
BPL	29	19	28	12	5	3	96	30%	20%	29%	13%	5%	3%	100%
Non BPL	5	3	4	4	1	2	19	26%	16%	21%	21%	5%	11%	100%
Total	34	22	32	16	6	5	115	30%	19%	28%	14%	5%	4%	100%
							Bharuch							
BPL	20	12	12	8	10	1	63	32%	19%	19%	13%	16%	2%	100%
Non BPL	22	16	24	8	9	0	79	28%	20%	30%	10%	11%	0%	100%
Total	42	28	36	16	19	1	142	30%	20%	25%	11%	13%	1%	100%
							Junagadh							
BPL	8	10	19	4	4	0	45	18%	22%	42%	9%	9%	0%	100%
Non BPL	31	24	20	13	14	1	103	30%	23%	19%	13%	14%	1%	100%
Total	39	34	39	17	18	1	148	26%	23%	26%	11%	12%	1%	100%
							All Districts							
BPL	57	41	59	24	19	4	204	28%	20%	29%	12%	9%	2%	100%
Non BPL	58	43	48	25	24	3	201	29%	21%	24%	12%	12%	1%	100%
Total	115	84	107	49	43	7	405	28%	21%	26%	12%	11%	2%	100%

Table 8.3.33	Quality of Service										
Poverty	Bad	Poor	Normal	Good	Very Good	Total	Bad	Poor	Normal	Good	Very Good	Total
	Ahmedabad										
BPL	2	1	30	35	0	68	3%	1%	44%	51%	0%	100%
Non BPL	1	0	4	6	1	12	8%	0%	33%	50%	8%	100%
Total	3	1	34	41	1	80	4%	1%	43%	51%	1%	100%
	Bharuch										
BPL	0	0	0	21	15	36	0%	0%	0%	58%	42%	100%
Non BPL	0	0	3	38	9	50	0%	0%	6%	76%	18%	100%
Total	0	0	3	59	24	86	0%	0%	3%	69%	28%	100%
	Junagadh										
BPL	0	1	16	11	5	33	0%	3%	48%	33%	15%	100%
Non BPL	0	0	15	29	14	58	0%	0%	26%	50%	24%	100%
Total	0	1	31	40	19	91	0%	1%	34%	44%	21%	100%
	All Districts										
BPL	2	2	46	67	20	137	1%	1%	34%	49%	15%	100%
Non BPL	1	0	22	73	24	120	1%	0%	18%	61%	20%	100%
Total	3	2	68	140	44	257	1%	1%	26%	54%	17%	100%

Table 8.3.34							Repeat Visit to Health Centre										
Poverty	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total	Never	May be	Certainly	Total
					Ahmedabad								Bharuch			
BPL	1	46	22	69	1%	67%	32%	100%	0	5	31	36	0%	14%	86%	100%
Non BPL	0	3	10	13	0%	23%	77%	100%	0	10	40	50	0%	20%	80%	100%
Total	1	49	32	82	1%	60%	39%	100%	0	15	71	86	0%	17%	83%	100%
					Junagadh								All Districts			
BPL	1	11	21	33	3%	33%	64%	100%	2	62	74	138	1%	45%	54%	100%
Non BPL	0	6	52	58	0%	10%	90%	100%	0	19	102	121	0%	16%	84%	100%
Total	1	17	73	91	1%	19%	80%	100%	2	81	176	259	1%	31%	68%	100%

Table 8.3.35	Annual Out-of-Pocket Expenditure on Health															
				If Yes, Expenditure												
Family Size	Yes	No	Total	<1000	1000-3000	3000-10000	>10000	Total	Yes	No	Total	<1000	1000-3000	3000-10000	>10000	Total
Ahmedabad																
BPL	50	19	69	27	16	5	2	50	72%	28%	100%	54%	32%	10%	4%	100%
Non BPL	10	3	13	3	7	0	0	10	77%	23%	100%	30%	70%	0%	0%	100%
Total	60	22	82	30	23	5	2	60	73%	27%	100%	50%	38%	8%	3%	100%
Bharuch																
BPL	21	14	35	11	5	3	2	21	60%	40%	100%	52%	24%	14%	10%	100%
Non BPL	27	23	50	15	6	2	2	25	54%	46%	100%	60%	24%	8%	8%	100%
Total	48	37	85	26	11	5	4	46	56%	44%	100%	57%	24%	11%	9%	100%
Junagadh																
BPL	15	18	33	11	3	0	0	14	45%	55%	100%	79%	21%	0%	0%	100%
Non BPL	27	31	58	18	6	1	0	25	47%	53%	100%	72%	24%	4%	0%	100%
Total	42	49	91	29	9	1	0	39	46%	54%	100%	74%	23%	3%	0%	100%
All Districts																
BPL	86	51	137	49	24	8	4	85	63%	37%	100%	58%	28%	9%	5%	100%
Non BPL	64	57	121	36	19	3	2	60	53%	47%	100%	60%	32%	5%	3%	100%
Total	150	108	258	85	43	11	6	145	58%	42%	100%	59%	30%	8%	4%	100%

Table 8.3.36	Willingness to Pay for Better Services											
Poverty	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**
	Ahmedabad						Bharuch					
BPL	60	6	66	91%	9%	100%	24	10	34	71%	29%	100%
Non BPL	11	2	13	85%	15%	100%	31	16	47	66%	34%	100%
Total	71	8	79	90%	10%	100%	55	26	81	68%	32%	100%
	Junagadh						All Districts					
Poverty	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
BPL	23	8	31	74%	26%	100%	107	24	131	82%	18%	100%
Non BPL	39	11	50	78%	22%	100%	81	29	110	74%	26%	100%
Total	62	19	81	77%	23%	100%	188	53	241	78%	22%	100%

8.3.5 Literacy Level

Analysis of attendance in awareness generation programs based on literacy shows that the trend is non-linear with 79%, 83%, 91%, 87% and 75% among non-literates, primary, secondary, graduate and post-graduate educated beneficiaries. However, in Bharuch attendance was highest among non-literates. Key influencers were spouses in case of non-literates whereas it was health workers for others. In Ahmedabad, key influencers were spouses in case of non-literates and primary school educated. However, in case of others it was health workers. Thus with higher literacy, respondents seek guidance from health personnel. Important decision makers were respondents themselves, spouses and parents among non-literates. Higher the literacy higher is the share of cases where respondents make decision themselves (Table 8.2.39 to 47)

Main purpose of visit to health centres was communicable diseases in case of non-literate and primary school educated. In case of secondary school educated and graduates, the main purpose was immunization. Quality of awareness programs was found to be good or very good by 61% non-literates, 65% primary school educated, 87% secondary school educated and 65% graduates. It is found that 45% non-literates, 65% primary school educated, 83% secondary school educated and 83% graduates were certain to visit health centres again.

It is seen that 63% non-literates, 60% primary school educated, 53% secondary school educated and 55% graduates had visited private health practitioners recently and in all 57% had spent less than Rs 1000. It is found that 84% non-literates, 74% primary school educated, 73% secondary school educated and 82% graduates were willing to pay for better services.

Test of hypothesis carried out in these variables shows that significant difference exists across literacy levels in all the districts (Table 8.3.38)

Table 8.3.37	Literacy				
Null Hypothesis	**Deg. of Freedom**	**χ^2**	**p**	**Reject/ Accept**	**Remarks**
Attended Awareness Program	6	47.94	<0.0001	Reject	Significant Difference
Health Seeking Behaviour - Influencer	6	115.01	<0.0001	Reject	
Health Seeking Behaviour - Decision Maker	6	128.01	<0.0001	Reject	
Purpose of visit to health centre	6	98.65	<0.0001	Reject	
Quality of service	6	63.04	<0.0001	Reject	
Repeat visit to health centre	6	63	<0.0001	Reject	
Availed private health care	6	46.05	<0.0001	Reject	
Willingness to pay for better services	6	47.99	<0.0001	Reject	

Table 8.3.38				**Attended awareness program**								
Literacy	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
				Ahmedabad						**Bharuch**		
Non-Literate	30	11	41	73%	27%	100%	11	1	12	92%	8%	100%
Primary	30	7	37	81%	19%	100%	26	5	31	84%	16%	100%
Secondary	5	0	5	100%	0%	100%	36	4	40	90%	10%	100%
Graduate	4	0	4	100%	0%	100%	5	2	7	71%	29%	100%
Post-Graduate	0	1	1	0%	100%	100%	1	0	1	100%	0%	100%
Total	69	19	88	78%	22%	100%	79	12	91	87%	13%	100%
				Junagadh						**All Districts**		
Non-Literate	8	1	9	89%	11%	100%	49	13	62	79%	21%	100%
Primary	30	5	35	86%	14%	100%	86	17	103	83%	17%	100%
Secondary	32	3	35	91%	9%	100%	73	7	80	91%	9%	100%
Graduate	11	1	12	92%	8%	100%	20	3	23	87%	13%	100%
Post-Graduate	2	0	2	100%	0%	100%	3	1	4	75%	25%	100%
Total	83	10	93	89%	11%	100%	231	41	272	85%	15%	100%

Table 8.3.39	Health Seeking Behaviour - Influencer												
Literacy	Spouse	Parents	Frnd/Rel	HW	AS HA	Othrs	Total	Spouse	Parents	Frnd/Rel	HW	ASHA	Othrs	Total
							Ahmedabad						
Non-Literate	31	27	12	13	3	2	88	35%	31%	14%	15%	3%	2%	100%
Primary	22	22	9	8	14	6	81	27%	27%	11%	10%	17%	7%	100%
Secondary	2	3	2	4	3	0	14	14%	21%	14%	29%	21%	0%	100%
Graduate	0	1	0	2	1	0	4	0%	25%	0%	50%	25%	0%	100%
Post-Graduate	1	0	0	0	0	0	1	100%	0%	0%	0%	0%	0%	100%
Total	56	53	23	27	21	8	188	30%	28%	12%	14%	11%	4%	100%
							Bharuch						
Non-Literate	3	2	1	4	6	4	20	15%	10%	5%	20%	30%	20%	100%
Primary	2	5	1	22	14	2	46	4%	11%	2%	48%	30%	4%	100%
Secondary	10	3	0	25	15	2	55	18%	5%	0%	45%	27%	4%	100%
Graduate	1	2	0	3	3	0	9	11%	22%	0%	33%	33%	0%	100%
Post-Graduate	0	1	0	0	0	0	1	0%	100%	0%	0%	0%	0%	100%
Total	16	13	2	54	38	8	131	12%	10%	2%	41%	29%	6%	100%
							Junagadh						
Non-Literate	1	1	1	7	7	0	17	6%	6%	6%	41%	41%	0%	100%
Primary	8	3	0	27	10	0	48	17%	6%	0%	56%	21%	0%	100%
Secondary	9	12	1	29	18	2	71	13%	17%	1%	41%	25%	3%	100%
Graduate	2	4	1	6	2	0	15	13%	27%	7%	40%	13%	0%	100%
Post-Graduate	0	1	0	1	1	0	3	0%	33%	0%	33%	33%	0%	100%
Total	20	21	3	70	38	2	154	13%	14%	2%	45%	25%	1%	100%
							All Districts						
Non-Literate	35	30	14	24	16	6	125	28%	24%	11%	19%	13%	5%	100%
Primary	32	30	10	57	38	8	175	18%	17%	6%	33%	22%	5%	100%
Secondary	21	18	3	58	36	4	140	15%	13%	2%	41%	26%	3%	100%
Graduate	3	7	1	11	6	0	28	11%	25%	4%	39%	21%	0%	100%
Post-Graduate	1	2	0	1	1	0	5	20%	40%	0%	20%	20%	0%	100%
Total	92	87	28	151	97	18	473	19%	18%	6%	32%	21%	4%	100%

Table 8.3.40							Health Seeking Behaviour - Decision Maker						
Literacy	Own self	Spouse	Parents	Friend/ Relative	HW	ASHA	Total	Own self	Husband/ wife	Parents	Friend/ Relative	HW	ASHA	Total
							Ahmedabad							
Non-Literate	19	26	25	6	6	2	84	23%	31%	30%	7%	7%	2%	100%
Primary	26	21	12	3	4	3	69	38%	30%	17%	4%	6%	4%	100%
Secondary	5	1	0	0	0	0	6	83%	17%	0%	0%	0%	0%	100%
Graduate	3	0	1	0	0	0	4	75%	0%	25%	0%	0%	0%	100%
Post-Graduate	1	0	0	0	0	0	1	100%	0%	0%	0%	0%	0%	100%
Total	54	48	38	9	10	5	164	33%	29%	23%	5%	6%	3%	100%
							Bharuch							
Non-Literate	7	4	2	1	4	3	21	33%	19%	10%	5%	19%	14%	100%
Primary	15	7	3	1	5	6	37	41%	19%	8%	3%	14%	16%	100%
Secondary	29	10	2	2	5	8	56	52%	18%	4%	4%	9%	14%	100%
Graduate	3	3	0	1	0	0	7	43%	43%	0%	14%	0%	0%	100%
Post-Graduate	0	0	1	0	0	0	1	0%	0%	100%	0%	0%	0%	100%
Total	54	24	8	5	14	17	122	44%	20%	7%	4%	11%	14%	100%
							Junagadh							
Non-Literate	6	2	1	0	3	1	13	46%	15%	8%	0%	23%	8%	100%
Primary	18	9	2	1	14	5	49	37%	18%	4%	2%	29%	10%	100%
Secondary	25	12	4	2	13	6	62	40%	19%	6%	3%	21%	10%	100%
Graduate	8	1	3	0	2	2	16	50%	6%	19%	0%	13%	13%	100%
Post-Graduate	1	0	0	0	1	1	3	33%	0%	0%	0%	33%	33%	100%
Total	58	24	10	3	33	15	143	41%	17%	7%	2%	23%	10%	100%
							All Districts							
Non-Literate	32	32	28	7	13	6	118	27%	27%	24%	6%	11%	5%	100%
Primary	59	37	17	5	23	14	155	38%	24%	11%	3%	15%	9%	100%
Secondary	59	23	6	4	18	14	124	48%	19%	5%	3%	15%	11%	100%
Graduate	14	4	4	1	2	2	27	52%	15%	15%	4%	7%	7%	100%
Post-Graduate	2	0	1	0	1	1	5	40%	0%	20%	0%	20%	20%	100%
Total	166	96	56	17	57	37	429	39%	22%	13%	4%	13%	9%	100%

Table 8.3.41	Purpose of Visit to Health Centre													
Literacy	Immuni zation	Family Plan	Commi diseases	Maternal Health	Nutrition	Others	Total	Immuni zation	Family Plan	Communi diseases	Maternal Health	Nutrition	Others	Total
Ahmedabad														
Non-Literate	13	8	18	10	2	1	52	25%	15%	35%	19%	4%	2%	100%
Primary	16	12	13	6	4	3	54	30%	22%	24%	11%	7%	6%	100%
Secondary	2	2	1	0	0	0	5	40%	40%	20%	0%	0%	0%	100%
Graduate	1	0	0	0	1	0	2	50%	0%	0%	0%	50%	0%	100%
Post-Grad	1	0	0	0	0	0	1	100%	0%	0%	0%	0%	0%	100%
Total	33	22	32	16	7	4	114	29%	19%	28%	14%	6%	4%	100%
Bharuch														
Non-Literate	8	3	9	3	3	0	26	31%	12%	35%	12%	12%	0%	100%
Primary	14	10	12	4	8	1	49	29%	20%	24%	8%	16%	2%	100%
Secondary	18	14	16	10	10	0	68	26%	21%	24%	15%	15%	0%	100%
Graduate	4	3	2	0	0	0	9	44%	33%	22%	0%	0%	0%	100%
Post-Grad	0	0	1	0	0	0	1	0%	0%	100%	0%	0%	0%	100%
Total	44	30	40	17	21	1	153	29%	20%	26%	11%	14%	1%	100%
Junagadh														
Non-Literate	2	2	5	3	1	0	13	15%	15%	38%	23%	8%	0%	100%
Primary	9	11	19	4	5	1	49	18%	22%	39%	8%	10%	2%	100%
Secondary	21	18	12	7	8	0	66	32%	27%	18%	11%	12%	0%	100%
Graduate	6	2	3	2	4	0	17	35%	12%	18%	12%	24%	0%	100%
Post-Grad	1	1	1	1	0	0	4	25%	25%	25%	25%	0%	0%	100%
Total	39	34	40	17	18	1	149	26%	23%	27%	11%	12%	1%	100%
All Districts														
Non-Literate	23	13	32	16	6	1	91	25%	14%	35%	18%	7%	1%	100%
Primary	39	33	44	14	17	5	152	26%	22%	29%	9%	11%	3%	100%
Secondary	41	34	29	17	18	0	139	29%	24%	21%	12%	13%	0%	100%
Graduate	11	5	5	2	5	0	28	39%	18%	18%	7%	18%	0%	100%
Post-Grad	2	1	2	1	0	0	6	33%	17%	33%	17%	0%	0%	100%
Total	116	86	112	50	46	6	416	28%	21%	27%	12%	11%	1%	100%

Table 8.3.42			Quality of Service									
Literacy	Bad	Poor	Normal	Good	Very Good	Total	Bad	Poor	Normal	Good	Very Good	Total
						Ahmedabad						
Non-Literate	0	1	20	18	1	40	0%	3%	50%	45%	3%	100%
Primary	3	2	16	16	0	37	8%	5%	43%	43%	0%	100%
Secondary	0	0	2	3	0	5	0%	0%	40%	60%	0%	100%
Graduate	0	0	0	4	0	4	0%	0%	0%	100%	0%	100%
Post-Graduate	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%
Total	3	3	38	41	1	86	3%	3%	44%	48%	1%	100%
						Bharuch						
Non-Literate	0	0	0	10	2	12	0%	0%	0%	83%	17%	100%
Primary	0	0	2	15	14	31	0%	0%	6%	48%	45%	100%
Secondary	0	0	1	30	9	40	0%	0%	3%	75%	23%	100%
Graduate	0	0	0	6	1	7	0%	0%	0%	86%	14%	100%
Post-Graduate	0	0	1	0	0	1	0%	0%	100%	0%	0%	100%
Total	0	0	4	61	26	91	0%	0%	4%	67%	29%	100%
						Junagadh						
Non-Literate	0	0	3	6	0	9	0%	0%	33%	67%	0%	100%
Primary	0	0	13	16	6	35	0%	0%	37%	46%	17%	100%
Secondary	0	0	8	17	10	35	0%	0%	23%	49%	29%	100%
Graduate	0	1	7	1	3	12	0%	8%	58%	8%	25%	100%
Post-Graduate	0	0	0	2	0	2	0%	0%	0%	100%	0%	100%
Total	0	1	31	42	19	93	0%	1%	33%	45%	20%	100%
						All Districts						
Non-Literate	0	1	23	34	3	61	0%	2%	38%	56%	5%	100%
Primary	3	2	31	47	20	103	3%	2%	30%	46%	19%	100%
Secondary	0	0	11	50	19	80	0%	0%	14%	63%	24%	100%
Graduate	0	1	7	11	4	23	0%	4%	30%	48%	17%	100%
Post-Graduate	0	0	1	2	0	3	0%	0%	33%	67%	0%	100%
Total	3	4	73	144	46	270	1%	1%	27%	53%	17%	100%

Table 8.3.43	Repeat Visit to Health Centre															
Literacy	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total
	Ahmedabad								Bharuch							
Non-Literate	0	31	10	41	0%	76%	24%	100%	0	0	12	12	0%	0%	100%	100%
Primary	1	21	15	37	3%	57%	41%	100%	0	5	26	31	0%	16%	84%	100%
Secondary	0	1	4	5	0%	20%	80%	100%	0	8	32	40	0%	20%	80%	100%
Graduate	0	0	4	4	0%	0%	100%	100%	0	2	5	7	0%	29%	71%	100%
Post-Grad	0	0	1	1	0%	0%	100%	100%	0	0	1	1	0%	0%	100%	100%
Total	1	53	34	88	1%	60%	39%	100%	0	15	76	91	0%	16%	84%	100%
	Junagadh								All Districts							
Non-Literate	0	3	6	9	0%	33%	67%	100%	0	34	28	62	0%	55%	45%	100%
Primary	1	8	26	35	3%	23%	74%	100%	2	34	67	103	2%	33%	65%	100%
Secondary	0	5	30	35	0%	14%	86%	100%	0	14	66	80	0%	18%	83%	100%
Graduate	0	2	10	12	0%	17%	83%	100%	0	4	19	23	0%	17%	83%	100%
Post-Grad	0	0	2	2	0%	0%	100%	100%	0	0	4	4	0%	0%	100%	100%
Total	1	18	74	93	1%	19%	80%	100%	2	86	184	272	1%	32%	68%	100%

Table 8.3.44				Annual Out-of-Pocket Expenditure on Health												
Literacy				**If Yes, Expenditure**												
	Yes	**No**	**Total**	**<1000**	**1000-3000**	**3000-5000**	**5000-10000**	**Total**	**Yes**	**No**	**Total**	**<1000**	**1000-3000**	**3000-5000**	**5000-10000**	**Total**
							Ahmedabad									
Non-Literate	29	12	41	15	13	1	0	29	71%	29%	100%	52%	45%	3%	0%	100%
Primary	29	8	37	13	9	4	3	29	78%	22%	100%	45%	31%	14%	10%	100%
Secondary	2	3	5	0	2	0	0	2	40%	60%	100%	0%	100%	0%	0%	100%
Graduate	3	1	4	1	2	0	0	3	75%	25%	100%	33%	67%	0%	0%	100%
Post-Grad	1	0	1	1	0	0	0	1	100%	0%	100%	100%	0%	0%	0%	100%
Total	64	24	88	30	26	5	3	64	73%	27%	100%	47%	41%	8%	5%	100%
							Bharuch									
Non-Literate	7	5	12	2	2	1	1	6	58%	42%	100%	33%	33%	17%	17%	100%
Primary	15	16	31	10	3	2	0	15	48%	52%	100%	67%	20%	13%	0%	100%
Secondary	24	16	40	11	6	3	3	23	60%	40%	100%	48%	26%	13%	13%	100%
Graduate	3	3	6	3	0	0	0	3	50%	50%	100%	100%	0%	0%	0%	100%
Post-Grad	1	0	1	1	2	0	0	3	100%	0%	100%	33%	67%	0%	0%	100%
Total	50	40	90	27	13	6	4	50	56%	44%	100%	54%	26%	12%	8%	100%
							Junagadh									
Non-Literate	3	6	9	2	1	0	0	3	33%	67%	100%	67%	33%	0%	0%	100%
Primary	18	17	35	15	2	0	0	17	51%	49%	100%	88%	12%	0%	0%	100%
Secondary	16	19	35	10	3	1	0	14	46%	54%	100%	71%	21%	7%	0%	100%
Graduate	6	6	12	3	3	0	0	6	50%	50%	100%	50%	50%	0%	0%	100%
Post-Grad	1	1	2	1	0	0	0	1	50%	50%	100%	100%	0%	0%	0%	100%
Total	44	49	93	31	9	1	0	41	47%	53%	100%	76%	22%	2%	0%	100%
							All Districts									
Non-Literate	39	23	62	19	16	2	1	38	63%	37%	100%	50%	42%	5%	3%	100%
Primary	62	41	103	38	14	6	3	61	60%	40%	100%	62%	23%	10%	5%	100%
Secondary	42	38	80	21	11	4	3	39	53%	48%	100%	54%	28%	10%	8%	100%
Graduate	12	10	22	7	5	0	0	12	55%	45%	100%	58%	42%	0%	0%	100%
Post-Grad	3	1	4	3	2	0	0	5	75%	25%	100%	60%	40%	0%	0%	100%
Total	158	113	271	88	48	12	7	155	58%	42%	100%	57%	31%	8%	5%	100%

Table 8.3.45				Willingness to Pay for Better Services								
Literacy	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
				Ahmedabad						Bharuch		
Non-Literate	36	4	40	90%	10%	100%	8	4	12	67%	33%	100%
Primary	30	5	35	86%	14%	100%	17	12	29	59%	41%	100%
Secondary	5	0	5	100%	0%	100%	26	11	37	70%	30%	100%
Graduate	3	1	4	75%	25%	100%	6	1	7	86%	14%	100%
Post-Graduate	1	0	1	100%	0%	100%	1	0	1	100%	0%	100%
Total	75	10	85	88%	12%	100%	58	28	86	67%	33%	100%
				Junagadh						All Districts		
Non-Literate	7	2	9	78%	22%	100%	51	10	61	84%	16%	100%
Primary	23	7	30	77%	23%	100%	70	24	94	74%	26%	100%
Secondary	22	9	31	71%	29%	100%	53	20	73	73%	27%	100%
Graduate	9	2	11	82%	18%	100%	18	4	22	82%	18%	100%
Post-Graduate	2	0	2	100%	0%	100%	4	0	4	100%	0%	100%
Total	63	20	83	76%	24%	100%	196	58	254	77%	23%	100%

8.3.6 Caste Profile

In can be seen that on an overall more than 80% respondents of attended awareness programs. Only in case of scheduled tribes in Ahmedabad it was 25%. This may be because they are mostly migrant workers. Health workers were the major influencers across all castes. However, in Ahmedabad spouse and parents have major influence. Among others category in Junagadh, spouse were the major influence (Tables 8.3.49 to 8.3.56). Among all castes, respondents themselves were key decision makers. Health workers also play a key role in case of Schedules tribes and spouses in case of SEBC and others.

Key purpose of visit to health centre is communicable diseases in case of SC, ST and SEBC respondents and immunization among the others. Quality of service was good or very good among 58% SC, 81% ST, 67% SEBC and 80% other respondents. It was found that 74% SC, 85% ST, 59% SEBC and 73% other respondents were certain to make repeat visit to health centre. This was a low of 25% among ST, 43% of SC and 36% other respondents in Ahmedabad.

It was ascertained that 66% SC, 60% ST, 60% SEBC and 52% other respondents visited private health practitioners recently out of whom 59% had spent less than Rs 1000. It was found that 65% SC, 76% ST, 81% SEBC and 74% other respondents were willing to pay for better services.

Test of hypothesis shows that there is significant difference in the selected variable across the caste group of respondents (Table 8.3.48)

Table 8.3.46	Caste				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Attended Awareness Program	6	36.9	<0.0001	Reject	Significant Difference
Health Seeking Behaviour – Influencer	6	102.1	<0.0001	Reject	
Health Seeking Behaviour - Decision Maker	6	81.03	<0.0001	Reject	
Purpose of visit to health centre	6	90.46	<0.0001	Reject	
Quality of service	6	41.94	<0.0001	Reject	
Repeat visit to health centre	6	44.01	<0.0001	Reject	
Availed private health care	6	37.5	<0.0001	Reject	
Willingness to pay for better services	6	26.3	<0.0001	Reject	

Table 8.3.47					Attended awareness program							
Caste Group	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
				Ahmedabad						Bharuch		
Sch. Caste	12	4	16	75%	25%	100%	10	1	11	91%	9%	100%
Sch. Tribe	1	3	4	25%	75%	100%	21	3	24	88%	13%	100%
SEBC	36	10	46	78%	22%	100%	17	1	18	94%	6%	100%
Others	13	1	14	93%	7%	100%	29	7	36	81%	19%	100%
Total	62	18	80	78%	23%	100%	77	12	89	87%	13%	100%
				Junagadh						All Districts		
Sch. Caste	19	1	20	95%	5%	100%	41	6	47	87%	13%	100%
Sch. Tribe	12	0	12	100%	0%	100%	34	6	40	85%	15%	100%
SEBC	20	4	24	83%	17%	100%	73	15	88	83%	17%	100%
Others	30	5	35	86%	14%	100%	72	13	85	85%	15%	100%
Total	81	10	91	89%	11%	100%	220	40	260	85%	15%	100%

Table 8.3.48						**Health Seeking Behaviour - Influencer**								
Caste Group	**Spouse**	**Parents**	**Frnd/ Rel**	**HW**	**ASHA**	**Othrs**	**Total**	**Spouse**	**Parents**	**Frnd/ Rel**	**HW**	**ASHA**	**Othrs**	**Total**
							Ahmedabad							
Sch. Caste	10	10	4	6	5	2	37	27%	27%	11%	16%	14%	5%	100%
Sch. Tribe	4	3	0	1	0	0	8	50%	38%	0%	13%	0%	0%	100%
SEBC	26	25	11	13	12	4	91	29%	27%	12%	14%	13%	4%	100%
Others	9	6	4	4	4	2	29	31%	21%	14%	14%	14%	7%	100%
Total	49	44	19	24	21	8	165	30%	27%	12%	15%	13%	5%	100%
							Bharuch							
Sch. Caste	1	2	1	8	7	1	20	5%	10%	5%	40%	35%	5%	100%
Sch. Tribe	4	6	1	12	10	4	37	11%	16%	3%	32%	27%	11%	100%
SEBC	3	1	0	9	8	2	23	13%	4%	0%	39%	35%	9%	100%
Others	7	4	0	23	13	1	48	15%	8%	0%	48%	27%	2%	100%
Total	15	13	2	52	38	8	128	12%	10%	2%	41%	30%	6%	100%
							Junagadh							
Sch. Caste	2	4	1	23	15	0	45	4%	9%	2%	51%	33%	0%	100%
Sch. Tribe	2	10	3	25	11	1	52	4%	19%	6%	48%	21%	2%	100%
SEBC	3	5	0	19	9	0	36	8%	14%	0%	53%	25%	0%	100%
Others	13	2	0	1	1	0	17	76%	12%	0%	6%	6%	0%	100%
Total	20	21	4	68	36	1	150	13%	14%	3%	45%	24%	1%	100%
							All Districts							
Sch. Caste	13	16	6	37	27	3	102	13%	16%	6%	36%	26%	3%	100%
Sch. Tribe	10	19	4	38	21	5	97	10%	20%	4%	39%	22%	5%	100%
SEBC	32	31	11	41	29	6	150	21%	21%	7%	27%	19%	4%	100%
Others	29	12	4	28	18	3	94	31%	13%	4%	30%	19%	3%	100%
Total	84	78	25	144	95	17	443	19%	18%	6%	33%	21%	4%	100%

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Table 8.3.49		Health Seeking Behaviour - Decision Maker											
Caste	Own self	Spouse	Parents	Friend/ Relative	HW	ASHA	Total	Own self	Husband/ wife	Parents	Friend/ Relative	HW	ASHA	Total
							Ahmedabad						
Sch. Caste	11	6	5	1	1	0	24	46%	25%	21%	4%	4%	0%	100%
Sch. Tribe	1	2	1	2	1	0	7	14%	29%	14%	29%	14%	0%	100%
SEBC	31	26	17	4	6	2	86	36%	30%	20%	5%	7%	2%	100%
Others	9	8	6	2	2	3	30	30%	27%	20%	7%	7%	10%	100%
Total	52	42	29	9	10	5	143	36%	29%	20%	6%	7%	3%	100%
							Bharuch						
Sch. Caste	11	0	1	0	1	0	13	85%	0%	8%	0%	8%	0%	100%
Sch. Tribe	12	5	2	2	8	9	38	32%	13%	5%	5%	21%	24%	100%
SEBC	10	6	1	2	2	4	25	40%	24%	4%	8%	8%	16%	100%
Others	19	12	4	1	3	4	43	44%	28%	9%	2%	7%	9%	100%
Total	52	23	8	5	14	17	119	44%	19%	7%	4%	12%	14%	100%
							Junagadh						
Sch. Caste	11	2	0	1	8	2	24	46%	8%	0%	4%	33%	8%	100%
Sch. Tribe	5	3	2	0	6	2	18	28%	17%	11%	0%	33%	11%	100%
SEBC	17	5	2	0	8	3	35	49%	14%	6%	0%	23%	9%	100%
Others	24	14	6	2	10	8	64	38%	22%	9%	3%	16%	13%	100%
Total	57	24	10	3	32	15	141	40%	17%	7%	2%	23%	11%	100%
							All Districts						
Sch. Caste	33	8	6	2	10	2	61	54%	13%	10%	3%	16%	3%	100%
Sch. Tribe	18	10	5	4	15	11	63	29%	16%	8%	6%	24%	17%	100%
SEBC	58	37	20	6	16	9	146	40%	25%	14%	4%	11%	6%	100%
Others	52	34	16	5	15	15	137	38%	25%	12%	4%	11%	11%	100%
Total	161	89	47	17	56	37	407	40%	22%	12%	4%	14%	9%	100%

Table 8.3.50	Purpose of Visit to Health Centre													
Literacy	Immuni zation	Family Planning	Communi diseases	Maternal Health	Nutrition	Others	Total	Immuni zation	Family Planning	Communi diseases	Maternal Health	Nutrition	Others	Total
							Ahmedabad							
Sch. Caste	4	3	6	0	1	1	15	27%	20%	40%	0%	7%	7%	100%
Sch. Tribe	0	2	1	0	2	0	5	0%	40%	20%	0%	40%	0%	100%
SEBC	20	16	18	9	3	3	69	29%	23%	26%	13%	4%	4%	100%
Others	4	4	4	3	1	1	17	24%	24%	24%	18%	6%	6%	100%
Total	28	25	29	12	7	5	106	26%	24%	27%	11%	7%	5%	100%
							Bharuch							
Sch. Caste	6	3	9	2	3	0	23	26%	13%	39%	9%	13%	0%	100%
Sch. Tribe	13	7	12	6	8	1	47	28%	15%	26%	13%	17%	2%	100%
SEBC	9	5	9	4	4	0	31	29%	16%	29%	13%	13%	0%	100%
Others	15	15	9	5	6	0	50	30%	30%	18%	10%	12%	0%	100%
Total	43	30	39	17	21	1	151	28%	20%	26%	11%	14%	1%	100%
							Junagadh							
Sch. Caste	5	5	11	4	2	0	27	19%	19%	41%	15%	7%	0%	100%
Sch. Tribe	5	6	7	0	0	0	18	28%	33%	39%	0%	0%	0%	100%
SEBC	7	6	14	4	3	0	34	21%	18%	41%	12%	9%	0%	100%
Others	21	17	8	9	12	1	68	31%	25%	12%	13%	18%	1%	100%
Total	38	34	40	17	17	1	147	26%	23%	27%	12%	12%	1%	100%
							All Districts							
Sch. Caste	15	11	26	6	6	1	65	23%	17%	40%	9%	9%	2%	100%
Sch. Tribe	18	15	20	6	10	1	70	26%	21%	29%	9%	14%	1%	100%
SEBC	36	27	41	17	10	3	134	27%	20%	31%	13%	7%	2%	100%
Others	40	36	21	17	19	2	135	30%	27%	16%	13%	14%	1%	100%
Total	109	89	108	46	45	7	404	27%	22%	27%	11%	11%	2%	100%

Table 8.3.51	Quality of Service											
Caste Group	Bad	Poor	Normal	Good	Very Good	Total	Bad	Poor	Normal	Good	Very Good	Total
						Ahmedabad						
Sch. Caste	0	1	10	5	0	16	0%	6%	63%	31%	0%	100%
Sch. Tribe	0	1	2	1	0	4	0%	25%	50%	25%	0%	100%
SEBC	1	0	13	30	0	44	2%	0%	30%	68%	0%	100%
Others	1	1	7	4	1	14	7%	7%	50%	29%	7%	100%
Total	2	3	32	40	1	78	3%	4%	41%	51%	1%	100%
						Bharuch						
Sch. Caste	0	0	0	9	2	11	0%	0%	0%	82%	18%	100%
Sch. Tribe	0	0	0	12	12	24	0%	0%	0%	50%	50%	100%
SEBC	0	0	2	10	6	18	0%	0%	11%	56%	33%	100%
Others	0	0	2	28	6	36	0%	0%	6%	78%	17%	100%
Total	0	0	4	59	26	89	0%	0%	4%	66%	29%	100%
						Junagadh						
Sch. Caste	0	0	9	9	2	20	0%	0%	45%	45%	10%	100%
Sch. Tribe	0	0	5	6	1	12	0%	0%	42%	50%	8%	100%
SEBC	0	1	11	9	3	24	0%	4%	46%	38%	13%	100%
Others	0	0	6	16	13	35	0%	0%	17%	46%	37%	100%
Total	0	1	31	40	19	91	0%	1%	34%	44%	21%	100%
						All Districts						
Sch. Caste	0	1	19	23	4	47	0%	2%	40%	49%	9%	100%
Sch. Tribe	0	1	7	19	13	40	0%	3%	18%	48%	33%	100%
SEBC	1	1	26	49	9	86	1%	1%	30%	57%	10%	100%
Others	1	1	15	48	20	85	1%	1%	18%	56%	24%	100%
Total	2	4	67	139	46	258	1%	2%	26%	54%	18%	100%

Table 8.3.52					Repeat Visit to Health Centre											
Caste Group	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total
				Ahmedabad								Bharuch				
Sch. Caste	0	6	10	16	0%	38%	63%	100%	0	1	10	11	0%	9%	91%	100%
Sch. Tribe	0	3	1	4	0%	75%	25%	100%	0	0	24	24	0%	0%	100%	100%
SEBC	0	26	20	46	0%	57%	43%	100%	0	3	15	18	0%	17%	83%	100%
Others	0	9	5	14	0%	64%	36%	100%	0	11	25	36	0%	31%	69%	100%
Total	0	44	36	80	0%	55%	45%	100%	0	15	74	89	0%	17%	83%	100%
				Junagadh								All Districts				
Sch. Caste	0	5	15	20	0%	25%	75%	100%	0	12	35	47	0%	26%	74%	100%
Sch. Tribe	0	3	9	12	0%	25%	75%	100%	0	6	34	40	0%	15%	85%	100%
SEBC	1	6	17	24	4%	25%	71%	100%	1	35	52	88	1%	40%	59%	100%
Others	0	3	32	35	0%	9%	91%	100%	0	23	62	85	0%	27%	73%	100%
Total	1	17	73	91	1%	19%	80%	100%	1	76	183	260	0%	29%	70%	100%

Table 8.3.53				Annual Out-of-Pocket Expenditure on Health												
				If Yes, Expenditure												
Caste Group	Yes	No	Total	<1000	1000-3000	3000-10000	>10000	Total	Yes	No	Total	<1000	1000-3000	3000-10000	>10000	Total
								Ahmedabad								
Sch. Caste	13	3	16	4	6	3	0	13	81%	19%	100%	31%	46%	23%	0%	100%
Sch. Tribe	2	2	4	0	0	0	0	0	50%	50%	100%	0%	0%	0%	0%	0%
SEBC	33	13	46	18	12	2	1	33	72%	28%	100%	55%	36%	6%	3%	100%
Others	10	4	14	5	4	0	1	10	71%	29%	100%	50%	40%	0%	10%	100%
Total	58	22	80	27	22	5	2	56	73%	28%	100%	48%	39%	9%	4%	100%
								Bharuch								
Sch. Caste	7	4	11	5	1	1	0	7	64%	36%	100%	71%	14%	14%	0%	100%
Sch. Tribe	16	8	24	5	3	3	2	13	67%	33%	100%	38%	23%	23%	15%	100%
SEBC	9	2	11	4	2	1	2	9	82%	18%	100%	44%	22%	11%	22%	100%
Others	17	18	35	12	5	1	0	18	49%	51%	100%	67%	28%	6%	0%	100%
Total	49	32	81	26	11	6	4	47	60%	40%	100%	55%	23%	13%	9%	100%
								Junagadh								
Sch. Caste	11	9	20	11	0	0	0	11	55%	45%	100%	100%	0%	0%	0%	100%
Sch. Tribe	6	6	12	6	0	0	0	6	50%	50%	100%	100%	0%	0%	0%	100%
SEBC	7	17	24	5	1	0	0	6	29%	71%	100%	83%	17%	0%	0%	100%
Others	17	18	35	8	6	1	0	15	49%	51%	100%	53%	40%	7%	0%	100%
Total	41	50	91	30	7	1	0	38	45%	55%	100%	79%	18%	3%	0%	100%
								All Districts								
Sch. Caste	31	16	47	20	7	4	0	31	66%	34%	100%	65%	23%	13%	0%	100%
Sch. Tribe	24	16	40	11	3	3	2	19	60%	40%	100%	58%	16%	16%	11%	100%
SEBC	49	32	81	27	15	3	3	48	60%	40%	100%	56%	31%	6%	6%	100%
Others	44	40	84	25	15	2	1	43	52%	48%	100%	58%	35%	5%	2%	100%
Total	148	104	252	83	40	12	6	141	59%	41%	100%	59%	28%	9%	4%	100%

Table 8.3.54				Willingness to Pay for Better Services								
Caste	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Category				**Ahmedabad**						**Bharuch**		
Sch. Caste	14	1	15	93%	7%	100%	7	4	11	64%	36%	100%
Sch. Tribe	3	1	4	75%	25%	100%	17	5	22	77%	23%	100%
SEBC	35	9	44	80%	20%	100%	15	2	17	88%	12%	100%
Others	14	0	14	100%	0%	100%	18	18	36	50%	50%	100%
Total	66	11	77	86%	14%	100%	57	29	86	66%	34%	100%
				Junagadh						**All Districts**		
Sch. Caste	7	10	17	41%	59%	100%	28	15	43	65%	35%	100%
Sch. Tribe	9	3	12	75%	25%	100%	29	9	38	76%	24%	100%
SEBC	19	5	24	79%	21%	100%	69	16	85	81%	19%	100%
Others	26	2	28	93%	7%	100%	58	20	78	74%	26%	100%
Total	61	20	81	75%	25%	100%	184	60	244	75%	25%	100%

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8.3.7 Occupation of Beneficiaries

Attendance in awareness generation programs was more than 80% across all the 6 occupation groups. Key influencers were health workers among those with household occupation, business, service, labour and agricultural labour whereas it was spouse in case of others. Spouses were key decision makers across all occupation groups whereas parents also are important decision makers in Ahmedabad (Table 8.3.58 to 8.3.65).

Key purpose of visit to health centre was communicable diseases and immunization. Family planning was also a key reason among labourers and agricultural workers. Quality of service was found to be good or very good by 80% engaged in household occupation, 60% in business, 41% in service occupation, 65% labourers and 73% agricultural workers. It was found that 67% in household occupation, 60% business and 76% in service occupation, 68% labourers and 70% agricultural workers were certain to make repeat visit to health centre.

Analysis reveals that 56% in household occupation, 52% business, 47% in service occupation, 63% labourers and 62% agricultural workers made recent visit to private health practitioners and 88% of them spent upto Rs 3000. It was also found that 79% in household occupation, 79% business, 68% in service occupation, 83% labourers and 71% agricultural workers were willing pay for better services.

Test of hypothesis was estimated to ascertain the significance of association in selected parameters based on the occupation of respondents. There is no significant difference in case of attendance in awareness programs, repeat visit to health centre, quality of service, availing private health care and willingness to pay for better services. On the other hand, significant difference is observed in case of influence and decision making behaviour and purpose of visit to health centre (Table 8.3.57).

Table 8.3.55	Occupation				
Null Hypothesis	**Deg. of Freedom**	χ^2	**p**	**Reject/ Accept**	**Remarks**
Attended Awareness Program	8	11.37	0.193	Accept	No significant difference
Health Seeking Behaviour - Influencer	8	106.7	<0.0001	Reject	Significant difference
Health Seeking Behaviour - Decision Maker	8	22.87	0.011	Reject	
Purpose of visit to health centre	8	26.89	0.003	Reject	
Quality of service	8	10.14	0.43	Accept	No significant difference
Repeat visit to health centre	8	11.87	0.29	Accept	
Availed private health care	8	11.32	0.33	Accept	
Willingness to pay for better services	8	7.84	0.65	Accept	

Table 8.3.56	Attended Awareness Program											
	Yes	**No**	**Total**	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**
Occupation	Ahmedabad						Bharuch					
Household	24	7	31	77%	23%	100%	30	3	33	91%	9%	100%
Business	5	1	6	83%	17%	100%	7	1	8	88%	13%	100%
Service	3	1	4	75%	25%	100%	2	1	3	67%	33%	100%
Labour	29	9	38	76%	24%	100%	25	4	29	86%	14%	100%
Agricultural Workers	8	2	10	80%	20%	100%	14	1	15	93%	7%	100%
Others	1	0	1	100%	0%	100%	1	0	1	100%	0%	100%
Total	70	20	90	78%	22%	100%	79	10	89	89%	11%	100%
	Junagadh						All Districts					
	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Household	32	3	35	91%	9%	100%	86	13	99	87%	13%	100%
Business	11	0	11	100%	0%	100%	23	2	25	92%	8%	100%
Service	9	1	10	90%	10%	100%	14	3	17	82%	18%	100%
Labour	23	2	25	92%	8%	100%	77	15	92	84%	16%	100%
Agricultural Workers	8	4	12	67%	33%	100%	30	7	37	81%	19%	100%
Others	1	0	1	100%	0%	100%	3	0	3	100%	0%	100%
Total	84	10	94	89%	11%	100%	233	40	273	85%	15%	100%

Table 8.3.57							Health Care Seeking Behaviour - Influencer						
Occupation	**Spouse**	**Parents**	**Fr/Rel**	**HW**	**ASHA**	**Othrs**	**Total**	**Spouse**	**Parents**	**Fr/Rel**	**HW**	**ASHA**	**Othrs**	**Total**
							Ahmedabad						
Household	26	22	6	8	11	4	77	34%	29%	8%	10%	14%	5%	100%
Business	4	6	1	1	1	1	14	29%	43%	7%	7%	7%	7%	100%
Service	1	2	1	2	1	0	7	14%	29%	14%	29%	14%	0%	100%
Labour	20	20	11	10	6	3	70	29%	29%	16%	14%	9%	4%	100%
Agri workers	4	1	4	3	0	0	12	33%	8%	33%	25%	0%	0%	100%
Others	26	22	6	8	11	4	77	34%	29%	8%	10%	14%	5%	100%
Total	55	51	23	24	19	8	180	31%	28%	13%	13%	11%	4%	100%
							Bharuch						
Household	7	4	2	17	15	1	46	15%	9%	4%	37%	33%	2%	100%
Business	2	0	0	4	6	1	13	15%	0%	0%	31%	46%	8%	100%
Service	1	1	0	1	1	0	4	25%	25%	0%	25%	25%	0%	100%
Labour	4	6	0	18	10	5	43	9%	14%	0%	42%	23%	12%	100%
Agri workers	2	1	0	12	5	1	21	10%	5%	0%	57%	24%	5%	100%
Others	0	1	0	0	0	0	1	0%	100%	0%	0%	0%	0%	100%
Total	16	12	2	52	37	8	127	13%	9%	2%	41%	29%	6%	100%
							Junagadh						
Household	13	5	0	23	17	0	58	22%	9%	0%	40%	29%	0%	100%
Business	2	1	0	8	2	0	13	15%	8%	0%	62%	15%	0%	100%
Service	0	1	2	8	4	0	15	0%	7%	13%	53%	27%	0%	100%
Labour	3	11	1	21	10	1	47	6%	23%	2%	45%	21%	2%	100%
Agri workers	1	3	1	9	5	1	20	5%	15%	5%	45%	25%	5%	100%
Others	1	0	0	1	0	0	2	50%	0%	0%	50%	0%	0%	100%
Total	19	21	4	69	38	2	153	12%	14%	3%	45%	25%	1%	100%
							All Districts						
Household	46	31	8	48	43	5	181	25%	17%	4%	27%	24%	3%	100%
Business	8	7	1	13	9	2	40	20%	18%	3%	33%	23%	5%	100%
Service	2	4	3	11	6	0	26	8%	15%	12%	42%	23%	0%	100%
Labour	27	37	12	49	26	9	160	17%	23%	8%	31%	16%	6%	100%
Agri workers	7	5	5	24	10	2	53	13%	9%	9%	45%	19%	4%	100%
Others	27	23	6	9	11	4	80	34%	29%	8%	11%	14%	5%	100%
Total	90	84	29	145	94	18	460	20%	18%	6%	32%	20%	4%	100%

Table 8.3.58		Health Care Seeking Behaviour - Decision Maker											
Occupation	Own self	Spouse	Parents	Friend/ Relative	HW	ASHA	Total	Own self	Husband/ wife	Parents	Friend/ Relative	HW	ASHA	Total
							Ahmedabad							
Household	22	22	14	3	3	3	67	33%	33%	21%	4%	4%	4%	100%
Business	6	4	0	0	0	0	10	60%	40%	0%	0%	0%	0%	100%
Service	3	2	1	0	0	0	6	50%	33%	17%	0%	0%	0%	100%
Labour	17	20	18	3	4	1	63	27%	32%	29%	5%	6%	2%	100%
Agri workers	7	2	3	3	3	1	19	37%	11%	16%	16%	16%	5%	100%
Others	1	0	0	0	0	0	1	100%	0%	0%	0%	0%	0%	100%
Total	56	50	36	9	10	5	166	34%	30%	22%	5%	6%	3%	100%
							Bharuch							
Household	22	7	2	1	4	8	44	50%	16%	5%	2%	9%	18%	100%
Business	6	3	1	0	0	1	11	55%	27%	9%	0%	0%	9%	100%
Service	2	0	1	0	0	0	3	67%	0%	33%	0%	0%	0%	100%
Labour	16	7	3	1	6	5	38	42%	18%	8%	3%	16%	13%	100%
Agri workers	6	7	1	3	3	3	23	26%	30%	4%	13%	13%	13%	100%
Others	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
Total	52	24	8	5	13	17	119	44%	20%	7%	4%	11%	14%	100%
							Junagadh							
Household	21	13	2	1	13	7	57	37%	23%	4%	2%	23%	12%	100%
Business	6	3	1	0	3	0	13	46%	23%	8%	0%	23%	0%	100%
Service	5	2	2	0	6	3	18	28%	11%	11%	0%	33%	17%	100%
Labour	19	3	5	1	6	2	36	53%	8%	14%	3%	17%	6%	100%
Agri workers	7	2	0	1	6	3	19	37%	11%	0%	5%	32%	16%	100%
Others	0	1	0	0	0	0	1	0%	100%	0%	0%	0%	0%	100%
Total	58	24	10	3	34	15	144	40%	17%	7%	2%	24%	10%	100%
							All Districts							
Household	65	42	18	5	20	18	168	39%	25%	11%	3%	12%	11%	100%
Business	18	10	2	0	3	1	34	53%	29%	6%	0%	9%	3%	100%
Service	10	4	4	0	6	3	27	37%	15%	15%	0%	22%	11%	100%
Labour	52	30	26	5	16	8	137	38%	22%	19%	4%	12%	6%	100%
Agri workers	20	11	4	7	12	7	61	33%	18%	7%	11%	20%	11%	100%
Others	1	1	0	0	0	0	2	50%	50%	0%	0%	0%	0%	100%
Total	166	98	54	17	57	37	429	39%	23%	13%	4%	13%	9%	100%

Table 8.3.59	Purpose of Visit to Health Centre													
Occupation	Immuni zation	Family Plan	Communi diseases	Maternal Health	Nutrition	Others	Total	Immuni zation	Family Plan	Communi diseases	Maternal Health	Nutrition	Others	Total
							Ahmedabad							
Household	13	9	13	8	2	0	45	29%	20%	29%	18%	4%	0%	100%
Business	4	3	1	0	0	0	8	50%	38%	13%	0%	0%	0%	100%
Service	0	0	2	0	0	2	4	0%	0%	50%	0%	0%	50%	100%
Labour	15	11	13	6	4	2	51	29%	22%	25%	12%	8%	4%	100%
Agri.workrs	1	1	3	3	1	1	10	10%	10%	30%	30%	10%	10%	100.%
Others	0	0	1	0	0	0	1	0%	0%	100%	0%	0%	0%	100%
Total	33	24	32	17	7	5	118	28%	20%	27%	14%	6%	4%	100%
							Bharuch							
Household	19	8	19	9	7	0	62	31%	13%	31%	15%	11%	0%	100%
Business	2	1	5	0	1	0	9	22%	11%	56%	0%	11%	0%	100%
Service	3	0	0	0	2	0	5	60%	0%	0%	0%	40%	0%	100%
Labour	12	15	10	6	8	1	52	23%	29%	19%	12%	15%	2%	100%
Agri.workrs	8	6	4	2	3	0	23	35%	26%	17%	9%	13%	0%	100.%
Others	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
Total	44	30	38	17	21	1	151	29%	20%	25%	11%	14%	1%	100%
							Junagadh							
Household	15	13	14	8	7	0	57	26%	23%	25%	14%	12%	0%	100%
Business	5	3	5	1	3	0	17	29%	18%	29%	6%	18%	0%	100%
Service	2	4	8	3	2	0	19	11%	21%	42%	16%	11%	0%	100%
Labour	14	9	8	2	3	0	36	39%	25%	22%	6%	8%	0%	100%
Agri workrs	3	5	5	3	3	1	20	15%	25%	25%	15%	15%	5%	100%
Others	0	0	1	0	0	0	1	0%	0%	100%	0%	0%	0%	100%
Total	39	34	40	17	18	1	149	26%	23%	27%	11%	12%	1%	100%
							All Districts							
Household	47	30	46	25	16	0	164	29%	18%	28%	15%	10%	0%	100%
Business	11	7	11	1	4	0	34	32%	21%	32%	3%	12%	0%	100%
Service	5	4	10	3	4	2	28	18%	14%	36%	11%	14%	7%	100%
Labour	41	35	31	14	15	3	139	29%	25%	22%	10%	11%	2%	100%
Agri.workrs	12	12	12	8	7	2	53	23%	23%	23%	15%	13%	4%	100.%
Others	0	0	2	0	0	0	2	0%	0%	100%	0%	0%	0%	100%
Total	116	88	110	51	46	7	418	28%	21%	26%	12%	11%	2%	100%

Table 8.3.60	Quality of Service											
Occupation	Bad	Poor	Normal	Good	Very Good	Total	Bad	Poor	Normal	Good	Very Good	Total
Ahmedabad												
Household	0	1	7	21	1	30	0%	3%	23%	70%	3%	100%
Business	0	1	3	2	0	6	0%	17%	50%	33%	0%	100%
Service	0	0	4	0	0	4	0%	0%	100%	0%	0%	100%
Labour	2	1	19	15	0	37	5%	3%	51%	41%	0%	100%
Agri workers	1	0	5	4	0	10	10%	0%	50%	40%	0%	100%
Others	0	0	0	1	0	1	0%	0%	0%	100%	0%	100%
Total	3	3	38	42	1	87	3%	3%	44%	48%	1%	100%
Bharuch												
Household	0	0	1	26	6	33	0%	0%	3%	79%	18%	100%
Business	0	0	0	5	3	8	0%	0%	0%	63%	38%	100%
Service	0	0	1	1	1	3	0%	0%	33%	33%	33%	100%
Labour	0	0	1	17	11	29	0%	0%	3%	59%	38%	100%
Agri workers	0	0	1	10	4	15	0%	0%	7%	67%	27%	100%
Others	0	0	0	1	0	1	0%	0%	0%	100%	0%	100%
Total	0	0	4	59	25	88	0%	0%	5%	67%	28%	100%
Junagadh												
Household	0	0	10	17	8	35	0%	0%	29%	49%	23%	100%
Business	0	0	6	3	2	11	0%	0%	55%	27%	18%	100%
Service	0	1	4	5	0	10	0%	10%	40%	50%	0%	100%
Labour	0	0	9	11	5	25	0%	0%	36%	44%	20%	100%
Agri workers	0	0	3	5	4	12	0%	0%	25%	42%	33%	100%
Others	0	0	0	1	0	1	0%	0%	0%	100%	0%	100%
Total	0	1	32	41	19	93	0%	1%	34%	44%	20%	100%
All Districts												
Household	0	1	18	64	15	98	0%	1%	18%	65%	15%	100%
Business	0	1	9	10	5	25	0%	4%	36%	40%	20%	100%
Service	0	1	9	6	1	17	0%	6%	53%	35%	6%	100%
Labour	2	1	29	43	16	91	2%	1%	32%	47%	18%	100%
Agri workers	1	0	9	19	8	37	3%	0%	24%	51%	22%	100%
Others	0	0	0	3	0	3	0%	0%	0%	100%	0%	100%
Total	3	4	74	142	45	268	1%	1%	28%	53%	17%	100%

Table 8.3.61	Repeat Visit to Health Centre															
Occupation	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total	Never	May be	Cert ainly	Total
	Ahmedabad								Bharuch							
Household	0	21	10	31	0%	68%	32%	100%	0	6	27	33	0%	18%	82%	100%
Business	0	4	2	6	0%	67%	33%	100%	0	0	8	8	0%	0%	100%	100%
Service	0	2	2	4	0%	50%	50%	100%	0	1	2	3	0%	33%	67%	100%
Labour	1	20	17	38	3%	53%	45%	100%	0	3	26	29	0%	10%	90%	100%
Agri. workers	0	5	5	10	0%	50%	50%	100%	0	5	10	15	0%	33%	67%	100%
Others	0	0	1	1	0%	0%	100%	100%	0	0	1	1	0%	0%	100%	100%
Total	1	52	37	90	1%	58%	41%	100%	0	15	74	89	0%	17%	83%	100%
	Junagadh								All Districts							
Household	0	6	29	35	0%	17%	83%	100%	0	33	66	99	0%	33%	67%	100%
Business	1	5	5	11	9%	45%	45%	100%	1	9	15	25	4%	36%	60%	100%
Service	0	1	9	10	0%	10%	90%	100%	0	4	13	17	0%	24%	76%	100%
Labour	0	5	20	25	0%	20%	80%	100%	1	28	63	92	1%	30%	68%	100%
Agri. workers	0	1	11	12	0%	8%	92%	100%	0	11	26	37	0%	30%	70%	100%
Others	0	0	1	1	0%	0%	100%	100%	0	0	3	3	0%	0%	100%	100%
Total	1	18	75	94	1%	19%	80%	100%	2	85	186	273	1%	31%	68%	100%

Table 8.3.62				Annual Out-of-Pocket Expenditure on Health												
				If Yes, Expenditure												
Occupation	Yes	No	Total	<1000	1000-3000	3000-10000	>10000	Total	Yes	No	Total	<1000	1000-3000	3000-10000	>10000	Total
								Ahmedabad								
Household	19	12	31	12	6	1	0	19	61%	39%	100%	63%	32%	5%	0%	100%
Business	5	1	6	2	3	0	0	5	83%	17%	100%	40%	60%	0%	0%	100%
Service	2	2	4	0	0	1	1	2	50%	50%	100%	0%	0%	50%	50%	100%
Labour	31	7	38	15	12	2	2	31	82%	18%	100%	48%	39%	6%	6%	100%
Agri workers	8	2	10	2	5	1	0	8	80%	20%	100%	25%	63%	13%	0%	100%
Others	0	1	1	0	0	0	0	0	0%	100%	100%	0%	0%	0%	0%	0%
Total	65	25	90	31	26	5	3	65	72%	28%	100%	48%	40%	8%	5%	100%
								Bharuch								
Household	19	13	32	9	5	2	3	19	59%	41%	100%	47%	26%	11%	16%	100%
Business	3	5	8	3	0	0	0	3	38%	63%	100%	100%	0%	0%	0%	100%
Service	2	1	3	1	1	0	0	2	67%	33%	100%	50%	50%	0%	0%	100%
Labour	17	12	29	8	3	4	1	16	59%	41%	100%	50%	19%	25%	6%	100%
Agri workers	8	7	15	5	2	0	0	7	53%	47%	100%	71%	29%	0%	0%	100%
Others	0	1	1	0	0	0	0	0	0%	100%	100%	0%	0%	0%	0%	0%
Total	49	39	88	26	11	6	4	47	56%	44%	100%	55%	23%	13%	9%	100%
								Junagadh								
Household	17	18	35	11	3	1	0	15	49%	51%	100%	73%	20%	7%	0%	100%
Business	5	6	11	4	1	0	0	5	45%	55%	100%	80%	20%	0%	0%	100%
Service	4	6	10	4	0	0	0	4	40%	60%	100%	100%	0%	0%	0%	100%
Labour	10	15	25	7	2	0	0	9	40%	60%	100%	78%	22%	0%	0%	100%
Agri workers	7	5	12	4	3	0	0	7	58%	42%	100%	57%	43%	0%	0%	100%
Others	1	0	1	1	0	0	0	1	100%	0%	100%	100%	0%	0%	0%	100%
Total	44	50	94	31	9	1	0	41	47%	53%	100%	76%	22%	2%	0%	100%
								All Districts								
Household	55	43	98	32	14	4	3	53	56%	44%	100%	60%	26%	8%	6%	100%
Business	13	12	25	9	4	0	0	13	52%	48%	100%	69%	31%	0%	0%	100%
Service	8	9	17	5	1	1	1	8	47%	53%	100%	63%	13%	13%	13%	100%
Labour	58	34	92	30	17	6	3	56	63%	37%	100%	54%	30%	11%	5%	100%
Agri workers	23	14	37	11	10	1	0	22	62%	38%	100%	50%	45%	5%	0%	100%
Others	1	2	3	1	0	0	0	1	33%	67%	100%	100%	0%	0%	0%	100%
Total	158	114	272	88	46	12	7	153	58%	42%	100%	58%	30%	8%	5%	100%

Table 8.3.63				Willingness to Pay for Better Services								
	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Occupation				Ahmedabad						Bharuch		
Household	25	6	31	81%	19%	100%	24	8	32	75%	25%	100%
Business	6	0	6	100%	0%	100%	5	3	8	63%	38%	100%
Service	4	0	4	100%	0%	100%	5	3	8	63%	38%	100%
Labour	31	4	35	89%	11%	100%	5	3	8	63%	38%	100%
Agri. workers	9	1	10	90%	10%	100%	5	3	8	63%	38%	100%
Others	1	0	1	100%	0%	100%	5	3	8	63%	38%	100%
Total	76	11	87	87%	13%	100%	49	23	72	68%	32%	100%
				Junagadh						All Districts		
Occupation	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Household	25	6	31	81%	19%	100%	74	20	94	79%	21%	100%
Business	8	2	10	80%	20%	100%	19	5	24	79%	21%	100%
Service	6	4	10	60%	40%	100%	15	7	22	68%	32%	100%
Labour	18	4	22	82%	18%	100%	54	11	65	83%	17%	100%
Agri. workers	6	4	10	60%	40%	100%	20	8	28	71%	29%	100%
Others	1	0	1	100%	0%	100%	7	3	10	70%	30%	100%
Total	64	20	84	76%	24%	100%	189	54	243	78%	22%	100%

8.4 Multiple Linear Regression Analysis

Based on the data obtained from the survey, detailed statistical analysis was conducted to identify the key factors regarding the demand and supply of services. Multiple linear regression for key dependent and independent variables were performed on the Statistical Package for Social Sciences (SPSS) version 19.

8.4.1 Health Workers: Target Achievement and Motivation

In case of health workers, Target Achievement (TarAch) and Motivation (Mot) are the key output factors which are influenced by many other factors. From the survey, the independent variables indentified were involvement in decision making, pay and allowances, condition of health centre, facilities, performance evaluation, interpersonal relations, burden of work, clarity of work, financial powers, promotion, availability of drugs and equipments, adequacy and quality of training, time management, reporting and review. On performing multiple linear regression on all these variables, R^2 obtained is 0.368. Thus all these variables can explain 36.8% of performance of the health workers in terms of target achievement. From the analysis of regression parameters, it is observed that the factors which have significant (Sig $<=$ 0.05) impact on target achievement are involvement in decision making (IDecM), burden of work (BWrk), chances for promotion (CProm) and reporting(Rep). These factors explain 23.2% of performance (R^2 = 0.232). The β coefficients are 0.267, 0.290, 0.149 and -0.171. It can be observed that increase in the first three factors have positive impact on performance whereas reporting has adverse impact on target achievement. This could be due to too much of time spent on reporting which affect the performance of workers.

TarAch = 1.757+ 0.273*IdecM+0.583*Bwrk+0.149*Cprom-0.171*Rep

Regression for motivation as dependent variable was performed on all the independent variables with an estimated R^2 of 0.525. Thus these factors explain 52.5% of level of motivation of health workers. Finer analysis reveal that key factors like involvement in decision making (IdecM), evaluation of work (EvaWrk) and review of work (RevWrk) significantly explain the level of motivation (R^2 = 0.411). The coefficients are 0.301, 0.315 and 0.230 respectively for these three factors. Thus any improvement in these factors would enhance the motivation level significantly.

Motivation =   -0.282+ 0.301*IdecM+0.315*EvaWrk+0.230*RevWrk

A comparison of common factors clearly show that involvement in decision making and monitoring emerge as key factors for target achievement whereas promotion and evaluation of work are important for motivation of health workers.

1. Target Achievement
1a. MLR with All Variables

Table 8.4.1 Model	Variables Entered
TrgQuality, Burden, Rep&Maint, Clarity, TimetoWork, TrgAdequ, LocalTrans, Pay & Allow, Interpersonal, Promotion, RepNum, TimeMgmt, Evaluation, CondHC, EquipAvai, RevNum, Vehicle, DrugsAvai, EmergPur, RevUtil, Involvement, RepUtil, Facility	

Model Summary

Table 8.4.2 Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.607[a]	.368	.241	.954

Model Summary

Table 8.4.3 Model 1	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.368	2.887	23	114	.000

ANOVA[b]

Table 8.4.4 Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	60.377	23	2.625	2.887	.000[a]
Residual	103.659	114	.909		
Total	164.036	137			

a. Predictors: (Constant), TrgQuality, Burden, Rep&Maint, Clarity, TimetoWork, TrgAdequ, LocalTrans, Pay&Allow, Interpersonal, Promotion, RepNum, TimeMgmt, Evaluation, CondHC, EquipAvai, RevNum, Vehicle, DrugsAvai, EmergPur, RevUtil, Involvement, RepUtil, Facility

b. Dependent Variable: Target Achievement

Coefficients a

Table 8.4.5 Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	1.650	1.027	1.650	1.607	.111			
TimetoWork	-.193	.213	-.084	-.905	.367	-.034	-.084	-.067
Vehicle	.321	.179	.173	1.798	.075	-.018	.166	.134
LocalTrans	-.180	.157	-.102	-1.150	.253	-.090	-.107	-.086
CondHC	.043	.128	.040	.336	.737	.140	.031	.025
Facility	-.019	.131	-.018	-.147	.884	.113	-.014	-.011
DrugsAvai	-.339	.146	-.235	-2.322	.022	.057	-.212	-.173
EquipAvai	-.007	.135	-.005	-.051	.959	.028	-.005	-.004
Interpersonal	-.031	.025	-.104	-1.220	.225	-.124	-.113	-.091
Involvement	.289	.108	.291	2.679	.008	.353	.243	.199
Evaluation	.111	.113	.103	.986	.326	.292	.092	.073
RepNum	.230	.122	.196	1.890	.061	.000	.174	.141
RepUtil	-.298	.143	-.232	-2.080	.040	-.032	-.191	-.155
RevNum	-.206	.118	-.167	-1.741	.084	-.073	-.161	-.130
RevUtil	.033	.154	.023	.214	.831	.070	.020	.016
TimeMgmt	.232	.140	.154	1.657	.100	.154	.153	.123
Pay&Allow	.004	.146	.002	.025	.980	.151	.002	.002
Burden	.556	.180	.273	3.093	.002	.310	.278	.230
Clarity	.055	.105	.049	.523	.602	.091	.049	.039
Promotion	.176	.082	.190	2.161	.033	.275	.198	.161
Rep&Maint	.180	.096	.186	1.880	.063	.209	.173	.140
EmergPur	-.008	.107	-.008	-.078	.938	.083	-.007	-.006
TrgAdequ	.038	.173	.019	.222	.825	.023	.021	.016
TrgQuality	-.063	.103	-.062	-.610	.543	.030	-.057	-.045

1b. MLR with Significant Variables

Table 8.4.6 Model 2	Variables Entered
Promotion, Burden, RepUtil, Involvement	

Model Summary

Table 8.4.7 Model 2	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.482[a]	.232	.213	.970

Model Summary

Table 8.4.8 Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
2	.232	12.036	4	159	.000

ANOVA[b]

Table 8.4.9 Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	45.309	4	11.327	12.036	.000[a]
	Residual	149.642	159	.941		
	Total	194.951	163			

a. Predictors: (Constant), Promotion, Burden, RepUtil, Involvement
b. Dependent Variable: Target Achievement

Coefficients a

Table 8.4.10 Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	1.757	.402	1.757	4.371	.000			
Involvement	.273	.076	.267	3.579	.000	.331	.273	.249
RepUtil	-.216	.089	-.171	-2.418	.017	-.080	-.188	-.168
Burden	.583	.142	.290	4.113	.000	.327	.310	.286
Promotion	.140	.069	.149	2.030	.044	.236	.159	.141

2. Motivation of Health Workers
2a. MLR with All Variables

Table 8.4.11 Model 1	Variables Entered
TrgQuality, Clarity, TimetoWork, Rep&Maint, Burden, TrgAdequ, LocalTrans, Interpersonal, Promotion, Pay&Allow, RepNum, TimeMgmt, Evaluation, EquipAvai, CondHC, RevNum, Vehicle, DrugsAvai, EmergPur, RevUtil, Involvement, RepUtil, Facility	

Model Summary

Table 8.4.12 Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.725[a]	.525	.430	.855

Model Summary

Table 8.4.13 Model 1	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.525	5.489	23	114	.000

ANOVA[b]

Table 8.4.14 Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	92.336	23	4.015	5.489	.000[a]
Residual	83.381	114	.731		
Total	175.717	137			

a. Predictors: (Constant), TrgQuality, Clarity, TimetoWork, Rep&Maint, Burden, TrgAdequ, LocalTrans, Interpersonal, Promotion, Pay&Allow, RepNum, TimeMgmt, Evaluation, EquipAvai, CondHC, RevNum, Vehicle, DrugsAvai, EmergPur, RevUtil, Involvement, RepUtil, Facility

b. Dependent Variable: Motivation

Coefficients

Table 8.4.15 Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	-.356	.921	-.356	-.386	.700			
TimetoWork	.227	.191	.095	1.188	.237	.034	.111	.077
Vehicle	-.217	.161	-.112	-1.350	.180	-.153	-.125	-.087
LocalTrans	-.004	.141	-.002	-.028	.978	-.047	-.003	-.002
CondHC	-.191	.115	-.171	-1.662	.099	.174	-.154	-.107
Facility	.191	.115	.172	1.657	.100	.238	.153	.107
DrugsAvai	.011	.127	.007	.084	.933	.280	.008	.005
EquipAvai	-.080	.121	-.052	-.665	.507	.136	-.062	-.043
Interpersonal	-.003	.023	-.009	-.125	.900	-.117	-.012	-.008
Involvement	.323	.097	.314	3.322	.001	.555	.297	.214
Evaluation	.444	.101	.399	4.392	.000	.588	.380	.283
RepNum	.052	.109	.043	.475	.636	.044	.044	.031
RepUtil	-.092	.129	-.069	-.720	.473	.265	-.067	-.046
RevNum	-.014	.106	-.011	-.133	.895	.089	-.012	-.009
RevUtil	.291	.137	.199	2.113	.037	.382	.194	.136
TimeMgmt	.133	.126	.085	1.058	.292	.238	.099	.068
Pay&Allow	.157	.132	.095	1.188	.237	.235	.111	.077
Burden	-.177	.162	-.084	-1.087	.279	.182	-.101	-.070
Clarity	-.166	.096	-.140	-1.735	.085	-.073	-.160	-.112
Promotion	-.026	.074	-.027	-.358	.721	.226	-.034	-.023
Rep&Maint	.080	.086	.080	.935	.352	.213	.087	.060
EmergPur	-.081	.095	-.073	-.847	.399	.281	-.079	-.055
TrgAdequ	.216	.156	.102	1.388	.168	.102	.129	.090
TrgQuality	-.029	.093	-.027	-.311	.756	.289	-.029	-.020

2b. MLR with Significant Variables

Table 8.4.16 Model 2	Variables Entered
RevUtil, Evaluation, Involvement	

a. All requested variables entered.
b. Dependent Variable: Motivation

Model Summary

Table 8.4.17 Model 2	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.641[a]	.411	.400	.871

Model Summary

Table 8.4.18 Model 2	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.411	36.332	3	156	.000

Table 8.4.19 Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	82.671	3	27.557	36.332	.000[a]
Residual	118.323	156	.758		
Total	200.994	159			

Coefficients a

Table 8.4.20 Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	-.282	.373	-.282	-.756	.451			
Involvement	.309	.078	.301	3.989	.000	.532	.304	.245
Evaluation	.345	.082	.315	4.202	.000	.533	.319	.258
RevUtil	.331	.091	.230	3.632	.000	.363	.279	.223

8.4.2 Beneficiaries: Quality of Service & Repeat Visit

In case of beneficiaries, the dependent factors identified were quality of service availed (QualServ) and repeat visit to the health centre (RepVist). Linear multiple regressions were performed on socio-economic variables: gender, age, income, poverty, occupation, family size, caste and education and health delivery variables: vehicle availability and road connectivity to health centre, utility of awareness programs, waiting time in health centre, counselling, cleanliness and amenities in health centre which were obtained in the survey.

Regression performed for quality of services with all socio-economic factors as independent variables generated an estimated R^2 of 0.066 which indicate that socio-economic factors do not explain the quality of service availed by beneficiaries. None of the factors have significant impact on the quality of services.

The R^2 for regression performed on service delivery factors is 0.57, which indicates that a substantial 57% of quality of services is explained by these factors. Among the factors, utility of awareness programs (UtilAwar), vehicle availability (VehAval), cleanliness (Clean) and counselling (Couns) emerge as statistically significant factors affecting the dependent variable. MLR performed on these four factors has an estimated R^2 of 0.499, which indicates that 50% of quality of services is explained by these factors. The β coefficients of these variables are 0.148, 0.142, 0.275 and 0.374 which shows that any positive change in these factors would have positive impact on quality of service.

QualServ = 0.178+0.148*UtilAwar+0.142*VehAval+0.275*Clean+0.374*Couns

In case of repeat visit to health centre, the regression results show an R^2 of 0.151, similar to the findings in case of quality of services. Among the factors, income, poverty and education were found to have significant impact on the dependent variable with sig $<= 0.05$. MLR on these three factors gives an estimated R^2 of 0.145 with β coefficients of -0.156, 0.293 and 0.196. Thus with increase in income, it can be observed that the quality tends to decline. But with poverty and education the perception of quality increases.

Regression performed on Health delivery factors generates an R^2 of 0.247. Only quality of service (QualServ) is found to have statistically significant impact on repeat

service to health centre. Simple linear regression performed on this factor generated an R^2 of 0.208 and β coefficient of 0.456.

RepVisit = 0.279+ 0.456* QualServ

Thus among beneficiaries utility of awareness programs, vehicle availability, cleanliness and counselling are the key and significant factors in improving the quality of services as well as repeat visit of beneficiaries.

3. Quality of Services
3a. MLR with All Socio-Economic Variables

Table 8.4.21 Model 1	Variables Entered
Caste, Male/ Female, Monthly Income, Family, BPL , Occupation, Educn, Age	

a. All requested variables entered.
b. Dependent Variable: Quality of Service

Model Summary

Table 8.4.22 Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.257[a]	.066	.030	.759

Model Summary

Table 8.4.23 Model 1	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.066	1.856	8	210	.068

ANOVA^b

Table 8.4.24 Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	8.564	8	1.071	1.856	.068^a
Residual	121.116	210	.577		
Total	129.680	218			

a. Predictors: (Constant), Caste, Male/ Female, Monthly Income, Family, BPL , Occupation, Educn, Age
b. Dependent Variable: Quality of Service

Coefficients

Table 8.4.25 Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Erorr	Beta			Zero-order	Partial	Part
(Constant)	3.114	.448	3.114	6.955	.000			
Male/ Female	.118	.125	.072	.947	.345	.080	.065	.063
Age	-.003	.006	-.038	-.492	.624	-.114	-.034	-.033
Family	-.002	.030	-.004	-.055	.956	-.031	-.004	-.004
Occupation	-.001	.035	-.002	-.034	.973	-.038	-.002	-.002
Monthly Income	.051	.052	.070	.986	.325	.138	.068	.066
BPL	.158	.109	.103	1.452	.148	.165	.100	.097
Educn	.109	.063	.128	1.719	.087	.179	.118	.115
Caste	.041	.049	.058	.851	.396	.106	.059	.057

3b. MLR with All Health Delivery Variables

Table 8.4.26 Model 2	Variables Entered
Amenity, Waiting Time, Aware Utility, Vehicle, Counselling, Road, Cleanliness	

a. All requested variables entered.
b. Dependent Variable: Quality of Service

Model Summary

Table 8.4.27 Model 2	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.729	.532	.518	.556

Model Summary

Table 8.4.28	Change Statistics				
Model 2	R Square Change	F Change	df1	df2	Sig. F Change
	.532	37.523	7	231	.000

ANOVA[b]

Table 8.4.29 Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	81.203	7	11.600	37.523	.000[a]
Residual	71.416	231	.309		
Total	152.619	238			

a. Predictors: (Constant), Amenity, Waiting Time, Aware Utility, Vehicle, Counselling, Road, Cleanliness
b. Dependent Variable: Quality of Service

Coefficients a

Table 8.4.30 Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	.015	.312	.015	.048	.962			
Aware Utility	.156	.058	.129	2.708	.007	.331	.175	.122
Vehicle	.123	.051	.144	2.406	.017	.401	.156	.108
Road	-.053	.042	-.077	-1.259	.209	.343	-.083	-.057
Waiting Time	.024	.079	.014	.299	.765	.179	.020	.013
Cleanliness	.171	.067	.181	2.567	.011	.597	.167	.116
Counselling	.468	.066	.425	7.056	.000	.664	.421	.318
Amenity	.110	.061	.120	1.795	.074	.538	.117	.081

3c. MLR with Significant Health Delivery Variables

Table 8.4.31 Model 2	Variables Entered
Cleanliness, Aware Utility, Vehicle, Counselling	

Model Summary

Table 8.4.32 Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.706[a]	.499	.490	.568

Model Summary

Table 8.4.33 Model 2	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.499	61.133	4	246	.000

ANOVA[b]

Table 8.4.34 Model 2	Sum of Squares	df	Mean Square	F	Sig.
Regression	78.887	4	19.722	61.133	.000[a]
Residual	79.360	246	.323		
Total	158.247	250			

a. Predictors: (Constant), Cleanliness, Aware Utility, Vehicle, Counselling
b. Dependent Variable: Quality of Service

Coefficients a

Table 8.4.35 Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	.178	.267	.178	.667	.505			
Aware Utility	.177	.057	.148	3.127	.002	.335	.196	.141
Vehicle	.123	.043	.142	2.842	.005	.405	.178	.128
Counselling	.393	.059	.374	6.690	.000	.610	.392	.302
Cleanliness	.264	.057	.275	4.653	.000	.594	.284	.210

4. Repeat Visit to Health Centre
4a. MLR with all Socio-Economic Variables

Table 8.4.36 Model	Variables Entered
Caste, Male/ Female, Monthly Income, Family, BPL , Occupation, Educn, Age	

Model Summary

Table 8.4.37 Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.388[a]	.151	.120	.435

Model Summary

Table 8.4.38 Model 1	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.151	4.392	8	211	.000

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ANOVA[b]

Table 8.4.39 Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.642	8	.830	4.392	.000[a]
Residual	39.886	211	.189		
Total	46.527	219			

a. Predictors: (Constant), Caste, Male/ Female, Monthly Income, Family, BPL , Occupation, Educn, Age

b. Dependent Variable: Repeat Visit

Coefficients a

Table 8.4.40 Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	2.396	.256		9.349	.000			
Male/ Female	-.058	.071	-.060	-.814	.417	-.102	-.056	-.052
Age	.002	.003	.042	.570	.569	.018	.039	.036
Family	-.007	.017	-.029	-.429	.668	-.083	-.030	-.027
Occupation	.012	.020	.041	.595	.553	.038	.041	.038
Monthly Income	-.067	.030	-.153	-2.258	.025	-.062	-.154	-.144
BPL	.278	.062	.302	4.465	.000	.279	.294	.285
Educn	.088	.036	.173	2.420	.016	.187	.164	.154
Caste	-.048	.028	-.113	-1.717	.087	-.051	-.117	-.109

4b. MLR with Significant Socio-Economic Variables

Table 8.4.41 Model 2	Variables Entered
Educn, Monthly Income, BPL	

a. All requested variables entered.
b. Dependent Variable: Repeat Visit

Model Summary

Table 8.4.42 Model 2	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.381[a]	.145	.134	.446

Model Summary

Table 8.4.43 Model 2	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.145	13.284	3	235	.000

ANOVA[b]

Table 8.4.44 Model 2	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.931	3	2.644	13.284	.000[a]
Residual	46.771	235	.199		
Total	54.703	238			

a. Predictors: (Constant), Educn, Monthly Income, BPL

b. Dependent Variable: Repeat Visit

Coefficients a

Table 8.4.45 Model 2	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	2.185	.108		20.284	.000			
Monthly Income	-.074	.030	-.156	-2.475	.014	-.043	-.159	-.149
BPL	.281	.061	.293	4.592	.000	.310	.287	.277
Educn	.101	.033	.196	3.079	.002	.241	.197	.186

4c. MLR with all Health Delivery Variables

Table 8.4.46 Model 2	Variables Entered
	Amenity, Waiting Time, Aware Utility, Vehicle, Counselling, Road, Quality of Service, Cleanliness

a. All requested variables entered.
b. Dependent Variable: Repeat Visit

Model Summary

Table 8.4.47 Model 2	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.496ᵃ	.246	.219	.433

Model Summary

Table 8.4.48 Model 2	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.246	9.356	8	230	.000

ANOVA[b]

Table 8.4.49 Model 3	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.050	8	1.756	9.356	.000[a]
Residual	43.172	230	.188		
Total	57.222	238			

a. Predictors: (Constant), Amenity, Waiting Time, Aware Utility, Vehicle, Counselling, Road, Quality of Service, Cleanliness
b. Dependent Variable: Repeat Visit

Coefficients a

Table 8.4.50 Model 2	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	1.477	.243		6.074	.000		.285	.258
Quality of Service	.231	.051	.377	4.506	.000	.470	-.098	-.085
Aware Utility	-.068	.046	-.092	-1.492	.137	.086	-.016	-.014
Vehicle	-.010	.040	-.019	-.241	.810	.218	.030	.026
Road	.015	.033	.036	.459	.647	.217	.052	.046
Waiting Time	.049	.061	.047	.794	.428	.131	.008	.007
Cleanliness	.006	.053	.010	.114	.909	.340	.066	.058
Counselling	.058	.057	.085	1.009	.314	.384	.067	.058
Amenity	.049	.048	.088	1.020	.309	.340	.285	.258

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4d. MLR with Significant Health Delivery Variable

Table 8.4.51 Model 3	Variables Entered
Quality of Service	

a. All requested variables entered.
b. Dependent Variable: Repeat Visit

Model Summary

Table 8.4.52 Model 3	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.456[a]	.208	.205	.434

Model Summary

Table 8.4.53 Model 3	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
	.208	72.236	1	275	.000

ANOVA[b]

Table 8.4.54 Model 4	Sum of Squares	df	Mean Square	F			Sig.
Regression	13.614	1	13.614	72.236			.000[a]
Residual	51.830	275	.188				
Total	65.444	276					

a. Predictors: (Constant), Quality of Service
b. Dependent Variable: Repeat Visit

Coefficients a

Table 8.4.55 Model 3	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	1.597	.129		12.403	.000			
Quality of Service	.279	.033	.456	8.499	.000	.456	0.456	0.456

Chapter IX

9. Suggestions & Recommendations

Findings from the analysis of survey of health workers and beneficiaries provide insight into practices in public health management from the supplier and beneficiary side. These findings also reveal the extent to which the intentions defined in health policy and NRHM are translated into action in the field. Utility of these methods and practices in improving health care impact could be ascertained from the health workers and beneficiaries. Thus these findings help to identify initiatives which have high impact on outcome, make enormous difference across the districts in achieving desired objectives and have large scope for improvement in the field. Such key findings are the basis of formulating the suggestions and recommendations for improvement in the health care delivery in Gujarat and Country. Suggestions and recommendations are grouped in to appropriate categories based on both the surveys and findings.

9.1 Supply of Health Care: Health Workers

Health Planning: It is found that the involvement of local bodies like Gram Panchayat in preparation of health plan needs improvement. Even when there is involvement, the quality is below desired level. Though there is institutional mechanism for participation, it requires proper implementation. There has to be a mechanism for approval of health plan at the gram panchayat with an incentive mechanism to encourage qualitative participation in the preparation of well thought-out plans.

Infrastructure: Though health centres have been built, connectivity by road and transport infrastructure has to be improved in one-third of cases, especially in remote villages. These centres can be given priority in District Planning funds.

Facilities: In many instances, FHW find the condition of health centres not upto the mark. Facilities and amenities like toilet require to be more women-friendly as they constitute larger share of service providers as well as beneficiaries. In order to improve mobility of health workers, subsidised loan for purchase of 2-wheelers can be provided.

Activities:

Targets: Though target based planning and execution is prevalent in maternal health activities like family planning and ANC visit, it is nearly absent in key child health activities like immunization and nutrition. Given the need to improve child health status in the State, this activity needs intense planning and monitoring.

Target Determination: It is observed that there is significant variation in difficulty in achieving the target. The process of target determination should be done on a scientific basis with some level of standardization and uniformity with flexibility to incorporate local requirements.

Demand for Health Care: An important objective is to improve the demand for health care among the people. However, it is revealed that more than 1/3rd rarely approach for services. Thus the latent demand for these services needs to be converted to real demand which will improve the health care outcome. Socio-economic and demographic characteristic of those people can be identified for focussed targeting of awareness programs.

Drug Availability: In some cases, health workers have reported stock-out of drugs. Supply chain management and storage of drugs has to be addressed depending on the consumption pattern, distance from main storage centre and other emergency supplies available. A proper real time inventory management system can heal to overcome the problem to a large extent.

Vacancy of Health Personnel: The vacancy level in health workers is 27%. There is an urgent need to recruit personnel to fill these vacancies and have larger share of female as health workers. ASHA workers have made strong penetration in the health care system and need to be encouraged to focus on weak areas.

Clarity of Work: Absence of clarity of work among the health workers in their day-to-day work has to be addressed at the district level by preparing and updating job chart, prioritising tasks of each health workers and reviewing the performance on that basis. Though health organization must be capable of responding to emergency and unforeseen situations, all the regular activities must be planned and organized properly. Absence of clarity can be significant reason for high burden of work.

Target Achievement: MLR performed on a range of independent variables indicate that increase in involvement in decision making, burden of work and chances of promotion improve target achievement. On the contrary, increase in reporting tends to adversely affect the target achievement.

Motivation: In this case, MLR has indentified involvement in decision making, performance evaluation and review of work of health workers as key factors responsible for higher levels of motivation.

Involvement in Decision Making: Health workers are the main interface in public health delivery system. Their knowledge and feedback are important for success of health care

initiatives. An institutional mechanism for their involvement in decision making would enhance the effectiveness of delivery system.

Opportunity for Promotion/Career Growth: Though there is limited scope for improvement in this respect, health workers can be considered for posting as staff nurse in addition to public health nurse after providing relevant short/medium duration training.

Burden of Work: Interestingly, MLR reveals that increase in burden of work results in better performance. However, this linear relationship may change if the burden of work keeps increasing and this phenomenon requires further study**.**

Monitoring & Review: Reports and reviews of performance are integral part of management of health care delivery. The number of such reports and review must ensure effectiveness without become a burden on day-to-day work. In reporting, there is significant variation across districts. MLR show that increase in work load due to number of reports and time spent on this adversely affects the target achievement. This can be addressed to some extent by standardizing the reports, using information technology in management information system and can be designed based on the experience in the districts to ensure optimality and effectiveness.

Review of work brings the health workers and superiors in direct contact and provides opportunity for guidance and appreciation of work and has a positive impact on motivation.

Performance Evaluation: High degree of variation is found across the districts which require reasonable level of standardization, uniformity and timely submission. Moreover, this may have detrimental effect on the morale and motivation of employees if it is not seen to be just and fair.

Pay & Allowances: Sizeable proportion of health workers is not fully satisfied with the pay & allowances. Since pay and allowances in Government are based on periodic pay commission recommendations, it is difficult to make any major changes. However, Health Department may devise monetary and non-monetary rewards to recognize outstanding achievements and contribution to health care personnel at different levels.

Training: Though the quality of training was found to be good in all districts, it was found to be inadequate in some cases. Training and workshops have to be conducted to meet minimum level of requirements for all health workers. In addition, need based training programs can be designed after assessing the feedback of health workers and doctors.

Time Management: Nearly half of the health workers think they are not able to use their time very effectively. This is an issue which depends on many factors like planning, local issues, burden of work and personal issues. Information technology can be an important tool for effective time management. However, it requires a detailed study to understand this issue properly as this is linked to many other factors like local priorities and emergencies.

Financial Powers: NRHM and RCH II provide for sizeable financial powers to the health workers to undertake minor repairs and emergency purchases. In practice, this is not easy to exercise these powers and hence requires simplification of procedures and training of health workers in procurement.

9.2 Demand for Health Care: Beneficiaries/Patients

Age of Beneficiaries: Most of the male beneficiaries avail health care only after the age of 25. Thus, they do not have proper guidance and counselling before the marriageable age. In general, RCH activities tend to be women and child centric and rightfully so. However, men being key decision makers in most of the households, they have to be targeted for adolescent, pre-marriage and peri-conceptional counselling and awareness programs.

With increase in age, the type of health service required undergoes a change: from maternal health to immunization to family planning. Maternal health and nutrition have moderate demand in all age groups. Thus, right services have to be made available to the right age groups by the health care system

Income: In Ahmedabad which is an urbanized district most of the beneficiaries were from low income groups whereas in Bharuch and Junagadh, which are largely rural, sizeable proportion of non-low income groups avail health centre services. This provides two or more interpretations: First one is that, in rural areas less proportion of poor people approach health centre for services; but the second more plausible reason could be that in urban areas less proportion of high income people avail these services since private health care is widely available. However, this relationship has to be explored with further detailed study to understand the implication of income in totality.

Income level of respondents is a key differentiator of various aspects of health care and right and relevant health care can be designed based on the income level of families within a given social milieu.

Literacy: Similar to income, in Ahmedabad more proportion of beneficiaries are non-literate compared to other districts. Multiple interpretations similar to the above can be made in this case also and hence requires further study.

Level of literacy also has significant impact on health care choices of people and hence an important parameter along with income in formulating the health care policy and designing delivery system.

Caste: It is observed that Scheduled Tribe population in Ahmedabad have low participation in awareness programs. People of tribal community migrate to urban centre for seasonal and short term work with families. But they may not have access to public health services during the stay which is the reason for low percentage participation. This needs to be addressed by strengthening monitoring and field visits to their location.

Awareness Programs: The level of participation in maternal health programs is relatively less in the State. Since this requires sustained counselling over a longer period, it can be linked to some other activities or incentives so that there is meaningful participation by beneficiaries.

NGO: They play an important role in public health care wherein they visit beneficiaries for awareness generation. However, it was found that they were active in Ahmedabad which is an urban centre but nearly absent in other two districts which are largely rural. Funds provided to NGO under NRHM should have incentive structure to provide services in remote and rural areas of the State.

Guidance seeking / Decision Making Behaviour: While the source of guidance could be family or health workers, decision making is a personal choice or a family decision. Family members, especially spouses and parents must be engaged in awareness programs.

Purpose of Visit to Health Centre: Maternal health and nutrition do not constitute key reasons for visit to health centre even among female. This situation needs rectification so that the beneficiaries are well targeted and demand for these services improves.

Infrastructure: Similar to findings from health workers surveys, sizeable share of beneficiaries indicate the need to improve availability of transport and road connectivity. Hence priority has to be given to provide funds to improve road connectivity in weak areas.

Facilities: Condition of health centre, cleanliness and availability of water, toilet etc., varies across districts. During this survey, the need for improvement was found in Ahmedabad, followed by Junagadh and Bharuch.

Service at Health Centre: There is significant variation in the counselling and quality of service across the districts. This is particularly low in Ahmedabad on both the counts. Even repeat visit is low in Ahmedabad. Socio-economic and other characteristics require detailed study to examine and understand the problem.

Quality of Service: This is significantly affected by counselling provided by health workers/doctors, cleanliness, availability of vehicles to go to the health centre and utility of awareness program. Thus improving quality of services to the beneficiaries requires improvement in diverse parameters and hence is a challenging task. Micro-planning is required at the district level to make available vehicles and cleanliness in health centres. Impact of awareness programs has to studied with focus on effectiveness in terms of response.

Drug/Lab Services: In nearly 50% cases, beneficiaries had to get drugs or laboratory services from outside. This may have adverse impact on the perception of beneficiaries and need to be addressed with proper supply chain and inventory management as discussed earlier. Similarly lab services must be available and reliable. This can even be outsourced by providing space for laboratory at the health centre premises.

Documentation & Records: This was found to be extremely useful by beneficiaries. However, the availability is not extensive and uniform. Effective use of information technology tools can ensure a reliable and useful database for this purpose.

Finance: Nearly 3/4th of beneficiaries are willing to pay for better services. Strangely, this share is high among the low income group, less literate and labour groups. It is important to evaluate this phenomenon, ascertain the factors driving this and deduce meaningful conclusions.

Repeat Visit to Health Centre: Analysis of repeat visit shows that beneficiaries with higher literacy are likely to visit again compared to those with low literacy. Similarly BPL beneficiaries are less likely to return compared to non-BPL. Thus, the low literacy and low income beneficiaries require extra focus so that they return to health centre for health care.

9.3 Future Scope

Multi-Agency Approach for Immunization: Target based planning and execution is nearly absent in key child health activities like immunization. Given the need to improve immunization level in the State, a multi-agency model involving qualified private health practitioners at reasonable service charges can be evaluated.

Time Management: Nearly half of the health workers think they are not able to use their time very effectively. This is an issue which depends on many factors like planning, local issues, burden of work and personal issues. Information technology can be an important tool for effective time management. However, it requires a detailed study to understand this issue properly as this is linked to many other factors like local priorities and emergencies.

Health Worker Cadre: It was found that most of the key function of the FHW and MPHW are common though in terms of job chart there is some difference. Further study is required to ascertain the need to continue them as separate cadres or merge them into single cadre.

Income: In Ahmedabad which is an urbanized district most of the beneficiaries were from low income groups whereas in Bharuch and Junagadh, which are largely rural, sizeable proportion of non-low income groups avail health centre services. This relationship has to be explored with further detailed study to understand the implication of income in totality.

Literacy: Similar to income, in Ahmedabad more proportion of beneficiaries are non-literate compared to other districts. Multiple interpretations similar to the above can be made in this case also and hence requires further study.

Migration: People of tribal community migrate to urban centre for seasonal and short term work with families. But they may not have access to public health services during the stay which is the reason for low percentage of seeking health care. This issue also requires thorough study and assessment to make proper policy initiatives.

Purpose of Visit: It was observed that the purpose of visit of poor, low income, low literate and backward caste beneficiaries is mainly to treat communicable diseases. In contrast, other groups visited for immunization and family planning services. This shows that the vulnerable sections approach for curative rather than preventive health care. Detailed further study is required to understand this phenomenon to make suitable policy initiatives.

Finance: Nearly 3/4th of beneficiaries are willing to pay for better services. Strangely, this share is high among the low income group, less literate, backward caste and labour groups. It is important to evaluate this phenomenon, ascertain the factors driving this opinion and address the issue.

Visit to other health practitioners: Majority of the beneficiaries had visited other health practitioners before coming to health centre. This initial resistance to visit health centres as first choice is a phenomenon which requires thorough study and examination.

X. Conclusion

Health is a vital social sector which needs Government intervention especially in public health arena. A broad and balanced growth of the society can occur only if we can attain desirable level of the health status for the whole population. The country has an ambitious vision to transform the health status of our people. The goals are challenging yet achievable with proper system and strategy.

While the vision is enunciated through many policies, action on ground needs to match them. NRHM provides an enabling mechanism to march towards these goals. The study reveals that Gujarat has a socio-economic environment which is conducive to achieve these goals. Significant gains have been made in improving the health care indicators in the State by increasing financial support, a planned approach to improve the health care system and involvement of all stakeholders to attain the desired goals. But, the country and state have a long way to go before completing the unfinished task of achieving these goals.

To do all these, the management of public health delivery at the field level requires multi-pronged strategy of reform in health delivery system. At one level this includes, improving the process of preparation of health action plan, reducing gaps in the availability of health personnel, meaningful involvement of stakeholders at the local level, improving the motivation, eliminating factors which hamper productivity, reorganize health workers and simplification of procedures to facilitate exercise of financial powers. At another level, a customer-centric approach needs to be inculcated in the health care service to enhance demand for these services. This is the recurring theme in the work as assessed from the surveys. This requires an approach in which the socio-economic and demographic factors of the target population must be understood and incorporated in formulating policy and devising the action plan.

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Annexure

Survey of Health Workers

Date: _____   Designation: FHW/MPHW

PHC Name: _____   District: _____

I. Areas of Work (Tick the appropriate boxes)

☐ *Family Planning* ☐ *Communicable diseases* ☐ *Non-Communicable diseases*

☐ *Immunization* ☐ *Antenatal care* ☐ *Postpartum care* ☐ *Nutrition*

a   Main Focus functions from the above: (mention any 3 from the above)

1.

2.

3.

II. Health Planning

a   Is there an annual health plan for your area?: *Yes/ No*

Who prepared the plan? (tick one box)

☐ *District level* ☐ *Talukas level* ☐ *PHC level* ☐ *Self* ☐ *others*

b   Who of the following were involved in preparing the plan? (tick the relevant boxes)

☐ *Village panchayat members* ☐ *Women groups* ☐ *NGOs/Social groups*

☐ *Religious groups* ☐ *Community leaders* ☐ *Teachers*

☐ *Anganwadi workers* ☐ *Gram sabha*

c   Targets are given in case of (tick relevant boxes)

☐ *Family planning* ☐ *Institutional delivery* ☐ *Immunization*

☐ *Infant mortality rate* ☐ *Maternal mortality rate* ☐ *Couple protection rate*

d   What was the level of contribution in preparing the plan:

	Very Low	*Low*	*Average*	*High*	*Very High*
Village panchayat members	☐	☐	☐	☐	☐
Women groups	☐	☐	☐	☐	☐
NGOs/Social groups	☐	☐	☐	☐	☐
Religious groups	☐	☐	☐	☐	☐
Community leaders	☐	☐	☐	☐	☐
Teachers	☐	☐	☐	☐	☐
Anganwadi workers	☐	☐	☐	☐	☐
Gram sabha	☐	☐	☐	☐	☐

III.   **Travel**

    a   How long it takes to reach health centre from residence

       ☐ *Long (> 2 hours)*   ☐ *Normal (1-2 hours)*   ☐ *Short time (< 1 hour)*

    b   Availability to the health centre?

       ☐ *Always*   ☐ *Sometimes*   ☐ *Rarely*

    c   How good is the transport facility to travel to villages/ settlements?

       ☐ *Always*   ☐ *Sometimes*   ☐ *Rarely*

IV.   **Work**

    a   Contact of Beneficiary (tick one)

       ☐ *Visit to home*   ☐ *at Sub Centre*   ☐ *at Anganwadi*

       ☐ *through friends/relatives*   ☐ *through community groups*   ☐ *others _____*

    b   Awareness Generation methods (tick one)

       ☐ *Visits to beneficiaries*   ☐ *Women Group meetings*   ☐ *Community leaders meetings*

       ☐ *Mamta Day*   ☐ *Gram Sabha*   ☐ *Others_____*

    c   How do you visit the beneficiaries?

       ☐ By walk   ☐ By 2-wheeler   ☐ Local transport

    d   How much difficult it is to achieve targets?

       ☐ *Very easy*   ☐ *Easy*   ☐ *Normal*   ☐ *Difficult*   ☐ *Very difficult*

    e   Do beneficiaries approach you for health services?

       ☐ *Never*   ☐ *Rarely*   ☐ *Sometimes*   ☐ *Mostly*   ☐ *Always*

V.   **Facilities at Work**

    a   How much comfortable is you work place

       ☐ *Bad*   ☐ *Poor*   ☐ *Average*   ☐ *Good*   ☐ *Excellent*

    b   How good are facilities like seating/ toilet etc?

       ☐ *Bad*   ☐ *Poor*   ☐ *Average*   ☐ *Good*   ☐ *Excellent*

    c   How is the availability of medical equipments?

       ☐ *Bad*   ☐ *Poor*   ☐ *Average*   ☐ *Good*   ☐ *Excellent*

    d   Were the equipments in working condition during the year?

       ☐ *Never*   ☐ *Rarely*   ☐ *Sometimes*   ☐ *Mostly*   ☐ *Always*

VI   **Interpersonal Relationship and Motivation**

    a   How do you think is the interpersonal relationship between colleagues?

       ☐ *Bad*   ☐ *Poor*   ☐ *Average*   ☐ *Good*   ☐ *Excellent*

       Do you get appreciation for your performance and good work?

       ☐ *Never*   ☐ *Sometimes*   ☐ *Mostly*   ☐ *Always*

c Are you involved in decision making ?(For example – fixing targets)

☐ *Never*   ☐ *Sometimes*   ☐ *Mostly*   ☐ *Always*

d Do you think appraisal of your performance is proper and fair?

☐ *Never*   ☐ *Sometimes*   ☐ *Mostly*   ☐ *Always*

VII. Management Information System

a Reporting

Number	☐ *Very High*	☐ *High*	☐ *Normal*	☐ *Less*	☐ *Very Less*
Utility	☐ *Excellent*	☐ *Good*	☐ *Normal*	☐ *Less*	☐ *Very Less*

b Review Meeting

Number	☐ *Very High*	☐ *High*	☐ *Normal*	☐ *Less*	☐ *Very Less*
Utility	☐ *Excellent*	☐ *Good*	☐ *Normal*	☐ *Less*	☐ *Very Less*

VIII. Time management

a Do you think it is possible to use your time more effectively

☐ *Not possible*   ☐ *Very little*   ☐ *Somewhat*   ☐ *Very Well*

b How many days are spent on the following in a year

All Activities	**No. of days/year**
Tours/field activities	
At Headquarter	
Training /Workshops	
Attend Meetings	
Preparation of reports/documentation	
Emergency services (Epidemic etc)	
Others (pl. mention)	

IX. Financial and other Issues

1 What is the level of satisfaction with your pay and perks?

☐ *Not at all*   ☐ *Somewhat*   ☐ *Fully*

2 How much is the burden of work?

☐ *Heavy*   ☐ *Norma*   ☐ *Less*

3 Do you feel lack of clarity in your job chart and tasks?

☐ *Never*   ☐ *Rarely*   ☐ *Mostly*   ☐ *Always*

4 How is the chance for career growth/promotional opportunities?

☐ *No Chance*   ☐ *Poor*   ☐ *Ordinary*   ☐ *Good*

5   Is it possible to get minor repairs and maintenance done at the health centre level?

☐ *Very easy*   ☐ *Easy*   ☐ *Normal*   ☐ *Difficult*   ☐ *Very difficult*

Is it possible to purchase emergency supplies at your level?

☐ *Always*   ☐ *Mostly*   ☐ *Sometimes*   ☐ *Rarely*

X.   **Capacity Building**

1   Adequacy of training programs during the year

☐ *Less*   ☐ *Sufficient*   ☐ *High*

2   How is the quality of the training programs?

☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Very Good*   ☐ *Excellent*

XI.   **Monitoring and Review**

1   Do you think the review of performance is useful to you?

☐ *Never*   ☐ *Sometimes*   ☐ *Mostly*   ☐ *Always*

2   Frequency of visits / inspection by Superiors

☐ *Never*   ☐ *Sometimes*   ☐ *Mostly*   ☐ *Always*

આરોગ્ય કાર્યકર સર્વેક્ષણ પ્રશ્નાવલી

તારીખ :_____   હોદ્દો: FHW/MPHW/SUPERVISOR

પ્રા.આ. કેન્દ્ર: _____   જિલ્લો: _____

ઉત્તરદાતાઓ માટે ઉપયોગી માહિતી

(1) આ પ્રશ્નાવલીમાં આપે કોઇ પણ જગ્યએ આપનું નામ લખવાનું નથી. (2) આપના દ્વારા આપવામાં આવેલ તમામ જવાબ / માહિતી ગુપ્ત રાખવામાં આવશે જેની અચૂક નોંધ લેશો. (3) આપના જવાબો સંશોધનની સચોટતા માટે અત્યંત ઉપયોગી નીવડનાર હોઇ તમામ પ્રશ્નોના સંવેદનશીલ જવાબો આપવા વિનંતી. (4) કોઇ પ્રશ્ન ન સમજાય તો કોઇ પણ જવાબદાર વ્યક્તિ / અધિકારીને પૂછી સ્પષ્ટતા કર્યા બાદ જ જવબ નોંધવા વિનંતી.

I. **કાર્યક્ષેત્ર**

નીચેના માંથી કૈ આરોગ્યલક્ષી કામગીરી કરો છો? ટીક કરો

☐ કુટુંબ કલ્યાણ   ☐ રોગચાળા નિયંત્રણ   ☐ આરોગ્ય શિક્ષણ

☐ રસીકરણ   ☐ માતૃબાળ સંભાળ   ☐ ન્યુટ્રીશન   ☐ અન્ય_____

a ઉપરના માંથી સૌથી વધારે ભાર કઇ કામગીરી પર આપો છો? કોઇ પણ 3 નામ આપો

1._____   2. _____   3. _____

II. **આયોજન**

a તમારા આરોગ્યકેન્દ્રની વાર્ષિક કામગીરીના આયોજન માટે કોઇ એક્શન પ્લાન (યોજન) તૈયાર કરો છો? *હા / ના,* જો હા હોય તો આ પ્લાન કઇ રીતે તૈયાર કરવામાં આવે છે?

☐ જિલ્લા કક્ષાએ   ☐ બ્લોક કક્ષાએ   ☐ પ્રાથમિક આરોગ્ય કેન્દ્ર કક્ષાએ

☐ તમે પોતે   અન્ય _____

b આ પ્લાન તૈયાર કરવામાં નીચેના માંથી કોણ કોણ સામેલ થાય છે?

☐ ગ્રામ પંચાયતના સભ્યો   ☐ મહિલા જૂથો   ☐ એનજીઓ

☐ આંગણવડી કાર્યકરો   ☐ ગ્રામ સભાના સભ્યો   ☐ અન્ય _____

c નીચેના માંથી કઇ કામગીરીમાં તમોને લક્ષ્યાંકો આપવામાં આવે છે?

☐ કુટુંબ કલ્યાણ   ☐ સંસ્થાકીય પ્રસુતિ   ☐ એન્ટીનેન્ટલ વિઝીટ   ☐ અન્ય _____

d આ પ્લાન તૈયાર કરવામાં નીચેનાઓનો ફાળો કેવો હતો?

	ન હતો	ઓછો	સામાન્ય	સારો	ઘણો સારો
ગ્રામ પંચાયતના સભ્યો	☐	☐	☐	☐	☐
મહિલા જૂથો	☐	☐	☐	☐	☐
એનજીઓ	☐	☐	☐	☐	☐
આંગણવડી કાર્યકરો	☐	☐	☐	☐	☐
આશા કાર્યકરો	☐	☐	☐	☐	☐

III.	મુસાફરી

a તમારા નિવાસસ્થાનેથી આરોગ્યકેન્દ્ર ખાતે પહોંચવા માટે આશરે કેટલો સમય લાગે છે?

☐ ખૂબ વધારે (2 કલાકથી વધુ)   ☐ સામાન્ય (1 થી 2 કલાક)   ☐ થોડો (1 કલાકથી ઓછો)

b આરોગ્યકેન્દ્ર ખાતે પહોંચવા માટે વાહનોની યોગ્ય સગવડ મળી રહે છે?

☐ હંમેશા   ☐ ક્યારેક   ☐ ક્યારેય નહી

c આપના કાર્યક્ષેત્રના ગામડાઓમા6 જવા માટે વાહનોની યોગ્ય સગવડ મળી રહે છે?

☐ હંમેશા   ☐ ક્યારેક   ☐ ક્યારેય નહી

IV.	રોજબરોજની કામગીરી

a સામાન્ય રીતે આપના વિસ્તારના લાભાર્થીઓનો સંપર્ક કઇ કઇ રીતે કરો છે? ટીક કરો

☐ ઘરની મુલાકાત દ્વારા   ☐ પેટાકેન્દ્ર ખાતે આવે ત્યારે   ☐ આંગણવાડી ખાતે

☐ મિત્રો/સંબંધીઓ દ્વારા   ☐ અન્ય_____

b આરોગ્ય કાર્યક્રમોનો પ્રચાર પ્રસાર કઇ રીતે કરી શકો છો?

☐ લાભાર્થીઓના ઘરે મુલાકાત   ☐ મહિલા ગ્રૃપ મીટીંગ   ☐ કોમ્યુનીટી શિબિર

☐ મમતા દિવસે   ☐ ગ્રામ સભામાં   ☐ અન્ય _____

c લાભાર્થીઓની મુલાકાત માટે કઇ રીતે મુસાફરી કરો છો?

☐ ચાલતા જઇને   ☐ ટુ વ્હીલર

☐ સ્થાનિક પરિવહન (છકડો /રીક્ષા વિગેરે)   ☐ અન્ય _____

d વાર્ષિક લક્ષ્યાંકો પૂરા કરવાની કામગીરી કેવે લાગે છે?

☐ બહુ સરળ   ☐ સરળ   ☐ સામાન્ય   ☐ મુશ્કેલ   ☐ અશક્ય

e શું લાભાર્થીઓ પોતની મેળે / સ્વેચ્છાએ સ્વાસ્થ્ય સેવાઓ માટે તમારો સંપર્ક કરે છે?

☐ ક્યારેય નહી   ☐ ક્યારેક   ☐ ભાગ્યે જ   ☐ મોટા ભાગે   ☐ હંમેશા

V.	આરોગ્યકેન્દ્ર પરની સુવિધાઓ

a તમારા કેન્દ્રની હાલની હાલત કેવી છે?

☐ ખરાબ   ☐ નબળી   ☐ સામાન્ય   ☐ સારી   ☐ શ્રેષ્ઠ

b કેન્દ્ર ખાતે પાણી, બેઠક વ્યવસ્થા, ટોઇલેટ, બાથરૂમ વગેરેની વ્યવસ્થા કેવી છે?

☐ ખરાબ   ☐ નબળી   ☐ સામાન્ય   ☐ સારી   ☐ શ્રેષ્ઠ

c સામાન્ય રીતે આરોગ્યકેન્દ્ર ખાતે આરોગ્ય સેવા પૂરી પાડવા માટે જરૂરી એવી તમામ દવાઓ, સાધન સામગ્રીઓ વગેરેની ઉપલબ્ધતા કેવી હોય છે?

☐ ખરાબ   ☐ નબળી   ☐ સામાન્ય   ☐ સારી   ☐ શ્રેષ્ઠ

d વર્ષ દર્મ્યાન તમામ સાધનો ચાલુ હાલતમાં હોય છે?

☐ ક્યારેય નહી   ☐ ક્યારેક   ☐ ભાગ્યે જ   ☐ મોટા ભાગે   ☐ હંમેશા

VI.	સહકર્મચારીઓ સાથેના સંબધો તથા ઉપલી કક્ષાએથી મળતું મોટીવેશન / પ્રોત્સાહન

a સહકમચારીઓ વચ્ચે પરસ્પરના સંબધો કેવા છે?

☐ ખરાબ   ☐ નબળા   ☐ સામાન્ય   ☐ સારા   ☐ શ્રેષ્ઠ

b તમને તમારી સારી કામગીરી માટે યોગ્ય પ્રોત્સાહન મળી રહે છે?

☐ ક્યારેય નહી   ☐ ક્યારેક   ☐ મોટા ભાગે   ☐ હંમેશા

c ઉપલી કક્ષાએથી તમોને પ્લાનીંગ કરવામાં કે નિર્ણયો લેવામાં સામેલ કરવામાં આવે છે?

☐ ક્યારેય નહી   ☐ ક્યારેક   ☐ મોટા ભાગે   ☐ હંમેશા

	d	શું તમને લાગે છે કે તમારી કામગીરીનું મૂલ્યાંકન યોગ્ય રીતે થાય છે?				
		☐ ક્યારેય નહી ☐ ક્યારેક ☐ મોટા ભાગે ☐ હંમેશ				

VII. તમારા દ્વારા કરવામાં આવતા રિપોર્ટીંગ અને મીટીંગ અંગેની માહિતી (યોગ્ય વિકલ્પમા ટીક કરો)

a રિપોર્ટીંગ

સંખ્યા	☐ ઘણી વધારે	☐ વધારે	☐ માપસર	☐ ઓછી	☐ ઘણી ઓછી
ઉપયોગિતા	☐ શ્રેષ્ઠ	☐ સારી	☐ સામાન્ય	☐ ઓછી	☐ ઘણી ઓછી

b રીવ્યુ મીટીંગ

સંખ્યા	☐ ઘણી વધારે	☐ વધારે	☐ માપસર	☐ ઓછી	☐ ઘણી ઓછી
ઉપયોગિતા	☐ શ્રેષ્ઠ	☐ સારી	☐ સામાન્ય	☐ ઓછી	☐ ઘણી ઓછી

VIII. ટાઇમ મેનેજમેન્ટ

a તમને લાગે છે કે તમને મળેલ સમયનો અસરકારક રીતે ઉપયોગ કરે શકો છો?

☐ શક્ય નથી ☐ ખૂબ જ ઓછો ☐ સામાન્ય ☐ શ્રેષ્ઠ રીતે

b વર્ષના કુલ દિવસો માંથી કેટલા દિવસો નીચેની કામગીરી માટે વપરાય છે?

પ્રવૃત્તિઓ	આશરે દિવસોની સંખ્યા
ક્ષેત્રીય પ્રવૃત્તિઓ (ફીલ્ડ વિઝીટ)	
હેડ ક્વાટર ખાતે કામગીરી	
તાલીમ / વર્કશોપમાં હાજરી	
મીટીંગોમાં હાજરી	
રીપોર્ટીંગ / ડેટા એન્ટ્રી/ રજીસ્ટર બનાવવા વિગેરે કામગીરી	
રોગચાળા અટકાયત કામગીરી	
અન્ય _____	

IX. નાણાંકીય તથા અન્ય બાબતો

1 તમને મળતા પગાર અને ભથ્થાથી તમને સંતોષ છે?

☐ બિલકુલ નથી ☐ થોડો સંતોષ છે ☐ પૂર્ણ સંતોષ છે

2 તમને ફાળવવામાં આવેલ કામગીરી પ્રત્યે શું માનો છો?

☐ વધુ પડતી છે ☐ પ્રમાણમાં છે ☐ ઓછી છે

3 તમને લાગે છે કે તમને સોંપવામાં આવતી કામગીરી બાબતે તમને સ્પષ્ટ રીતે સમઝાવવામાં આવતા નથી?

☐ ક્યારેય લાગતું નથી ☐ ક્યારેક લાગે છે ☐ મોટે ભાગે લાગે છે ☐ હંમેશા લાગે છે

4 તમને પ્રમોશન માટેની કેવી તકો રહેલી છે?

☐ તક નથી ☐ નબળી છે ☐ સામાન્ય ☐ સારી છે

5 આપના કેન્દ્રના રીપેરીંગ તથા જાળવણી આપને કક્ષાએથી કરવાનું કેવું લાગે છે?

☐ બહુ સરળ ☐ સરળ ☐ સામાન્ય ☐ મુશ્કેલ ☐ અશક્ય

6 ઇમર્જન્સી /કટોકટી પરિસ્થિતીમાં કોઇ પણ વસ્તુઓ, દવાઓ કે સાધનો ખરીદ કરી શકો છો

☐ હંમેશા ☐ મોટા ભાગે ☐ ક્યારેક ☐ ક્યારેય નહી

X.	**તાલીમ**
1	વર્ષ દર્મ્યન અપાતી તાલીમ પૂરતી હોય છે?
	☐ ઓછી હોય છે ☐ યોગ્ય હોય છે ☐ વધુ પડતી હોય છે
2	આ તાલીમોની ગુણવત્તા કેવી હોય છે?
	☐ નબળી ☐ સામાન્ય ☐ સારી ☐ ઘણી સારી ☐ શ્રેષ્ઠ
XI.	**રિવ્યુ તથા મોનીટરીંગ**
1	તમને લાગે છે કે માસિક મીટી%ગ દરમ્યાન કરવામાં આવતી તમારી સમિક્ષા તમારા માટે ઉપયોગી છે?
	☐ ક્યારેય નહી ☐ ક્યારેક ☐ મોટે ભાગે ☐ હંમેશા
2	ઉપલી કક્ષાએથી કેટલા સમયાંતરે તમારી મુલાકાત કરવામં આવે છે?
	☐ ક્યારેય નહી ☐ ક્યારેક ☐ મોટે ભાગે ☐ હંમેશા

Survey of Beneficiaries/ Patients

Date: _____   Name : _____(Optional)_____   Gender : *Male/Female*   Age : ____

No. of family members:____ No. of Children: ____ of which, Girls: ____ Boys:____

Work : _____   Are you BPL: *Yes/No*

Monthly family Income:

☐ *<3000*   ☐ *3000 to 6000*   ☐ *6000 to 10000*   ☐ *10000 to 20000*   ☐ *>20000*

Education:

☐ *No Schooling*   ☐ *Primary*   ☐ *Highschool*   ☐ *Graduate*   ☐ *Post-Graduate*

Caste group: ☐ *SC*   ☐ *ST*   ☐ *SEBC*   ☐ *Others*

I.   Awareness of Health Issues:

a   Have you attended any health awareness programs: *Yes/ N*

b   What were the issues covered (Tick the appropriate)

☐ *Immunization*   ☐ *Family Planning*   ☐ *Diseases- Malaria, TB etc*

☐ *Antenatal care*   ☐ *Nutrition*   ☐ *Others_____*

c   What was the usefulness of the program:

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

d   Has any of the following visited your home (Please tick the appropriate

☐ *Female health worker*   ☐ *Multipurpose health worker*   ☐ *Anganwadi worker*

☐ *ASHA Worker*   ☐ *NGO/ Volunteer*   ☐ *Doctor*   ☐ *Others _____*

e   Whose guidance you take for your or children health problems

☐ *Spouse*   ☐ *Parents*   ☐ *Friends/relatives*   ☐ *Health worker*

☐ *ASHA Worker*   ☐ *Anganwadi worker*   ☐ *Others_____*

II.   Health Care Services Availed

a   Have you been to government health centres?   *Yes/ No*

b   Did you go to any other hospital or health practitioner before going there? *Yes? No*

If Yes, which of the following

☐ *Local General Practitioner*   ☐ *Ayurvedic Doctor*   ☐ *Private qualified doctor*

☐ *Private Nurse*   ☐ *Others _____*

c   Were you satisfied with the service there?

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

d   What was the purpose of visiting health centre:

☐ *Immunization*   ☐ *Family Planning*   ☐ *Diseases- Malaria, TB etc*

☐ *Antenatal care*   ☐ *Postpartum care*   ☐ *Nutrition*   ☐ *Others ____*

e	Who took the decision to go to the health centre (tick only one)	

e   Who took the decision to go to the health centre (tick only one)

☐ *Own decision*   ☐ *Spouse*   ☐ *Parents*   ☐ *Friends/Relatives*

☐ *Health worker*   ☐ *ASHA worker*   ☐ *Others____*

f   How is the connectivity (bus/jeep etc) to health centre

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

g   How is the road condition to health centre?

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

III.   Quality of Service

a   Availability during visit: Doctor: ***Yes/ No***;   H W: ***Yes/No***

How was the quality of care?

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

b   How long you had to wait to meet the doctor/ health worker:

☐ *< 1 hr*   ☐ *Up to 2 hr*   ☐ *> 2 hr*

c   Guidance in the health centre:

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

d   How was the cleanliness?

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

e   How was the explanation of treatment/procedure by doctor/worker

☐ *Bad*   ☐ *Poor*   ☐ *Normal*   ☐ *Good*   ☐ *Excellent*

f   How were facilities like drinking water, waiting room, toilet etc?

☐ *Poor*   ☐ *Average*   ☐ *Good*   ☐ *Very Good*   ☐ *Excellent*

g   Availability of drugs, laboratory services: ***Yes/No,***

If yes, how was the service?

☐ *Poor*   ☐ *Average*   ☐ *Good*   ☐ *Very Good*   ☐ *Excellent*

h   Was there any need to go to private for drugs or lab services? ***Yes/No***

i   Was there any need to spend in health centre? ***Yes/No***

If yes, for what service?

☐ Lab   ☐ Drugs   ☐ Others_____

j   Did you get financial assistance from government: ***Yes/No***

If yes, was it easy to get the assistance? ***Easy/ Not Easy***

k   Did you visit and spend on private health practitioner in last one year? ***Yes/No***

If yes, how much did you spend?

☐ *<1000*   ☐ *1000 to 3000*   ☐ *3000 to 10000*   ☐ *>10000*

l   Are you willing to pay some fee to get better service in the health centre? ***Yes/No***

IV. **Referral Services**

    a Were you referred to taluka/district hospital for higher treatment? *Yes/No*

    b If yes, did health worker or doctor accompany you? *Yes/No*

    c How was the quality of service there?

    ☐ *Poor*   ☐ *Average*   ☐ *Good*   ☐ *Very Good*   ☐ *Excellent*

V. **Records and Documentation**

    a Were you given any health document in the centre: *Yes/ No*

    b Do you think it is useful to you : *Yes/No*

VI. **Relationship**

In future, what is the possibility that you will go to health centre for your health problem?

☐ Never   ☐ May be   ☐ Certainly

લાભાર્થી સર્વેક્ષણ પ્રશ્નાવલી

તારીખ _____ નામ : _____(વૈકલ્પિક)_____ ☐ પુરુષ ☐ સ્ત્રી ઉંમર :___

કુટુંબના કુલ સભ્યો: _____ બાળકોની સંખ્યા : ___ જે પૈકી દિકરા ___ દિકરી:___

લાભાર્થીનો વ્યવસાય

☐ ઘરકામ ☐ ધંધો ☐ નોકરી ☐ મજુરીકામ ☐ ખેતીકામ ☐ અન્ય____

માસિક કૌટુંબિક આવક

☐ 3000 કરતાં ઓછી ☐ 3000 થી 6000 ☐ 6000 થી 10000

☐ 10000 થી 20000 ☐ 20000 થી વધુ

તમે બી.પી.એલ. લાભાર્થી છો? હા/ના

શિક્ષણ

☐ નિરક્ષર ☐ પ્રાથમિક ☐ માધ્યમિક ☐ સ્નાતક ☐ અનુસ્નાતક

સામાજિક દરજ્જો ☐ SC ☐ ST ☐ SEBC ☐ અન્ય

I. **આરોગ્ય પ્રત્યેની સભાનતા**

a તમે કોઇ આરોગ્ય જાગૃતિને લગતા કાર્યક્રમમાં હાજરી આપેલ છે? હા/ના

b જો હા, તો કયા વિષયને લગતા કાર્યક્રમોમાં હાજરી આપી છે?

☐ રસીકરણ ☐ કુટુંબ કલ્યાણ ☐ રોગો, મેલરીયા, ટીબી વગેરે

☐ પ્રસુતાની સારસંભાળ ☐ પોષણ ☐ અન્ય_____

c આ કાર્યક્રમની ઉપયોગિતા કેવી હતી?

☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

d નીચેના માંથી કોઇ તમારા ઘરે મુલાકાત લે છે? ટીક કરો

☐ સ્ત્રી આરોગ્ય કાર્યકર ☐ પુરુષ આરોગ્ય કાર્યકર ☐ આંગણવાડી કાર્યકર

☐ આશા કાર્યકર ☐ સામાજિક સંસ્થાના કાર્યકર ☐ ડોક્ટર ☐ અન્ય_____

e તમે તમારી અથવા બાળકોની આરોગ્ય સમસ્યાઓ માટે કોનું માર્ગદર્શન લો છો?

☐ પતિ ☐ માતા-પિતા ☐ મિત્રો/સબંધિઓ ☐ આરોગ્ય કાર્યકર

☐ આશા કાર્યકર ☐ આંગણવાડી કાર્યકર ☐ અન્ય_____

II. **મેળવેલ આરોગ્ય સેવાઓની વિગત**

a છેલ્લા બે વર્ષમાં તમે ક્યારેય આરોગ્યકેન્દ્ર પર સેવા લેવા ગયા છો? હા /ના

b શું તમે ત્યાં જતા પહેલા અન્ય કોઇ હોસ્પિટલ કે જનરલ પ્રેક્ટીશનર પાસે ગયા હતા? હા/ના

જો હા, તો નીચેના માંથી કોની પાસે ગયા હતા?

☐ ગામના જનરલ પ્રેક્ટીશનર ☐ આયુર્વેદીક વૈદ્ય ☐ ખાનગી ક્વોલીફાઇડ ડૉક્ટર

☐ નર્સ બહેન ☐ અન્ય_____

c તમને સરકારી આરોગ્યકેન્દ્ર ખાતે કેવી સેવાઓ મળેલ હતી?

☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

d આરોગ્યકેન્દ્રની મુલાકાત કયા હેતુ માટે લીધેલ?

☐ રસીકરણ ☐ કુટુંબ કલ્યાણ (પરિવાર નિયોજન) ☐ માંદગીની સારવાર

☐ પ્રસુતાની સારસંભાળ સબંધ ☐ પોષણ ☐ Others ____

e આરોગ્યકેન્દ્ર પર જવાનો નિર્ણય કોણ કરે છે?

☐ તમે પોતે ☐ પતિ ☐ માત-પિતા ☐ મિત્રો/સબંધિઓ

☐ આરોગ્ય કાર્યકર ☐ આશા કાર્યકર ☐ અન્ય___

f આરોગ્યકેન્દ્ર પર જવા માટે વાહન વ્યવહારની સગવડતા કેવી છે?

☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

g આરોગ્યકેન્દ્ર પર પહોંચવા માટેના રસ્તાઓ કેવા છે?

☐ ખરાબ ☐ નબળા ☐ સામાન્ય ☐ સારા ☐ શ્રેષ્ઠ

III. સેવાની ગુણવત્તા

a
1) જ્યારે તમે ગયા ત્યારે ડૉક્ટર હાજર હતા ? *હા/ના*

2) આરોગ્ય કાર્યકર હાજર હતા ? *હા/ના*

b સેવા કેવા પ્રકારની મળી

☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

c આરોગ્ય કાર્યકર કે ડૉક્ટરને મળવા માટે કેટલી રાહ જોવી પડી?

☐ 1 કલાક થી ઓછી ☐ 1 થી 2 કલાક ☐ 2 કલાકથી વધારે

d દવાખાનામાં વ્યવહાર કેવો હતો?

☐ ખરાબ ☐ નબળો ☐ સામાન્ય ☐ સારો ☐ શ્રેષ્ઠ

e દવાખાનામાં સ્વચ્છતા કેવી હતી?

☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

f ડૉક્ટર /કાર્યકર દ્વારા આપવામાં આવેલ દવા-સારવારની સમજણ કેવી લાગી?

☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

g પીવાના પાણી, શૌચાલય, વોર્ડ વગેરે જેવી સુવિધાઓ કેવી હતી?

☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

h કેન્દ્રમાં દવાઓ, લેબોરેટરી જેવી સુવિધાઓ મળી ગયેલ? *હા/ના*
જો હા, તો કેવી હતી?

i ☐ ખરાબ ☐ નબળી ☐ સામાન્ય ☐ સારી ☐ શ્રેષ્ઠ

દવાઓ, લેબોરેટરી જેવી તમામ સેવાઓ માટે સરકારી કેન્દ્ર સિવાય બીજે જવું પડે છે? *હા/ના*

j
સરકારી આરોગ્યકેન્દ્ર ખાતે સારવાર માટે નાણાં ખર્ચવા પડેલ ? *હા/ના*
જો હા, તો શેના માટે?

☐ દવાઓ ☐ લેબોરેટરી ☐ અન્ય_____

k	જો તમને સરકાર પાસેથી કોઇ યોજના અંતર્ગત નાણાકીય સહાય મળેલ છે? *હા/ના*
	જો હા, તો તે સહાય સરળતાથી મળી રહેલ કે કોઇ પ્રકારની મુશ્કેલી પડેલ?
	☐ સરળતાથી ☐ મુશ્કેલી પડેલ
L	તમે છેલ્લા એક વર્ષમાં કોઇ ખાનગી ડૉક્ટર / દવાખાનાની મુલાકાત લીઘેલ હતી? *હા/ના*
	જો હા, તો આશરે કેટલા રૂપીયાનો ખર્ચ થયેલ
	☐ 1 હજારથી ઓછો ☐ 1 થી 3 હજાર ☐ 3 થી 10 હજાર ☐ 10 હજારથી વધુ
m	જો તમને આરોગ્યકેન્દ્રના વપરાશ બદલ થોડા પૈસા ચૂકવવા માટે કહેવામાં આવે અને આ પૈસા સેવની ગુણવત્તા વધારવા માટે વાપરવામાં આવે તો તમે તૈયાર છો? *હા/ના*

IV. સંદર્ભ સેવાઓ

a તમને ક્યારેય તાલુકા/જિલ્લાની હોસ્પિટલમાં વધુ સારવાર માટે મોકલવામાં આવેલ હતા? *હા/ના*

b જો હા, તમારી સાથે કોઇ આરોગ્ય કાર્યકર/ડૉક્ટર આવેલ? *હા/ના*

c તે હોસ્પિટલમાં કેવી સારવાર મળેલ?

☐ *ખરાબ*   ☐ *નબળી*   ☐ *સામાન્ય*   ☐ *સારી*   ☐ *શ્રેષ્ઠ*

V. રેકર્ડ કીપીંગ

a તમને કેન્દ્ર પાસેથી કોઇ પણ આરોગ્ય કાર્ડ (કેસ પેપર) આપવામાં આવેલ છે? *હા/ના*

b તમને લાગે છે કે આ કાર્ડ તમને ઉપયોગી છે? *હા/ના*

VI. અન્ય

a ભવિષ્યમાં જરૂર ઉભી થશે ત્યારે તમે સરકારી આરોગ્યકેન્દ્ર પર જશો?

☐ *ક્યારેય નહી*   ☐ *ક્યારેક*   ☐ *હંમેશા*

આભાર

CHAPTER – I

PUBLIC HEALTH IN INDIA:

INTRODUCTION AND EVOLUTION

CHAPTER – II

RATIONALE FOR RESEARCH: LITERATURE REVIEW; PURPOSE OF RESEARCH & SOURCES OF DATA

CHAPTER – III

HEALTH CARE SYSTEM IN INDIA

CHAPTER – IV

HEALTH CARE DELIVERY IN GUJARAT

CHAPTER – V

NATIONAL RURAL HEALTH MISSION

CHAPTER – VI

RESEARCH DESIGN AND METHODOLOGY

CHAPTER – VII

PERFORMANCE ASSESSMENT OF DISTRICTS

CHAPTER – VIII

ANALYSIS AND FINDINGS

CHAPTER – IX

SUGGESTIONS, RECOMMENDATIONS AND FUTURE SCOPE

CHAPTER – X

CONCLUSION

BIBLIOGRAPHY

ANNEXURE