CHAPTER – II

RATIONALE FOR RESEARCH: LITERATURE REVIEW; PURPOSE OF RESEARCH & SOURCES OF DATA

Chapter II

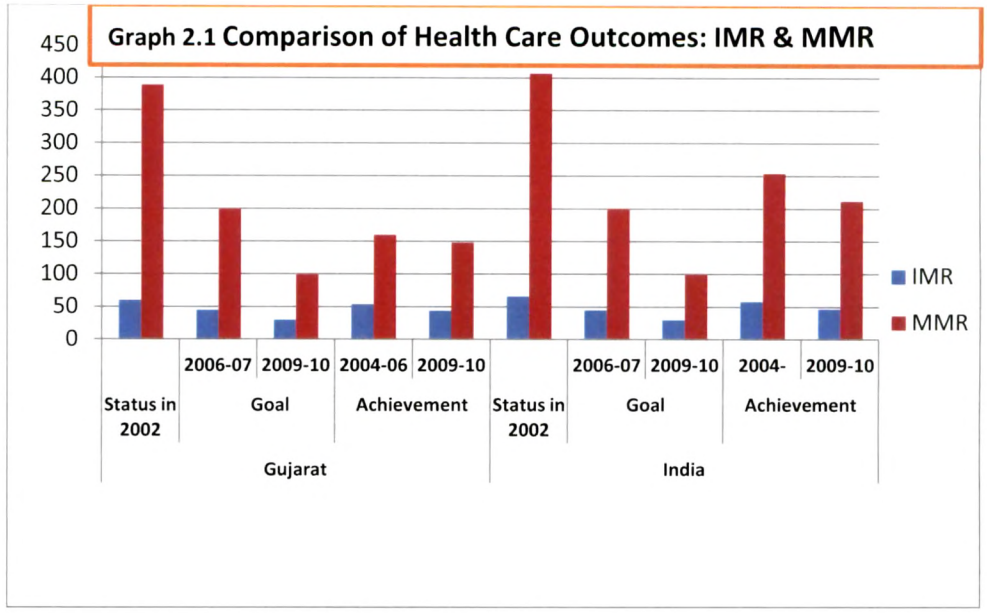
2. Rationale for Research; Review of Literature; Purpose of Research and Sources of Data

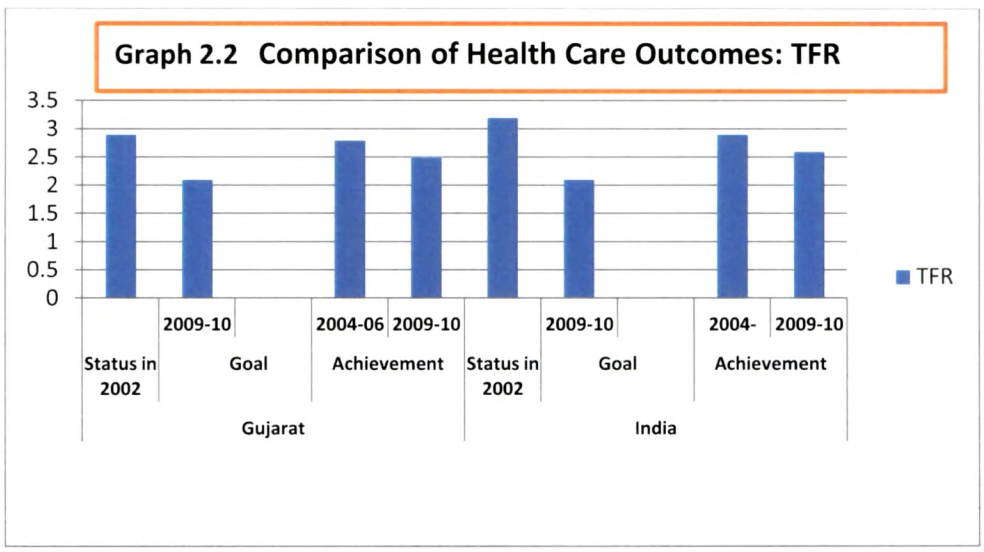
The National Health Policy proposes to optimize utilization of public health delivery at primary level by gradual convergence of all health programs under a single field administration. Vertical programs like RCH, Universal Immunization Programs,TB, Malaria and HIV/AIDS would be integrated to bring about 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





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

[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

[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

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

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-

[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

[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.