LITERATURE REVIEW

The literature review was one of the major ingredients under this research. Research scholar frequently visited several libraries, worked in archives, and also purchased several books, journals and soft materials from the market time to time. However, internet search helped to a great extent. Some free e-books, e-journals and web documents assessed through the internet proved quite worthy. Every bit of information was considered significant and it included books, journals, web articles, news papers reporting and even proceedings of meetings and power point presentations at those meetings or review meetings were not considered needless or useless and all thought out. It would require a mention here that some secondary data sources used in the research was also included as literature in this chapter mainly to describe bearing.

In general, literature review formed the backbone for any qualitative research. The overall literature review process was involved with searching, reading, analyzing, evaluating, and summarizing scholarly materials relevant to the topic. The result of the literature review process compiled in this chapter would be an integral part of this thesis. Literature reviews contrasted with a subjective examination of recorded information and systematic examination of all available sources further described and justified.

Literature review enabled research scholar to design methods and to determine objectively whether to accept the results or discard them. There was a clear link between the aims of the research and the literature review, the choice of research designs and means used to collect data, discussion of the issues, conclusions, and recommendations. Literature review was backed by clearly stated research methodology based on existing literature and provided an analytical and critical evaluative stance to the existing literature on the topic.

The overall research literature under this research could be categorized in different categories. Books on public health, health management, policies, and programs could be the first major category. The work done report under National Rural Health Mission of different states and country were maintained by HMIS website portal of Ministry of health and family welfare could be the second major literature or information. The reports of Common Review
Missions or CRMs, reviews by independent authorities and publications of several scholars on National Rural Health Mission could fall in the third category. Finally, the reports of National Family Health Surveys, District Level Family Health Survey, the Sample Registration System or SRS Bulletins and Survey on rural health or RHS could be termed as a fourth major category of literature under the research. Some of such materials cited but some not cited though they definitely helped in creating opinion.

Reading books enable to understand the meaning of health, the sociology of health and health determinants. This was important because without such acquaintance it was not possible to measure and evaluate any public health program.

National Rural Health Mission was having a mechanism to generate reports on the work done and performance of different programs. Such reports provided an extensive gamut of status related to the progress and performance of a particular program. During the research such reports pertaining to national, state and district levels of different years were analyzed to depict logical conclusions.

But solely relying on internal reports of the National Rural Health Mission it was not possible to measure the final outcome of National Rural Health Mission because it would form somehow a weak basis for putting valid arguments in support of the outcome of National Rural Health Mission. Also for this sake the reports of Common review missions also not fully accepted by the research scholar. Therefore further reports related to different other agencies especially World health organization were also examined and compared. Further, the study and evaluation based on reports of the National family health survey reports, Sample registration system reports, rural health survey reports provided some more justifiable and logical inferences on outcome of National Rural Health Mission and thus research scholar adopted those sources or literatures.

However, very few of the studies had considered that National Rural Health Mission failed in several disciplines and its implementation was not adequate. Some had reported about the malpractices on a large scale in some states as more and more cases of corruption reported from states like Jharkhand, Bihar and Uttar Pradesh. Research scholar had also come across several such literatures which had doubted the future of personnel employed under the National Rural Health Mission. Some reports had specifically mentioned about the drawbacks of various aspects related to National Rural Health Mission such as contractual appointments, low salary, and engagement as voluntary basis, lack of work culture and cadre conflicts (Ganguly 2011). In addition, some
studies had pinpointed about vested interests in the health sector and so much so that they declared the overall health sector reforms being implemented under some international pressure therefore international guidelines followed and framework had promoted foreign vested interests as the supply of equipments, drugs and know how were too expensive. However it was required developing cheap medicines, vaccines and logistics within the country. Although research scholar considered all such literatures and never termed them incorrect or biased despite most of them were not according to academic traditions and also not adequately substantiated with means of some evidences and correct hypothesis.

Some scholars had opinioned that National Rural Health Mission was successful in the initial stages and then its progress became stagnant and not progressed adequately on several core issues. Those negative issues, studies and reporting also not put aside and considered in this study without finding them irrelevant (R. Tyagi 2011).

Thus the literatures review under the research could describe as hereafter in alphabetic orders:-

6.1 “Action Points and Time line of activities prescribed under NRHM” by Ministry of health and family welfare, Government of India: This document provided information about various action points and the timeline prescribed to accomplish those action points and this was a major source of information for various aspects of overall execution of NRHM (MOHFW 2005).

6.2 “A paradigm shift in HR policy under NRHM”: this document provided information about one of the major shifts in public health scenario under NRHM especially in the field of HR, which noticed as hiring and engaging a large number of employees on contract basis. In most cases medical, management, nurses, paramedics, technicians and IT experts were extended limited period of contracts ranging from 2-5 years (Prasad 2009).

6.3 “All States Common Review Mission Reports by the Ministry of health and family welfare, Government of India: A Common Review Mission or CRM was set up as part of the Mission Reviewing Steering Group’s mandate of review and concurrent evaluation of the NRHM on yearly basis. The common review mission had submitted its three reports in the year 2007, 2008, 2009, 2010, and 2011. The all CRMs declared that NRHM was mostly successful in its core strategies (MOHFW. CRMs, Periodical).

Reports of different years take up different issues. Reports also talked of advocacy and prioritization of policies to promote rational drug prescription and
hospital pharmacy-based prescription with free drugs in every public health facility; procurement and supply of Generic drugs at reasonable rates with assured quality for social protection of the poor against the rising costs of health care, especially the rising costs of essential drugs.

CRM report also emphasized on continuation of contract service providers and technical and management support staff into the next plan period to promote long term planning of services.

The Fourth Common Review Mission had found appreciable improvement in Integrated Disease Surveillance Project infrastructure and flow of information through Health Management Information Systems particularly in Orissa and Chhattisgarh as in Punjab and Chandigarh. There had been substantial improvements in the process of accounting- with the addition of staff, with improved leadership arrangements, with the use of customized software and with the electronic transfer of funds up to district level in almost all states.

The CRM teams visiting Maharashtra, Assam and Kerala had reported a number of innovations like evening OPD, scaled up boat clinics from Kerala and Assam as the innovation in palliative care in Kerala. Sustained increase in institutional delivery reflecting the continuing gains of Reproductive and Child Health program; assured referral transport and emergency response system especially in Assam, Tamil Nadu, Uttaranchal; improved availability of essential drugs; increased incidence of Male sterilization in States like Assam, Punjab, Maharashtra are some of the main findings of CRM Report. Nutrition Rehabilitation Centres were found functional in the States of Assam, Madhya Pradesh, Rajasthan, Jharkhand, Maharashtra, Chhattisgarh, and Uttar Pradesh. Most states had reported good coordination between the Auxiliary Nurse Midwife, Aanganwadi Workers, and the Accredited Social Health Activist. In maternal health, there had been considerable progress with almost 76 health facilities with C-section capabilities being functional in the 30 districts visited and a network of PHCs and CHCs providing institutional care for the pregnant women. The facility based care for the sick newborn and child similarly scaled up in the coming year. Other major positive findings included the expansion in nursing education (MOHFW. CRMs, Periodical).

6.4 An integrated approach towards Public Private Partnership (PPP):
This article highlighted several weaknesses in the public health system also put forward notions about the inadequacy of the health coverage and suggested public private partnerships as a method to tackle those shortcomings (CII 2010).
6.5 “Assessment of human resource management practices in Lebanese hospitals” by Fadi El-Jardali, Victoria Tchaghchagian and Diana Jamal: This document provided information and considered sound human resources (HR) management practices were essential for retaining effective professionals in hospitals. Given the recruitment and retention reality of health workers in the twenty-first century, the role of HR managers in hospitals and those who combined the role of HR managers with other responsibilities not underestimated. The objective of this study was to assess the perception of HR managers about the challenges they faced and the current strategies adopted. The study also aimed at assessing enabling factors including the role, education, experience, and HR training (Fadi El-Jardali 2006).

6.6 “Block Granting, Performance Based Incentives and Fiscal Space Issue: the New Generation of HRH Reforms in Rwanda”: This power point presentation delivered at the first forum meeting on human resources for health in Kampala. It reviewed a study of how Rwanda, faced with constrained fiscal conditions, had implemented innovative reforms to create fiscal space for human resources and to make these resources more responsive to needs through an analysis of budget documents and policy and regulatory changes and key informant interviews. The presentation was considered equally good for India by the research scholar as he cited human resources for the health sector in India weakest. Research scholar saw no harm in implementing those HR practices if there were some funds scarcities (Granting 2006).

6.7 “Qualitative research Methods and Chapter Research questions and hypothesis” by Devi Pawar: This book by the author provided information about the qualitative research methods. By reading this book research scholar get acquited with research atomosphere.

6.8 “Building capacity in human resources management for health sector reform and the organizations and institutions comprising the sector” by Sarah Johnson: This article said about the importance of human resources management for the health sector reforms. It also prescribed tools for assessment of HRD. Research scholar found HRD assessment tool highly suitable and it required assessment of health organizations in India with such tools. The assessment methods used by the author were logical and perusable.

6.9 “Burden of Disease in India”: this article described the burden of diseases in India. It identified 17 diseases /conditions that public policy needed to take note of on priority. The list included both the set of pre transition diseases or diseases of underdevelopment as they disproportionately affected the poor more
and post-transition diseases or diseases of affluence, normally referred to as lifestyle diseases, which believed to affect the rich more. Based on an exhaustive literature review, the experts attempted to provide a baseline of disease prevalence today and causal analysis indicating the various direct and indirect factors that contributed to the persistence of these diseases. Surprisingly, we found it difficult to provide even current-level estimates for diseases/conditions that implemented with substantial donor funding under the National Health Programs. We, therefore, could not come up with any estimates for malaria or other vector borne diseases, reproductive health, several childhood diseases such as respiratory infections, etc. Even for tuberculosis (TB), arriving at any projections for 2015 under the emerging scenario of the rising HIV/AIDS epidemic was impossible. For those reasons, it was difficult to come up with any specific targets achieved within a limited period (NCMH 2005).

6.10 “Building Capacity in Human Resources Management for Health Sector Reform and the Organizations and Institutions Comprising the Sector”: This technical brief was focused on the relationship between human resource management and health sector reform in Latin America and Caribbean countries.

6.11 “Case study as a research method” by Yin and Soy: This article had defined the case study research method as an empirical inquiry that investigated a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context were not evident; and in which multiple sources of evidence used.

6.12 “Census of India reports 2001 & 2011” by the Census office of Government of India: By comparing data of two census reports especially for the 2001 and 2011 several results verified under the research. Changes in decade growth rates, sex ratios percent of population in reproductive age it’s confirmed. It noted here that it was highly fortunate to have the census report for the year 2011 also which became available at a later stage of the research especially towards the end of the research and its availability was extremely important for this research (Census of India 2001 & 2011).

6.13 Community medicine in India: The author of this book which published by Jaypee publications, New Delhi had said that NRHM appeared to be a well-designed program with all components of a successful community based program, where the existing health system utilized with community
involvement and participation, supported by a community volunteer (Lahariya 2007).

6.14 **Comparative Analysis of the Changes in Nursing Practice Related to Health Sector Reform in Five Countries of the Americas**: This study provided initial information about current nursing issues that had arisen because of health care reform initiatives. Regardless of differences in service models or phases of health sector reform implementation, in all the countries the participating nurses had identified many common themes, trends, and changes in nursing practice. The driving forces for change and their intensity had been different in the five countries. It emphasized on implementing country specific plans for management of health work force.

6.15 **Concurrent Evaluation of percent JSY-II**: This document was related to the findings of concurrent evaluations of JSY in eight districts of Rajasthan. Concurrent evaluation started under the National Rural Health Mission proved beneficial where it executed (MOHFW 2009).

6.16 **Constitution of Empowered Action Group** by Government of India: This document provided information about how the EAG constituted and how some backward states of the country were identified and how it had recommended some special arrangements for backward states of the country? (MOHFW 2003)

6.17 **Creating Project-Based Organizations to Deliver Value** by Michel Thiry: Project-Based Organizations or PBOs were fast emerging as a serious trend, but many organizations still did not understood how to structure themselves effectively create a strategic advantage from projects. PBOs needed to be structured to create synergy between strategy, project, program and portfolio management and the project approach needs to both generate tangible value for the stakeholders and be sustainable. PBOs referred to a variety of organizational forms that involved the creation of temporary systems for the performance of project tasks or activities. They included matrix organizations, projected organizations and other forms of organizations that privilege a project approach for conducting their activities. PBOs were receiving increased consideration as an emerging organizational form, but many researchers reported that there was very little knowledge on how project-based organizations actually operate in practice. There were also very few references on how the extensive use of unique and temporary endeavors like projects and programs can influence the strategy and the design of organizations. As the application of project management was spreading in organizations, one needed
to understand the different project-based organizational models that could accommodate various situations and address the issues of compartmentalization, typical of traditionally structured organizations, versus integration, typical of networked organizations, as they structured their project-based organizations (Thiry, M. 2008).

6.18 “Data” by Schostak, John: This article defined a data for a research. This article also defined the term data under a research and made research scholar able to understanding the meaning of varied data (Schostak, J 2005).

6.19 “Decentralization and Health System Reform”: This document offered some help in addressing decentralization for health sector actors interested in designing decentralization policies and strategies, implementing them, and/or operating within decentralized health systems.

6.20 "Defining health” by Meenakshi: This document provided several definitions of health and relevant issues (Meenakshi 2003).

6.21 Delivering Micro Health Insurance through the National Rural Health Mission: This article had thought about the stimulation of the health insurance. The success of NRHM as well as micro insurance development was interrelated. This was especially true of health micro insurance for which few were truly successful.

6.22 “Delivery of rural health care services” by T. V. Sekher: This article explained the delivery of rural healthcare services in India though the networks of the health department had spread to almost every village, the availability and utilization of the services continued to be very poor and grossly inadequate. In this situation, could the Panchayati Raj institutions or PRIs make a difference in the delivery of rural health care services The philosophy behind bringing the line departments, including health, responsible for providing essential services, under the supervision of local elected bodies was to achieve an overall improvement in the delivery of services at the grass roots level. This facilitated through the interventions of PRIs by making health services responsive to local needs, more accountable to the local population, focusing on local problems, prioritizing the requirements, generating public demand for the services and efficient use of available resources.

6.23 “Directory of innovations in public health sector of India” by the Ministry of health and family welfare, Government of India in cooperation with DFID, United Kingdom: This document listed the innovations performed in different states of the country under the aegis of NRHM/RCH-II. The term
innovations had been used in a flexible manner and covered new approaches as well as testing out known approaches in different contexts. The majority of the 227 innovations listed in this report were those that supported through central funds. Innovations that piloted by non-governmental organizations (NGOs), Development Partners (DPs) and State Governments had also been included. Some innovations spanned several states, while many were state-specific. The innovations were all being piloted in the context of substantial investments from national and state levels on improving the health infrastructure, strengthening health systems, promoting social mobilization and community participation, enabling decentralized health planning and implementation, incentivizing performance and quality to retain and attract human resources and strengthening program management and monitoring. The innovations categorized into themes that roughly followed those laid out in the National Program Implementation Plan of RCH II and in the Implementation Framework of the NRHM. Nine major themes along with sub-categories for three themes identified that span the major thematic areas of RCH II/NRHM (DFID 2009).

6.24 District level household surveys (DLHS): District level household surveys (DLHS) were an extremely important source of secondary data under this research. It was a household survey on the district level and in DLHS-3; the survey covered 611 districts in India. The DLHS-3 provided information on family planning, maternal and child health, reproductive health of ever-married women and adolescent girls, utilization of maternal and child health care services at the district level for India. In addition, DLHS-3 also provided information on newborn care, post-natal care within 48 hours, role of ASHA in enhancing the reproductive and child health care and coverage of Janani Suraksha Yojna (JSY). An important component of DLHS-3 was the integration of Facility Survey of health institution (Sub Centre, Primary Health Centre, Community Health Centre and District Hospital) access to the sampled villages. The focus of DLHS-3 was also to provide health care and utilization indicators at the district level for the enhancement of the activities under the National Rural Health Mission (DLHS 2011).

6.25 District program management unit, Delhi government, and recruitments of personnel under NRHM (On Contract basis) by the IDHS (NW): This document provided information about the vacancy advertisement of Delhi government health society seeking applications for various positions. It provides information on qualifications essential for different categories of employees under NRHM, salary offered and job terms (Delhi 2009).
6.26 “Economic Survey 2008-09: Lack of doctors, shoddy infrastructure hampering health sector”: According to this article there was acute shortage of trained medical personnel and adequate health Centre were hindering a steady improvement of India’s health sector. According to the Economic Survey 2008-09, India was short by 28,000 healths Centre, which included 20,855 Sub-Centre, 4,833 primary healths Centre (PHC) and 2,525 Community Health Centre (CHC). Almost 34 percent of the existing health infrastructure was in rented buildings. Poor upkeep and maintenance and high absenteeism of workforce in rural areas were the main problems in the health delivery system in the public sector, the Survey said. While there are 1.5 million nurses in the country, doctors in the modern system of medicine number just 84,852. The survey highlighted the achievements of the National Rural Health Mission (NRHM). It said 6.49 health workers had been selected up to December 2008 to work under NRHM of which 0.563 million had already been given orientation training. Around 0.412 million of these workers already had drug kits with them. Around 9,073 doctors, 1,875 specialists and 20,977 staff nurses appointed on contract in the states. Around 243 Mobile Medical Units were operating in the states. Over 15.992 million women brought under the Janani Suraksha Yojna for institutional deliveries in the last three years. The Survey said NRHM aims to make PHCs function round the clock. Of the 22,370 PHCs in the country, only 1,263 were working round the clock on March 31, 2005 (before the NRHM). The number of round the clock PHCs today, as reported by the states, was 7,212, signifying a big leap forward in getting patients to the government system. Indian Public Health (IPH) standards had been finalized and a first grant of `2 million had been provided to all district hospitals in the country to improve their basic services, the Survey said. The Survey also highlighted the achievements in AIDS control. It said the health ministry was providing life saving anti-retro viral treatment (ART) to more than 217,000 HIV patients. As per the Survey, in the National AIDS Control Program, major achievements during 2008-09 included scaling up targeted interventions for high risk groups to 1,271, counseling and HIV testing 10.1 million persons of which 4.15 million were pregnant women (G. o. India 2009).

6.27 “Eight percent households become poor due to medical expenses”: According to this news clipping about eight percent of households in India were pushed to below the poverty line due to heavy medical expenses, said a new report on the Indian health sector. According to the report, about 7-8 per cent of households pushed below the poverty line because of expenses incurred for health care. The report also said Indian government needed to shift focus away from food grains, towards the intake of a variety of food in correct proportion,
as there was an urgent need ameliorate the nourishment among children. The report stated that the focus required to adequately empowering the institutions that govern India’s healthcare sector and making them answer for health outcomes. It had recommended that the ministry of health and family welfare needed strengthening in terms of both scale and scope and it needed made more answerable for India’s poor health outcomes (Times 2009).

6.28 “Evolving terms of human resources management and development” by A. Haslinda: This article said that the term HRM and HRD had been used by scholars, academics and practitioners differently. However, confusion created on the terms or labels for HRM, HRD, and its position in a management function. The purpose of this paper was to examine the evolving terms in human resource management (HRM) and human resource development (HRD). Based on a review of the literature, this paper draws the concepts surrounding the terms in human resource management and development. The findings highlighted that the terms HRM and HRD had evolved along with globalization and rapid technological advances. Due to these changes in the environment, new terms were seen to be necessary to describe new ideas, concepts and philosophies of HRM and HRD. Currently, and in the near future, new terms would emerge to describe the philosophy of HRM and HRD (Haslinda 2009).

6.29 “Experience of the Latin America and Caribbean Observatory of Human Resource for Health”; document reviewed the observatory of human resources in health in the health sector reform processes in Latin America and Caribbean. It was a cooperative initiative among the countries of the Americas aimed at producing information and knowledge in order to improve human resource policy decisions as well as contributing to human resources development within the health sector based on sharing experiences.

6.30 Four years of NRHM (2005-2009): Making a Difference Everywhere, Ministry of Health and Family Welfare, May 2009: This document indicated and summarized the early gains of NRHM. According to its External assessments confirmed the gains that the Mission had made. The Maternal Mortality Ratio had reduced from 301 per 100,000 births in 2001-03 periods of 254 in the 2004-06 periods. IMR was down to 55 per 1000 births as per the data for 2007. Institutional deliveries had also reported major gains in the District level Household Survey-III carried out in 2007-08. The Mission had done four years and the gains made in many of the States of the country are nothing short of dramatic. What is even more interesting was the fact that hitherto States with unsatisfactory Health indicators had moved swiftly to improve their health system. Poor people had voted with their feet for public system of health care
wherever doctors, drugs and diagnostics are available at these facilities. Untied
funds had completely changed the look of public facilities from ‘dilapidated
hovels’ into well maintained facilities providing service guarantees. Over the
last four years, over 9,000 doctors, 60,000 nurses/ANMs, and over 690,000
Community Health Workers (ASHAs) (One in each village) added to the
system. By intensive demand side financing for institutional deliveries, the
NRHM had put unprecedented pressure on public systems to deliver quality
services. Nearly 20 million women had availed of this facility over the last four
years, substantially increasing the rate of institutional deliveries in hitherto
backward provinces with high maternal and infant mortality. Through a network
of ambulances and emergency transport arrangements in many provinces,
households linked to health facilities more effectively (MOHFW 2009).

6.31 “Framework for developing health insurance programs, some
suggestions for states”: This document was unfolded by the Ministry of Health
& Family Welfare Government of India, New Delhi through which a framework
of providing health insurance has been prescribed (MOHFW 2008).

6.32 “Guidelines on rogi kalyan samiti” by the Ministry of health and
family welfare, Government of India: This document provided information on
the constitution, working and memberships of different rogi kalyan samists or
hospital management societies to be constituted at different levels. On the basis
of this document rogi kalyan Semites were constituted in the country (MOHFW
2006).

6.33 “Guidelines on Janani Suraksha Yojna” by the Ministry of health and
family welfare, Government of India: This document contained information
and guidelines about the one of the major scheme of NRHM namely Janani
Suraksha Yojna which aimed at promoting safe and institutional delivery in the
country. It established the basis of how financial incentives would be provided
to pregnant women. Time to time certain modifications were also done in the
scheme which became essential in order to accommodate certain specific
requirements of different states (MOHFW 2005).

6.34 “Guidelines for the preparation of health action plans” by the
Ministry of health and family welfare, Government of India: This was major
document which suggested mechanism and formats for preparation of health
action plan at the district and state levels. It was almost mandatory for each
district and state level societies to prepare and submit an advance health action
plan for their respective districts and states for each financial year. This formed
the basis of funds sanction and release (MOHFW 2006).
6.35 “Guidelines on accredited social health activists” by the Ministry of health and family welfare, Government of India: This document provided details about the scheme which was launched in the country for appointments of ASHAs in the country. The guidelines on provision related to Accredited Social Health Activists also known as ASHA in the country were prescribed with their selection, training and work (MOHFW 2006).

6.36 “Health insurance in India” by K. Sujatha Rao, Secretary of National Commission on Macroeconomics and health, Govt. Of India, This article said about public and private health insurance players in India some insurance enactments and provisions of some insurance schemes such as employee state insurance Act, Central Government Health Scheme (CGHS), Universal Health Insurance Scheme (UHIS), and Community-Based Health Insurance.

6.27 “Health related PPP in India” by R. Shankar: This article provided information about health related public private partnerships in the country which enabled research scholar to know about public private partnerships.

6.38 “Health Sector Reform and Deployment, Training and Motivation of Human Resources towards Equity in Health Care: Issues and Concerns in Ghana”; This document stated about Ghana underwent a health sector reform process aimed achieving greater access to services, improved efficiencies in resource utilization, development of wider linkages with communities and partners, as well as improved quality of health services. These reforms had strong influences on issues of human resources development, deployment, and motivation.

6.39 “Health Sector Reform: Initiatives under NRHM” by Dr K Roy Barman, Senior Consultant, National Health Systems Resource Centre, Delhi: This document provided information about Basic Concepts, philosophy & Definition of HSR in Indian context.

6.40 “Health sector reform initiatives in India” by Ministry of health and family welfare, Government of India: This document recognized the need for evidence based information about and assessment of the various initiatives undertaken as part of the health reform process in India. The Ministry of Health & Family Welfare, Government of India, in collaboration with the WHO Country Office, India had undertaken a review and documentation of health sector reform initiatives in India. One of such document which documented by the World Health Organization declared that in India, since the early 1990s considerable work had been undertaken related to health sector reforms, which
had involved various governments, international, multilateral agencies and other
stakeholders.

6.42 “Health statistics of countries 2005 and 2010” by the World health
organization: This document provided information on varied health indicator
of different countries. Both statistics for the year 2005 and 2010 were
considered under this research. The document was a major source of
information about the existing public health status of India prior to launch of
NRHM.

6.43 “Health Worker Benefits in a Period of Broad Civil Service Reform:
The Philippine Experience”: According to this document developing countries
that had to cope with pressures to reform their bureaucracies had to contend
with increasing health worker benefits and salaries that were often intended to
retain these health workers in government service. In the Philippines, national
and local efforts in health forced to focus on guaranteeing some of these
benefits, and local governments were feeling the financial limitations of their
local funds.

6.44 “Health Worker Motivation and Health Sector Reform”: According to
this document, it was becoming increasing important that policymakers be
aware of health worker motivation and its impact on health sector performance.
Health care delivery was highly labor-intensive, and service quality, efficiency,
and equity all directly mediated by workers’ willingness to apply themselves to
their tasks. While resource availability and worker competencies are essential,
decision makers should know that they were not sufficient in themselves to
ensure desired worker performance. Worker performance is also dependent on
workers’ level of motivation stimulating them to come to work regularly, work
diligently, and be flexible and willing to carry out the necessary tasks.

6.45 “Health Workforce”: This issue focused on the health workforce and
contained the articles: Could health worker migration bring benefits to Malawi?;
Removal of childbirth delivery fees: the impact on health workers in Ghana;
Regulation of dual job-holding public sector doctors in Peru; Health worker
responses to health sector reforms; and Motivating Tanzanian primary health
care workers.

6.46 “Health Worker Shortages and Inequalities: The Reform of United
States Policy” by Paula O’Brien and Lawrence O. Gostin: This paper said
that the United States and other rich countries had done very little to address the
dire global shortage of health workers. In some instances, the conduct of the
world’s richest countries had exacerbated the shortages experienced in poor countries. They advocated that the Obama administration adopt two principal strategies to assist with solving the global health workforce crisis. The first strategy required that a significant part of the U.S.’s development assistance for health be shifted towards building health systems in partner countries, in particular training and employing health workers to deal holistically with the most pressing health problems experienced by the poor. Secondly, the U.S. should pursue a high level of national self-sufficiency in its health workforce and not continue its heavy reliance on recruitment of migrant health workers to fulfill the demand for health workers in the U.S.

6.47 “Health Worker Shortages and Inequalities: the Reform of United States Policy”: This paper advocates multiple strategies for the United States to further assist with solving the global health workforce crisis.

6.48 “History of Indian medicine” by Mittal, Shivdutt: This book defined the history of Indian medicine and public health system. How the public health in India travelled from the earliest version of the modern form was described in this book.

6.49 "History of medicine in India” by R. N. Sharma: This book defined the history of medicine in India. How with spent of time new methods established in India and how older methods become irrelevant were described in great detail with precise accuracy and authenticity?

6.50 “HR and new approaches to public sector management: improving HRM capacity” by Dr Stephen Bach: This paper examined why building HR capacity is important to effective health care reform, assesses the existing evidence on HR capability in the health sector, and draws out lessons from existing practice. Developing HR capability requires investing in the training and development of both HR specialists and line managers/professionals with staff management responsibilities. It was vital that any investment in specialist HR capacity evaluated the different ways to deliver the HR function. To be effective the HR function must develop both an operational and a strategic HR capacity.

6.51 “Human Resource Management and Public Sector Reforms: Trends and Origins of a New Approach”: This paper presented as a contribution to a new approach to human resource management that will take account of developments in public sector reform in the nineteen eighties and 1990s. The intent was to show that those reforms, especially in their opening stages,
underemphasized the importance of human resource management for two essential reasons. First, because of the reformers’ strong emphasis on the need to reduce the size of the government apparatus, and second because they made war on bureaucracy one of the principal objectives of the new style of public administration they advocated. Hence, their approach to human resource management was essentially a negative one and paid no attention to the legal framework that was essential to it, or to its political complexity.

6.52 “Human Resources for Health Challenges of Public Health System Reform in Georgia”: The aim of this study was to assess the adequacy of HR of local public health agencies to meet the needs emerging from health care reforms in Georgia.

6.53 “Human Resources for Health in India’s National Rural Health Mission: Dimension and Challenges” by S K Satpathy and S Venkatesh: This article examined the HR for health in India. It concluded its findings by saying “The task of ensuring the availability of MBBS doctors and specialists and to build capacity for rural health care in India was huge, but doable. The challenges include shortages, imbalances, and low productivity, compounded by insufficient investment, inadequate pre-service training, migration, work overload, freeze in salaries, and work environment issues (infrastructure, technical safety, and community support). The overall shortages are aggravated by skewed distribution within the country, and even within the states, and movement of health personnel from rural to urban areas, from public sector to the private sector, or to jobs outside the health sector or overseas. The gaps within the existing infrastructure and the services both within and outside the public sector need to address. However, just having the requisite numbers of health personnel is not enough.

6.54 “Human Resources for Health in India’s National Rural Health Mission: Dimension and Challenges” by S K Satpathy and S Venkatesh: This paper said that the task of ensuring the availability of MBBS doctors and specialists and to build capacity for rural health care in India is huge, but doable. The challenges included shortages, imbalances, and low productivity, compounded by insufficient investment, inadequate pre-service training, migration, work overload, freeze in salaries, and work environment issues (infrastructure, technical safety, and community support). The overall shortages were aggravated by skewed distribution within the country, and even within the states, and movement of health personnel from rural to urban areas, from public sector to the private sector, or to jobs outside the health sector or overseas. The gaps within the existing infrastructure and the services both within and outside
the public sector needed to address. However, just having the requisite numbers of health personnel was not enough.

6.55 “Human resources for public health service” by R. Kumar: This article said that Human societies around the world were striving hard to improve the quality of life of their people. The United Nations had given expression to this aspiration by setting up a number of Millennium Development Goals covering the economic, social, and health dimensions. It's now well recognized that health development was one of the important prerequisites to realize basic human rights. Therefore, public policies that improve population health should receive due priority. Systematic efforts were required not only for assessment of the health needs of communities and populations but also to plan, organize, and monitor health services so that these needs met. To view of the scarce resources, most cost-effective and sustainable strategies needed to be put in place. Therefore, there was a need to evolve and implement a human resource policy to strengthen public health service in India.

6.56 “Human Resource Management in Project-Based Organizations - Challenges, Changes, and Capabilities” by Karin Bredin: This doctoral thesis addressed human resource management in project-based organizations. The aim was to explore the challenges for HRM in project-based organizations and the changes in people management systems to meet these challenges. The thesis consisted of a compilation of six papers and an extended summary. The research reported in the thesis was based on a combination of multiple-, comparative, and single-case studies of project-based organizations. The core case studies conducted at Saab Aero systems, AstraZeneca, Volvo Car Corporation, and Tetra Pak. The results indicated central challenges regarding competence development and career structures, performance-review processes and reputation of project workers, and the increased responsibility and pressured work environment for project workers. They further indicated that many of those challenges were handled through a more HR-oriented line manager role, while HR departments were downsized and centralized. The thesis hence emphasized the need to understand HRM as an area of management in which various players share the responsibility for its design and performance. To conclude, the thesis applied a capabilities perspective on project-based organizations and developments a conceptual framework that embraces person's capability: the organizational capability to manage the relationship between people and their organizational context. In this framework, people management systems improved people capability when they integrated it with strategic, functional, and project capabilities. It suggested that the people capability framework provided new
possibilities to analyze HRM in project-based organizations and to explain the changes in people management systems that needed to align them to the project-based context.

6.57 “Human resources for public health in India – Issues and challenges” by Deoki Nandan, K.S. Nair and U. Datta: This article said about the availability of adequate number of human resources with suitable skill mix and their appropriate deployment at different levels of health care set-up were essential for providing effective health care services for the population. Since independence, concerted efforts had made to address the need for human resources for health in India. However, the shortage existed in all categories of human resources at different levels. Ensuring the availability of human resources for health in rural areas and building their capacity in public health was daunting tasks. Future challenges include planning for human resource for public health at State/national level, framing of State specific human resource development and training policy, creation of a human resource management information system, reorientation of medical and Para-medical education and ensuring proper utilization of the trained work force and standardization of training. It was also important to link human resource development and training policy to the National Rural Health Mission in achieving its goals.

6.58 “Human resources management- Issues and Challenges” by Dileep V. Mavalankar: This paper reviewed the status of human resource systems in primary health care before the ICPD, the problems faced, the policy changes in the family planning program following ICPD and efforts made to reorient staff to the policy and programmatic changes. As the process has just begun in India, there was a long way to go. Therefore, the paper also discussed key challenges for the future in this great effort to reorient the Indian family planning program.

6.59 “Human Resources: the Cinderella of Health Sector Reform in Latin America”- this article discussed reasons that led health workers to oppose reform. The institutional and legal constraints to implementing reform as originally designed, the mismatch between the types of personnel needed for reform and the availability of professionals; the deficiencies of the reform implementation process; and the regulatory weaknesses of the region. The discussion presented workforce strategies that the reforms could had included to achieve the intended goals, and the need to take into accounts the values and political realities of the countries.

6.60 “Impact of Health Sector Reform on Public Sector Health Worker Motivation in Zimbabwe”: This paper described the specific policy measures
that the Zimbabwean government had recently implemented to try to improve health sector performance, and promote higher levels of motivation amongst public sector health care workers. The overall reform package was to include financial reforms (user fees and social insurance), strengthening of health management, liberalization and regulation of the private health sector, decentralization, and contracting out. Unfortunately, the process of reform implementation in Zimbabwe and the government’s poor communication with workers, combined with a conflict between local cultures and the measures being implemented, has undermined the potentially positive effect of reforms on health worker motivation.

6.61 “Implications of Health Sector Reform for Human Resources Development”: The authors of this paper argued that health for all was not achievable in most countries without health sector reform that incorporated a process of coordinated health and human resources development. They examined the situation in countries in the Eastern Mediterranean Region of the World Health Organization.

6.62 “India has shortage of six lakh doctors”: Union Minister of State for Health in India Dinesh Trivedi said currently there was a shortage of 0.6 million doctors and 1 million nurses and he also said that eighty percent of medical expenditure in India is spent on twenty percent of people. Trivedi further said that the quality of medical services varies with the income of a person, asserting that this trend eliminated by giving equal and fair treatment to people coming from different financial backgrounds. “We require a different model, which is not 3P’s but 4P’s. In addition, the fourth P is people. Therefore, what we are talking about is private, public, and people partnership. That is what we require. As per the 2001 figures, there is a shortage of about 600,000 doctors, one million nurses, and paramedical staff.

6.63 “Indian system of medicine” by Akhtar, Jameel: This book had mentioned about the Indian system of medicine and how it synchronized with other system of medicines in order to evolve a new system what could be termed as an Indian System of medicine which some time also refereed to as AYUSH or Ayurveda, Yoga, Unani, Sidha and Homoeopathy.

6.64 “Indian Public health draft format on health sub centre” by the Ministry of health and family welfare, Government of India: This was major guidelines for setting up new and upgradation of old HSCs in the country. It provided a population norms and fixed standardized minimum services to be
extended by each health facility in the country. It also highlighted about mandatory services required to be enabled at that particular facility.

6.65 “Indian Public health draft format on primary health centre” by the Ministry of health and family welfare, Government of India: This document was a guideline for setting up new and upgradation of old Primary health centres and services to be absorbed at each Primary health centre. It also highlighted about mandatory services required to be enabled at that particular facility.

6.66 “Indian Public health draft format on community health centre” by the Ministry of health and family welfare, Government of India: This provided norms for on setting up new and upgradation of old sub District Hospitals (CHCs/FRUs) and services to be ensured at each CHCs/FRUs.

6.67 “Indian Public health draft format on district hospital” by the Ministry of health and family welfare, Government of India: This provided norms for on setting up new and upgradation of old District Hospitals (DHs) and services to be ensured at each District Hospital.

6.68 “India’s Public Health System- How Well Does It Function at the National Level?” by Monica Das Gupta and Manju Rani: This article said that India had relatively poor health outcomes, despite having a well-developed administrative system, good technical skills in many fields, and an extensive network of public health institutions for research, training, and diagnostics. This suggested that the health system may be misdirecting its efforts, or poorly designed. To explore this, they used instruments developed to assess the performance of public health systems in the United States and Latin America based on the framework of the Essential Public Health Functions identified as the basic functions that an effective public health system must fulfill. This paper focused on the federal level in India, using data obtained from senior health officials in the central government. The data indicated that the reported strengths of the system lie in having the capacity to carry out most of the public health functions. Its reported weaknesses lie in three broad areas. First, it has overlooked some fundamental public health functions such as public health regulations and their enforcement. Second, deep management flaws hinder effective use of resources, including an inadequate focus on evaluation; on assessing the quality of services; on dissemination and use of information; and openness to learning and innovation. Resources also much better utilized with small changes, such as the use of incentives and challenge funds, and greater flexibility to reassign resources as priorities and needs change. Third, the central government functions too much in isolation and needs to work much more
closely with other key actors, especially with sub-national governments, as well as with the private sector and with communities. Paper concluded that with some re-assessment of priorities and better management practices, health outcomes substantially improved.

6.69 **India to meet its health care shortages, will had to invest US$ 20 billion in the health sector, according to Marilyn Newhoff, Dean, College of Health and Human Services, San Diego State University, and San Diego, USA:**

This article said that “Shortages of men and women in healthcare are not an unusual occurrence. In order to meet the shortages and offer world standard medical care, India ought to invest the amount over the next few years,” she said at the graduation day of the PSG College of Nursing on Wednesday. “Is India ready for such an investment in health care?” She asked. Forty per cent of the primary health care Centres were understaffed, she said quoting a report. “In short, India faces a shortage of doctors, nurses and paramedics. These professionals are needed to propel the growing healthcare industry in India.”

Speaking of democracy, India and the United States, she said that India was the biggest democracy in the world- the most populated. As future leaders of India, the students were the ones on who people like her counted in making a difference to the world. “The future of the world, of India, is today perhaps more than ever, is in your hands. India is bound to be the leader, if you decide it must be.” Ms. Newhoff further said, “Of course, all of you want to graduate, get a good job, and take care of your families. But, you had a much higher calling. You guys, India, can be leading the world economically.” Democracy was the control or break in the world full of tensions - for all kinds of extremism. India, the largest democracy, could play a major role and each Indian could contribute thereto.

6.70 **“Innovations in Rwanda’s Health System: Looking to the Future”:**

This report describes three health system developments introduced by the Rwandan government that are improving these barriers to care

6.71 **“Innovative schemes and program interventions under NRHM” by Government of Madhya Pradesh Department of Public Health & Family Welfare:** this document cited several innovations performed in Madhya Pradesh under the aegis of NRHM.

6.72 **“Interface between Health Sector Reform and Human Resources in Health”:** This work intended to review the evidence on how the individual or collective actions of human resources were shaping reforms, by spotlighting the
reform process, the workforce reactions and the factors determining successful human resources participation.

6.73 “In the initial review of NRHM” by Kiran Sharma: According to this document there was evidence that attention was being paid to activating public sector health facilities by attending to civil works such as maintenance and repair and also making efforts to improve the staff situation. The document also said that adhoc contracts and the recruitment of qualified ISM practitioners against medical officer vacancies were also evident in some situations. A significant observation was that almost every facility visited reported a quantum increase in availability of medicines and other consumables and supplies. Not only the supply enhanced, but also the general impression was that the chain for replenishment and addition to the surplus was in place and generally functioning well. In the states of M.P and Bihar, whichever health facilities (ranging from the DHs all the way down to the HSCs) the teams visited; on inquiring, they informed that there was an increase in the number of patients during the current year. In states like Orissa, Himachal Pradesh and Assam, there was not only no increase in the patient load, but some facilities was showing a decrease in the attendance. This increase in attendance was an important development and pointed not only the fact that more persons were getting medical care, but also that the community had an increased acceptance of the public sector health care facility in Bihar and MP. Health sector reform in the country was crucial and NRHM was able to bring much needed health reforms in the country.

6.74 “Inter-Country Comparison of Unofficial Payments: Results of a Health Sector Social Audit in the Baltic States”: This article presented the results of a 2002 social audit of the health sector of three Baltic States. Comparisons were made of perceptions, attitudes, and experience regarding unofficial payments in the health services of Estonia, Latvia, and Lithuania. The findings could serve as a baseline for interventions and compare each country’s approach to health service reform in relation to unofficial payments.

6.75 “Institutional arrangements and merger of societies under NRHM” by Ministry of health and family welfare, Government of India: This document provided information about the institutional arrangements required to set up at different levels and their memberships. The memberships of health societies/missions, rogi kalyan samities provided in those documents. Also draft bye laws and memorandum provided.

6.76 Job satisfaction and motivation of health workers in public and private sectors: cross-sectional analysis from two Indian states: This article
said that there was high variability in the ratings for areas of satisfaction and motivation across the different practice settings, but there were also commonalities. Four groups of factors identified, with those relating to job content and work environment viewed as the most important characteristics of the ideal job, and rated higher than a good income. In both states, public sector health workers rated “good employment benefits” as significantly more important than private sector workers, as well as a “superior who recognizes work”. There were large differences in whether these factors considered present on the job, particularly between public and private sector health workers in Uttar Pradesh, where the public sector fared consistently lower (P < 0.01). The discordance between what motivational factors health workers considered important and their perceptions of the actual presence of these factors were also highest in Uttar Pradesh in the public sector, where all 17 items had a greater discordance for public sector workers than for workers in the private sector.

6.77 “Managing Human Resources for Health in India- a case study of Gujarat & Madhya Pradesh” by Central Bureau of Health Intelligence, Dte. GHS, MOHFW, and GOI In collaboration with World Health Organization- India Country Office: The study was conducted in two states – Madhya Pradesh & Gujarat. Madhya Pradesh selected as a poor performing state and Gujarat as a better performing state based on health human resource indicators. The approach was to study the government records – rules, regulations and policies regarding management of health workforce in the states. The implementation mechanism and actual practices of human resource management studied through an interview and discussion with the entire spectrum of officials and functionaries at state, district and field levels. In each of the state two districts were visited – One with better and the other having poor work force availability.

6.78 “Maximizing Quality of Care through Health Sector Reform: the Role of Quality Assurance Strategies”: This document aimed to facilitate the development of quality-oriented health sector reforms by providing a clear conceptual framework that can serve as a roadmap for policymakers and senior managers. By taking advantage of opportunities to integrate quality assurance activities into health sector reforms, healthcare leaders can maximize the effectiveness of reform and move toward optimizing health outcomes for the citizens of Latin America and the Caribbean.

6.79 “May 2009, External reports” by Ministry of health and family welfare, Government of India: According to this document, the external assessments confirmed the gains that the Mission has made. This document
stated several issues related to health indicators. The Maternal Mortality Ratio reduced from 301 per 100,000 births in 2001-03 periods to 254 in the 2004-06 periods. IMR was down to 55 per 1000 births as per the data for 2007. Institutional deliveries reported major gains in the District level Household Survey-III carried out in 2007-08. The Mission had done four years and the gains made in many of the States of the country were nothing short of dramatic. What is even more interesting was the fact that hitherto States with unsatisfactory Health indicators had moved swiftly to improve their health system. Poor people had voted with their feet for public system of health care wherever doctors, drugs, and diagnostics were available at these facilities. Untied funds had completely changed the look of public facilities from ‘dilapidated hovels’ into well maintained facilities providing service guarantees. Over the last four years, over 9,000 doctors, 60,000 nurses/ANMs, and over 690,000 Community Health Workers (ASHAs) (One in each village) added to the system. By intensive demand side financing for institutional deliveries, the NRHM had put unprecedented pressure on public systems to deliver quality services. Nearly twenty million women had availed of this facility over the last four years, substantially increasing the rate of institutional deliveries in hitherto backward provinces with high maternal and infant mortality. Through a network of ambulances and emergency transport arrangements in many provinces, households linked to health facilities more effectively.

6.80 “Medical tourism in India” by Goenka, Nutan: This document described various aspects of medical tourism in India.

6.81 “MIS or Executive summaries on NRHM” by the Ministry of Family Welfare, Government of India: Those periodical documents were pertaining to different period during the year 2005-2012. The vital information on implementation of NRHM and work done was available in form of MIS reports published year wise. This Ministry of Health & Family Welfare web site – HMIS be accessed easily by typing www.nrhm-mis.nic.in in the internet explorer address bar. This website would be a gateway to a wealth of information regarding the health indicators of the country.

6.82 “Monitoring & Evaluation” by Dr S P Yadav: This power point presentation provided various aspects of monitoring and evaluation mechanism existed and under practice under NRHM. It also provided information about reporting formats and flow of reports.

6.83 Mortality rates matter of concern despite NRHM achievements- Azad: Mortality rates matter of concern despite NRHM achievements- It was asserted
by Mr. Gulam Nabi Azad, the union health minister ... Pointing out to the success of the Government in tackling the spread of health facilities he said that MMR was still high despite achievements.

6.84 **National family health survey (NFHS):** National family health survey (NFHS) reports also used as a secondary source of information under the research. Reports were available state wise and in composite form for all India level. The reports were inclusive of information- data related to Marriage and fertility, Family planning, unmet needs of family planning, maternal and child health, child immunization and vitamin A supplementation, treatment of childhood diseases, child feeding practices, nutritional status, and knowledge of HIV/Aids and Women empowerment. Such data related to two points of times especially at the onset of the NRHM and culmination of NRHM compared in order to indicate the change brought in by the NRHM.

6.85 **“National rural healthcare mission” by Thomas C. Ricketts (2000):** In this article the author said - The rural health care system had changed dramatically over the past decade because of a general transformation of healthcare financing, the introduction of new technologies, and the clustering of health services into systems and networks.

6.86 **“National rural health mission: Turning into reality” by Nandan. D:** This article said about the NRHM being turning into reality. The article published by the editor of the Indian journal of community medicine.

6.87 **“National Rural Health Mission: Success Stories” by Ministry of health and family welfare, Government of India:** This article described about Janani Suraksha Yojna or JSY under the overall umbrella of National Rural Health Mission or NRHM proposed by way of modifying the existing norms.

6.88 **“National training strategy under NRHM” by Ministry of health and family welfare, Government of India:** This document provided information about the training strategy for service providers at district and below. This document was useful for state and central officials and policy makers understand the training for effective integrated Health, Family Welfare, and AYUSH service delivery at below the district level.

6.89 **NRHM Arunachal Pradesh (Intersectoral Convergence) 24 Sep 2007:** This article said that intersectoral convergence was critical to the success of the National Rural Health mission. National Rural Health Mission supposed as a major program implemented by the central government.
6.90 “NRHM Framework of Implementation 2005-12” by the Ministry of health and family welfare, Government of India: This was a 215 page document on NRHM which was released at the onset of NRHM in the year 2005 by the Ministry of health and family welfare or MOHFW, Government of India. It contained detailed information on each subject of different issues related to implementation of NRHM. It suggested action points and prescribed a timeline to accomplish those action points. It described the goals, stages and expected outcome of the mission. It prioritized critical areas of concern under NRHM. It provided guidelines on the institutional set up their memberships and merger of societies which was an important action point. Provisions for human resources, financial and data management, review and evaluation mechanism were also spelled out in details. Formats for byelaws and memorandum of healthy societies, rogi kalyan samitis, facility survey were also provided.

6.91 “NRHM Mission Documents” by the Ministry of health and family welfare, Government of India: This was one of the most vital documents on NRHM which provided information on NRHM objectives, strategies, rationale, targets and mode of implementation. The document stated that the National Rural Health Mission launched by the honorable Prime Minister on 12 April 2005, to provide accessible, affordable and accountable quality health care to the poorest households in the remotest rural regions. The difficult areas with unsatisfactory health indicators were classified as special focus States to ensure greater attention where needed. The thrust of the Mission was on establishing a fully functional, community owned, decentralized health delivery system with inter sectoral convergence at all levels, to ensure simultaneous action on a wide range of determinants of health like water, sanitation, education, nutrition, social and gender equality. Institutional integration within the fragmented health sector expected to provide a focus on outcomes, measured against Indian Public Health Standards for all health facilities. From narrowly defined schemes, the NRHM was shifting the focus to a functional health system at all levels, from the village to the district.

6.92 “NRHM news letter 2010” by Ministry of health and family welfare, Government of India: It reported that Assam, Rajasthan and Tamil Nadu had bagged the award for the best performing states as the National Rural Health Mission celebrated five years of its implementation. A mid-term review panel acknowledging its encompassing role, stressed that it should make greater efforts to provide quality health care to all.

6.93 “NRHM Progress so far 2007, Early gains of NRHM” by Ministry of health and family welfare, Government of India: It was reported that the
NRHM was not even 2 years old and already there were some very significant gains in the health sector, in partnership with States (MOHFW, two years of NRHM 2007). It was evident from the report that a lot achieved in the first two years in partnership with the States. Health was a sector that required simultaneous action on many fronts. The institutional platform of Village Health and Sanitation Committees, the Rogi Kalyan Samiti and the Punchayati Raj Institution committees at various levels was providing a rare opportunity for convergent action on all determinants of health. An army of locally resident Accredited Social health Activists with strong referral links with the strengthened health system would put even greater pressure on the public sector health system to deliver quality services. Along with needing based and transparent partnerships with nongovernmental providers for public health goals, the strengthened system would have positive consequences for all interventions, whether they were for family welfare, disease surveillance, National Health Programs, etc. The innovative engagement of human resource as per need and the arrangements for incentives at each level would help craft a new and innovative system of public health delivery. The experience of the first two years provided the confidence that NRHM was on the right track and that it needed to deepen institutional reforms and effective decentralization through a concerted effort at capacity building.

6.94 NRHM – T: This article said that ultimately, the success of NRHM will depend on the ability of the mission interventions to galvanize state Governments into the framework.

6.96 One of the key strategies under the National Rural Health Mission ... This article said that the success of NRHM to a great extent depended on the performance of ASHA and her linkage with the functional health system. The health system has to give due priority to the ASHA program which required to be regulated properly in future.

7.97 “Policy Research Working Paper 3447 of World Bank” by Das Gupta, Monica, and Manju Rani, 2005: This document tells “How well does India’s federal government perform its essential public health functions?

6.98 "Population and health policies of India” by Kumari, Shradha: This article presented an overview of population and health policies in India since independence.

6.99 “Practice of Physicians and Nurses in the Brazilian Family Health Program: Evidences of Change in the Delivery Health Care Model”: The
article analyzed the practice of physicians and nurses working on the Family Health Program. A questionnaire used to assess the evidences of assimilation of the new values and core principles proposed by the program. The results showed that a great number of professionals seem to had incorporated the practice of home visits, health education actions and planning of the teams’ work agenda of their routine labor activities.

6.100 “Projections of Global Mortality and Burden of Disease from 2002 to 2030: Evidence and Information for Policy Cluster, World Health Organization, Geneva, Switzerland” by Colin D. Mathers, Dejan Loncar: This article was published by Murray and Lopez in 1996 as part of the Global Burden of Disease project. These projections, which based on 1990 data, continue to be widely quoted, although they are substantially outdated; in particular, they substantially underestimated the spread of HIV/AIDS. To address the widespread demand for information on likely future trends in global health, and thereby to support international health policy and priority setting, we had prepared new projections of mortality and burden of disease for 2030 starting from World Health Organization estimates of mortality and burden of disease in 2002. This paper describes the methods, assumptions, input data, and results.

6.101 Professor Jeffrey Sachs, Director, Earth Institute, University of Columbia: He informed that they had in fact decided to develop five model districts, one each in Assam, Uttar Pradesh, Andhra Pradesh, Bihar, and Rajasthan to see the effects of concentrated efforts with higher budget allocations and flexible management systems.

6.1027 “Public Health in India: An Overview” by Gupta, Monica Das: This document provided an overview and information about public health in India, also it defined medical services and public health system.

6.103 “Public health workforce in India: career pathways for public health personnel” by K. K. Datta: This document prepared as a background paper for the National Consultation on Public Health Workforce in India, organized by the Ministry of Health & Family Welfare, Government of India in collaboration with the WHO Country Office for India on 24-25, June 2009 at New Delhi.

6.104 “Public Private Partnerships for Healthcare Delivery in India: Assessing Efficiency for Appropriate Health Policies” by Bharti Birla, Udita Taneja: This article said about Healthcare delivery was a major concern for India and other developing nations. A number of Public Private Partnerships
(PPPs) had entered the arena of health care delivery. These partnerships based on different models. The efficiency of such partnerships needs assessed, as it will help formulate policies that can contribute in enhancing the role of such partnerships in meeting the health goals of the country. Several factors govern the efficiency of such partnerships. The present article aimed to identify the factors that considered important while assessing the efficiency of healthcare delivery units based on PPPs, and to rank these factors.

6.105 “Public-Private Partnership in the Health Sector in India” by Alok Mukhopadhyay: This article describes about the Voluntary Sector in Health Care and PPP in health sector in India. It advocated the need for a new paradigm in the health sector.

6.106 “Public Sector Health Worker Motivation and Health Sector Reform: a Conceptual Framework”: This paper offered a conceptual framework for considering the many layers of influences upon health worker motivation. It suggested that worker motivation was influenced not only by specific incentive schemes targeted at workers, but also by the whole range of health sector reforms which potentially affect organizational culture, reporting structures, channels of accountability, etc.

6.107 “Public Sector Health Worker Motivation and Health Sector Reform: a Conceptual Framework”: This paper offered a conceptual framework for considering the many layers of influences upon health worker motivation. It suggested that worker motivation was influenced not only by specific incentive schemes targeted at workers, but also by the whole range of health sector reforms which potentially affect organizational culture, reporting structures, channels of accountability, etc.

6.108 “Public Service Reforms and Their Impact on Health Sector Personnel”: This booklet had been prepared to assist policy makers in international organizations, governments, and civil society. The authors hoped that it will help design, introduce and implement public service and health sector reforms in the most effective and sustainable way taking into account human resource policies. At the heart of the booklet, a set of critical questions aimed to help policy makers, including the social partners, to construct an effective path through the complex process of reform, restructuring.

6.109 “Qualitative and quantitative research methods” by Wuffet, Robin: This article provided information about various aspects of the quantitative and qualitative forms of research.
6.110 “Reform of Primary Health Care in Kazakhstan and the Effects on Primary Health Care Worker Motivation: the Case of Zhezkazgan Region”: This paper reported the experiences of primary care reform in the Zhezkazgan region of Kazakhstan. After the collapse of the Soviet regime, Kazakhstan undertook a radical program of reform to restructure the health sector, making primary care the centre piece of their health reform agenda. The reforms included the creation of independent family group practices financed on a capitation basis directly from the Ministry of Health, allowing free choice of primary care providers through open enrollment, and creating a non-governmental primary care physician association. This program had remarkable success in improving motivation for primary health care workers.

6.111 Removing shortage of doctors must for success of NRHM-PM: This article about the deliberations of Prime Minister Manmohan Singh who said the Government was aiming for substantial expansion in the number of health care facilities and removing shortage of doctors. It was must for success of NRHM.

6.112 “Research methods” by Rockman David: This document described several research methods for both qualitative and quantitative research.

6.113 “Research methods” by C.R. Kothari: This book provided information about various methods and their implications about research.

6.114 “Research methods” by Bremen, Mark: This document also described research methods.

6.115 “Research methods” by Johnson, Strauss: This document described about the effectiveness of the appropriateness of any particular research method being suited for a particular problem.

6.116 “Research problems and essentials of an empirical research” by C. Derrick: This document provided information about the essence of empirical research, how they corresponded to questions and hypothesis.

6.117 Reviewing the Benefits of Health Workforce Stability: This paper examined the issue of workforce stability and turnover in the context of policy attempts to improve retention of health workers. The paper argued that there are significant benefits to supporting policy makers and managers to develop a broader perspective of workforce stability and methods of monitoring it. The objective of the paper was to contribute to developing a better understanding of workforce stability as a major aspect of the overall policy goal of improved retention of health workers. The paper examined some of the limited research
on the complex interaction between staff turnover and organizational performance or quality of care in the health sector, provides details and examples of the measurement of staff turnover and stability, and illustrates an approach to costing staff turnover. The paper concluded by advocating that those types of assessment could be valuable to managers and policy makers as they examine which policies may be effective in improving stability and retention, by reducing turnover. They used as part of advocacy for the use of new retention measures. The very action of setting up a local working group to assess the costs of turnover could itself give managers a greater insight into the negative impacts of turnover, and can encourage them to work together to identify and implement stability measures.

6.118 “Rural health” by Rygh EM, Hjortdahl: This article examined possible ways to improve health care services in rural areas. While there was abundant literature on making health care programs integrated, interdisciplinary and managed in order to reduce fragmentation and improve continuity and coordination of care, only some part of this relates to rural issues. An added challenge was the lack of a generally accepted international definition of rural, which made it difficult to generalize from one region to another, and to develop an evidence-based understanding of rural health care. On evaluating the literature, it found that the development of new forms of interaction was particularly relevant in rural regions - such as interdisciplinary and team-based work with flexibility of roles and responsibilities, delegation of tasks and cultural adjustments. In addition, programs such as integrated and managed care pathways, outreach programs, shared care, and telemedicine were relevant initiatives. These might be associated with greater equity in access to care and coherent services with greater continuity but they not necessarily linked to reduced costs.

6.119 “Rural health survey (RHS) bulletins” by the Ministry of Health and Family Welfare, Government of India: Rural health survey bulletins were periodical reports and other important sources used for secondary data in the research. RHS bulletin/reports contained reports related to state wise area, population, density, population growth, urban and rural population, birth rate, death rates, IMR, infrastructure, and development of infrastructure, health manpower, coverage of health services and shortfall. By comparing the data of two points of time especially in the year 2005-06 and 2011-2012 the net outcome of NRHM was established.

6.120 “Rural India is short of 16,000 doctors”: This was a report published related to the latest government data revealed that rural India was short of over
16,000 doctors, including 12,000 specialists. As many as 12,263 specialists needed in community health Centres (CHCs) and 3,789 doctors in primary health Centres (PHCs), health ministry statistics for 2009 show. “In India, the patient-doctor ratio was around 1/30,000. The other states that face an acute shortage of trained medical practitioners in PHCs were - Assam (500 doctors), Orissa (413), Bihar (211), Gujarat (65) and Punjab (45).

6.121 “Sample registration system (SRS) Bulletins” by the Registrar General office, Government of India: SRS bulletins were another key secondary data sources under the research which published periodically almost every two three year by the Registrar general, India which contained state wise information related to estimated Birth rates, Death rate, Natural growth rate and Infant mortality rate. Those bulletins were the most quoted and universally accepted source of information.

6.122 “Shortage of doctors, nurses India’s biggest healthcare challenge – PM”: In a statement Prime Minister of India Dr. Manmohan Singh had said a shortage of doctors and nurses was the biggest hurdle as India sought to provide adequate healthcare facilities to the people. "There is a major shortage of trained medical professionals and nurses in the country and this is a major challenge for us in providing healthcare services to the people of India. We need to address the issues both at the national and at the regional levels to ensure that there are no shortage of doctors and nurses.

6.123 “Standards for reporting on empirical social science” by American educational research association: This document provided information about qualitative, quantitative research methods and standards of research reporting.

6.124 “Strategic Dynamics of the Project Based Organization” by Stamboulis Yeoryios, Kalaouzis George: This paper said that Project management was one of the most important and demanding fields of management. Cost and time overrides were more than common, while more organizations were becoming project-based. Through a systems perspective they developed a holistic view of the project-based organization as a structure of resources committed to activities and the strategic decisions that involved in the operation of the organization. A systems dynamics model developed in the fashion of a balanced scorecard.

6.125 Strategies for Health Sector Reform in South and Southeast Asia: This PowerPoint presentation provided information about health sector reforms in India in the purview of National Rural Health Mission.
6.126 “Study of Emergency Response Service (EMRI Scheme) by the National Health Systems Resource Centre (NHSRC):” this document had pointed out that EMRI was undoubtedly a historic landmark in the provision of health care in the nation. To its credit goes the achievement of bringing Emergency medical response on to the agenda of the nation. Though not part of the original NRHM design, its tremendous popular appeal along with the flexibility of the NRHM design made it possible for it to emerge as one of the leading innovations of the NRHM period. The first common review mission of the NRHM had also noted this as one of the two successful public private partnership worth replicating.

6.127 Subhasis, 21 Jan 2009: he reported that a great decrease in the incidences of anemia, which gone down from 30.2 percent to 23 percent. One would be amazed to know that dental diseases had also descended from 45.8 percent to 34.9 percent. Finally yet importantly, nearly 262 pair of spectacles, under the blindness control program, also provided free-of-cost to needy children by the department of ophthalmology. The entire chapter, therefore, regarded as a gracious strategy of the government to lessen people’s sufferings. The government, as a social institution, has many roles to play.

6.128 The Bhore committee recommendations: According to this article Bhore Committee adopted the goal of Universal access to Health care for all on the eve of Indian independence. That this goal not achieved was obvious; and then history repeated itself for the first time a quarter of a century ago when ‘Health for All’ adopted as a goal for Health development. This repetition of history ended in tragedy, with the subversion of the comprehensive Primary Health Care approach, which was replaced by a set of technological ‘quick-fixes’ that only scraped the surface of the problem while leaving the systemic issues unchanged. Now, History was repeating itself for the second time; again, the declared goal of the Mission is “to improve the availability of and access to quality health care by people, especially for those residing in rural areas.

6.129 “The concept and scope of public health care” by Ahmed, Jubair: this article described the concept and meaning of health and public health and also how they were different from each other.

6.130 “The rapid appraisal of NRHM implementation in Bankura district of West Bengal”: The report was based on the tabulation plan discussed and finalized at various workshops attended by representatives of all of the participating agencies including our centre. The report drafted by Mr. D.C. Choudhury, Deputy Director and Mr. Deepak Das, Field Investigator. Mr.
Deepak Das, field investigator of the centre did the tabulation of study. The report contained ten chapters including the major findings with invaluable information on utilization of untied funds at SC, PHC and CHC/BPHC level, implementation of Janani Suraksha Yojna, upgradation of health facilities under the NRHM and assessment of health and family welfare situation at the village level. It hoped that the findings will help the administrators and policy makers in future implementation of the National Rural Health Mission in particular and family welfare program.

6.131 “The 8th Meeting of the International Advisory Panel (IAP)”: it reviewed the National Rural Health Mission in a meeting which was held in New Delhi. The Panel led by Professor Jeffrey D Sachs, Director, Earth Institute, University of Columbia along with their team of experts, commended the impressive performance and dramatic results achieved under NRHM in a record short span, terming it an extraordinary in Public Health management.

6.132 "The health issues in India and MDGs” by Singhal, Priva: This document provided information about health issues in India and how millennium development goals geared to address them also the India’s progress towards the millennium development goals.

6.133 “The importance of human resources management in health care: a global context” by Stefan M Kabene, Carole Orchard, John M Howard, Mark A Soriano and Raymond Leduc: This paper addressed the health care system from a global perspective and the importance of human resources management (HRM) in improving overall patient health outcomes and delivery of health care services.

6.134 The key to the success of NRHM: In this article, it was described that the key to the success of NRHM lied in Intersectoral convergence; community ownership steered through Village Health Committees at the micro level.

6.135 "The lessons of RCH-I” by Raman, Srinivas: This document described the reasons of failure of RCH-I and described how the lessons were learnt from RCH-I and what required corrected in RCH-II/ NRHM.

6.136 “The micro-findings across four states (A.P, UP, Bihar, Rajasthan)” by Kaveri Gill (2009): This document evaluated the quantity and quality of service delivery in rural public health facilities under NRHM. This document said NRHM put rural public health care firmly on the agenda, and was on the right track with the institutional changes it had wrought within the health system. It also said, there were problems in implementation, so that delivery
was far from what it ought to be. On physical infrastructure, medicines and funding, procedural problems might easily scale with time, whereas on human resources and to the extent these affected the actual availability of services.

**6.137 The National Rural Health Mission (NRHM), Assam:** Assam NRHM was trying to improve the health scenario of the region by providing effective health care delivery system, especially in the rural areas. It has adopted different strategies to achieve the NRHM goals (Manisha 2010). (Thaindiannews 2009) reported that poor women and children in rural regions of India were availing many benefits from ASHA, a scheme launched by the Government of India under the National Rural Health Mission (NRHM). The scheme aimed at spreading awareness about mother-child health. Hundreds of families of Barolyahir had gained from the services rendered by the ASHA.

**6.138 “The report on Reproductive and Sexual Health of Young People in India” By NFHS 1992-2006:** this secondary analysis of data from National Family Health Surveys of India - 1, 2, 3 (1992-2006) for the age group 15-24 years not only provided significant information related to the situation and trends of health and development of adolescents / young people, but also, highlighted the crucial data gaps. It strengthened the argument that in order to plan and address the health and development needs of adolescents/young people, access to age and sex disaggregated data was very important. The need felt to collect primary data at the district and state levels from health facilities through the routine MIS system, as well as from research and academic institutions in the public and private sectors. The data required periodically collected through national surveys like NFHS and DLHS analyzed on age, gender and location/demographic disaggregated basis.

**6.139 “The State of public health in India during pre NRHM period”:** This document clearly stated that the state of public health in India during the pre NRHM period was highly deplorable. It was obviously a massive task to bring about major changes in the outcomes by simultaneous action on a wide range of determinants of health. The NRHM had based its interventions on the evidence from the studies and surveys. It had identified community based, flexible financing, innovations in human resource management, monitoring against IPH Standards, and building capacities at all levels as the principal approaches to ensure quality service delivery, efficient utilization of scarce resources, and most of all, to ensure service guarantees to local households. Health was a state subject and the NRHM was an effort at building a partnership with the States to ensure meaningful reforms with more resources. Ultimately, the success of NRHM expected to depend on the ability of the Mission interventions to
galvanize State Governments into action, pursuing innovations and flexibility in all spheres of public health action. Ensuring availability of fully trained and equipped resident health functionaries at all levels and large-scale demand side financing under initiatives like the Janani Suraksha Yojna for institutional deliveries were a few priorities for action. Partnerships with nongovernmental providers to strengthen the public health delivery were also an important need given the distribution of Specialist doctors in India. While we had 30,000 MBBS graduates coming out of our Colleges every year, the entire rural health system for more than 750 million people never had more than 26000 doctors.

6.140 “The working paper on evaluation of services under NRHM” by the Planning Commission of India: The document evaluated quantity and quality of service delivery in rural public health facilities under NRHM declared some positive notes. According to this paper, NRHM put rural public health care firmly on the agenda, and on the right track with the institutional changes, it had wrought within the health system.

6.141 “Transition from curative to preventive healthcare is a challenge for NRHM”: This article provided information about proceedings of the health care expansion summit in India. Healthcare Expansion India Summit, which was organized on third and fourth of June 2010 in Mumbai by Naseba a company specialized in producing upper level B2B summits, tradeshows across different verticals, saw a congregation of health care experts and discussions on key issues in Indian healthcare. The summit graced by top guns of the Indian healthcare industry and dealt with a variety of topics ranging from telemedicine, energy management in healthcare to India was positioned in the global healthcare map (NASEBA 2011).

6.142 “Trends in fertility, mortality, nutrition and health indicators” by Padam Singh: This paper highlighted the trends in Fertility, Mortality, Nutrition and Health Indicators. In the analysis, there was a heavy reliance on the important community based data sources such as Census, NFHS, RHS, Multi-indicator Surveys of UNICEF, and Indian council of medical research (Singh 2010).

6.143 UNFPA paper: The country representative of UNFPA said in his article that the one major source of help that the poor women and also men could look forward to was the ASHA, a key component proposed in the recently launched NRHM. ASHA expected to work in coordination with the existing AWW and the ANM and the PRIs. The value of this special focus on convergence lied in the fact that convergence brought in the activities of community level staff that
could benefit the end user greatly. Since the most deprived sections of the society were to be end users of NRHM, this would well serve its purpose (UNFPA 2007).

6.144 **Union Health Minister Shri Ghulam Nabi Azad:** He acknowledged that over the past 6 years, funds to the tune of 550,000 million been released under NRHM. This had helped in improving the infrastructure facilities, augmentation of human resources and quality of care, he noted. The OPD and IPD patients in health facilities had also increased. Under the *Janani Suraksha Yojna (JSY)*, the coverage of beneficiaries has gone up from 736 thousand in 2005-06 to more than 10 million during 2009-10. National IMR dropped by 3 points in the 2009 and in some high focus States; it dropped by 4 points, making the Millennium Development Goal achievable (Azad 2011).

6.145 **Aanganwadi Centre or AWCs per ICDS Sources:** Aanganwadi Centre had come up under the *Integrated Child Development Scheme* which implemented in India by the government in cooperation of United Nations Children Fund or *UNICEF*. The main objective of this program was to cater to the needs of the development of children in the age group of 3-6 years. Almost 1.3 million AWCs were in the country functional required being manned by almost 2.4 million AWWs (ICDS 2011).

6.146 **Ayurveda, Yoga, Unani, Sidha & Homeopathy (AYUSH) under NRHM:** Ayurveda, Yoga, Unani, Sidha & Homeopathy were commonly referred as AYUSH under *National Rural Health Mission*. Mainstreaming of AYUSH was planned by introducing AYUSH specialists at all health facilities up to Primary health centre level and almost 8500 AYUSH personnel were employed in the country (MOHFW 2005).

6.147 **Burden of diseases or Global burden of diseases (GBD):** The global burden of disease was a comprehensive assessment of mortality and disability from specific diseases, injuries, and risk factors. A practical guide for carrying out such studies was available in WHO national burden of disease manually (WHO, Mortality and global burden of diseases 2011).

6.148 **Community Health Centre, CHC:** It was prescribed under *Indian Public Health Standards* that among each 30000-50000 population there would be a Community Health Centre. It would be above the primary health centre but below the first referral unit and district hospital (IPH 2010).

6.149 **Decadal growth rate:** It was expressed in percentage and indicated the growth rate of population during one decade. Generally census in India had
occurred once in ten years since 1901 onwards then decadal growth rate indicated the growth of population in ten years or between two consecutive censuses (Census 2011).

6.150 *First referral Units, FRU:* Sub-district hospitals or *first referral units* were below the district and above the block level hospitals and acted as First Referral Units. These hospitals supposed to play an important referral link between the Community Health Centre, Primary Health Centre, and Sub-Centre. They had an important role to play as First Referral Units in providing emergency obstetric care and neonatal care and help in bringing down the Maternal Mortality and Infant Mortality (IPHS 2010).

6.151 *Health Management and Information System or HMIS data:* This was a web portal of the Ministry of health and family welfare, Government of India, which was also known as health information management system. All the work done under NRHM in the country was ultimately compiled and accessed through this web portal (HIMS 2011).

6.152 *Health Sub Centre, HSC:* *Health Sub Centre* used to be the most peripheral and first contact point between the primary health care system and the community. As per the *Indian public health standards* norms, one Sub-Centre established for every 5000 population in plain areas and for every 3000 population in hilly/tribal/desert areas (IPHS 2010).

6.153 *Integrated Management of Neonatal Child Illness, IMNCI:* *World health organization* had developed a new approach to tackle the major diseases of early childhood called the Integrated Management of Childhood Illnesses (IMNCI). This integrated approach was to ensure that all relevant needs of the child was looked at and attended to during the contact of the child with the health workers. Under NRHM IMNCI was implemented at the district levels (MOHFW, Integrated Management of Child Health and Illness 2009).

6.154 *Immunization schedule under NRHM:* This document provided the immunization schedule under NRHM also provided about vaccines and cold storage. The following kind of immunization was found mentioned happening in India.

6.154.1 *Full Immunization:* If any children between the age of 12-24 months was administered at least 3 doses of oral polio vaccine and DPT, I dose each of measles and BCG vaccine and a mother during her last pregnancy was administered two doses of TT with a booster, the entire process was collectively referred as full immunization (VHAI 2006).
6.154.2 Ring immunization: It referred to a situation when any person or group of persons administered immunization due to remaining in contact of any isolated infected person.

6.154.3 Mop up rounds: This term was related to polio immunization in infected areas visiting door to door (VHAI 2006).

6.154.4 Catching up round: It was additional efforts besides routine immunization to ensure immunization among left out (VHAI 2006).

6.154.5 Routine immunization: This was the basic schedule of immunization recommended for all mothers and children. Every country had its own routine immunization schedule although basics schedule was recommended by the *World health organization* (VHAI 2006).

6.155 Mother Non-Governmental Organizations, MNGOs: Department of Health & Family Welfare had introduced Mother NGO (MNGO) scheme under Reproductive and Child health program in ninth five year plan. Department of family Welfare had identified and sanctioned grants to selected NGOs called Mother NGO (MOHFW, Guidelines on Mother and Service Non Governmental Organizations 2004).

6.156 Primary Health Centre, PHCs: Primary Health Centre were the foundation stone of rural health services and a first haven of call to a qualified doctor of the public sector in rural areas for the sick and those who directly report or referred from Sub-Centre for curative, preventive and primitive health care. A typical Primary Health Centre was covered a population of 20,000 in hilly, tribal, or difficult areas and 30,000 populations in plain areas with 4-6 indoor/observation beds. It acted as a referral unit for 6 sub-centres and refers out cases to Community health centre and higher order public hospitals located at sub-district and district level (IPHS 2010).

6.157 Pre Natal Diagnostics Test, PNDT Act: Pre Natal Diagnostics Test Act provided for regulation of the use of pre-natal diagnostic techniques for the purpose of detecting genetic or metabolic disorders or chromosomal abnormalities or certain congenital malformations or sex linked disorders. Also for the prevention of the misuse of such techniques for the purpose of pre-natal, sex determination leading to female feticide; and, for matters connected therewith or incidental thereto. This was aimed to check the disturbing sex ratio in India (MOHFW, PNDT Act 2006).

6.158 Service Non-Governmental Organizations, SNGOs: Service Non-Governmental Organizations with an established institutional base and delivery
infrastructure were encouraged to complement the public health system in achieving the goals of the RCH program. Any NGO that engaged in directly providing integrated services in an area co-terminus with that of a Community health centre or primary health centre with 100000 populations was called a Service NGO.

6.159 **Vaccine and vaccination:** A preparation of a weakened or killed pathogen such as bacteria or virus or a portion of the pathogen’s structure that upon administration stimulated antibody production or cellular immunity against the pathogen but incapable of causing severe infection was commonly referred as a *Vaccine*. The process of administration of antigenic material or a vaccine to produce immunity to a disease was referred as *Vaccination*.

6.160 **Definitions of health Indicators and Ids by the World Health Organization:** Health status of any particular state or country was illustrated in terms of a numerical value or any other logical manner what were termed as *health indicators* (WHO 2004). There were internationally accepted norms for evaluation of various health indicators thus acceptable in global perspectives. Under NRHM, also such *health indicators* were important because the increase or decrease in the value of health indicators would be the indicative of the public health situation. Therefore, without full familiarization with health indicators it could not be possible to evaluate the public health situation of India even the outcome of NRHM. Some important health indicators defined in following manner:-

6.160.1 **Adult mortality rate:** It was a probability of any person male or female dying prior to turning 60 years of age, per 1000 population (WHO 2004).

6.160.2 **Antenatal care coverage (percent):** *Antenatal care coverage* was an indicator of access and utilization of care during pregnancy. Percentage of women who utilized antenatal care provided by skilled birth attendants for reasons related to pregnancy at least once during pregnancy as a percentage of live births in a given time period. Antenatal care included recording medical history, assessment of individual needs, advice, and guidance on pregnancy and delivery, screening tests, education on self-care during pregnancy (WHO 2004).

6.160.3 **Births attended by skilled health personnel (percent):** All women must have access to skilled care during pregnancy and at delivery to ensure detection and management of complications. It was defined as a percentage of the live births attended by skilled health personnel in a given period. A skilled birth attendant was an accredited health professional such as a midwife, doctor, or
nurse who had been educated and trained to proficiency in the skills needed to manage child delivery (WHO 2004).

6.160.4 **Children under five years of age using insecticide-treated nets:** Use of Insecticide Treated Nets (ITN) by a population in malaria risk areas was one of the most effective malaria prevention measures. Percentage of population under five years of age in malaria-risk areas reported as sleeping under an ITN (WHO 2004).

6.160.5 **Children aged <5 years underweight (percent):** This was the probability in percentage of children comprising less than five years that were underweight (WHO 2004).

6.160.6 **Contraceptive prevalence rate (percent):** Contraceptive prevalence rate was the percentage of women between 15-49 years who were practicing, or whose sexual partners were practicing, any form of contraception. Contraceptive methods included condoms, female and male sterilization; injectable and oral hormones, intrauterine devices, diaphragms, spermicidal and natural family planning, as well as lactation amenorrhea (lack of menstruation during breastfeeding) where it cited as a method (WHO 2004).

6.160.7 **Condom use at higher risk young people, 15-24 years percent:** Consistent correct use of condoms within non-regular sexual partnerships could substantially reduce the risk of sexual HIV transmission. The percentage of young people aged 15–24 years reporting the use of a condom during the last sexual intercourse with a non-regular partner among those who had sex with a non-regular partner in the last 12 months (WHO 2004).

6.160.8 **Crude Birth Rate, CBR:** Crude Birth Rate stood for nativity or childbirths per 1,000 people per year. It was the number of births over a given period divided by the person-years lived by the population over that period and expressed as the number of births per 1,000 populations (WHO 2004).

6.160.9 **Crude death rate, CDR:** CDR stood for the number of deaths per year per 1000 people (WHO 2004).

6.160.10 **Coverage of vital registration of deaths:** The registration of births and deaths with causes of death, called vital registration system, was an important component of health information system (WHO 2004).

6.160.11 **Infant Mortality Rate, IMR:** IMR was the number of deaths of babies under one year of age per 1,000 live births per year. Therefore, the rate in a given region was 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 (WHO 2004).

6.160.12 Female Sterilization: It was the number of women in the reproductive age generally 15-49 years who had adopted any of the various methods for permanent prevention of pregnancy (WHO 2004).

6.160.13 Institutional birth/delivery at home assisted doctor/nurse/LHV: It was the number of women who were supposed visited at her home by any doctor, nurse, or lady health visitor at least three times during pregnancy (WHO 2004).

6.160.14 Mother Mortality Rate, MMR: It was the ratio of the number of maternal deaths per 100,000 live births (WHO 2004).

6.160.15 Total Fertility Rate, TFR: A measure of the fertility of an imaginary woman who had passed through her reproductive life subject to all the age-specific fertility rates for ages 15–49 that recorded for a given population in a given year. The TFR represented the average number of children a woman would have were she to fast-forward through all her childbearing years in a single year, under all the age-specific fertility rates for that year. In other words, this rate was the number of children a woman would have if she was subject to prevailing fertility rates at all ages from a single given year, and survived throughout all her childbearing years (WHO 2004).

6.160.16 Life expectancy rate: It was the expected number of years of life remaining at a given age (WHO 2004).

6.160.17 Male sterilization: It was the number of men adopted any permanent method of sterilization (WHO 2004).

6.160.18 Malaria mortality rate: It was number of people died per 100000 populations due to malaria in one year (WHO 2004).

6.160.19 Neonates protected at birth against neonatal tetanus: It was expressed in percent indicating the number of children protected against neonatal tetanus at birth (WHO 2004).

6.160.20 Neonatal mortality rate: It was the number of deaths during the first 28 completed days of life per 1,000 live births in a given year or period. Neonatal deaths could be subdivided into early neonatal deaths, occurring during the first seven days of life, and late neonatal deaths, occurring after the seventh day but before the 28 completed days of life (WHO 2004).
6.160.21 Number of physicians, nurses, and midwives per 10000 populations

Physicians’ density was the number of physicians per 10 000 population. Nurse density was the number of nurses per 10 000 population. A total number of health workers per 10 000 population was the total number of physicians, nurses and midwives. Nurse-physician ratio was number of nurses to physicians (WHO 2004).

6.160.22 Percentage of women received at least three visits for the ANC: It was numbered and proportion of women who received at least three ANC visits (WHO 2004).

6.160.23 The percentage of children (12-23 months) fully immunized: It was the percentage of children aged 12-23 months receiving full immunization as per immunization schedule. This showed the coverage of immunization and level of protection against some particular diseases during childhood (WHO 2004).

6.160.24 Population having access to an improved water source and sanitation (percent): Access to improved sanitation was the percentage of population with access to improved sanitation in a given year. Improved drinking water sources were defined in terms of the types of technology and levels of services that were more likely to provide safe water than unimproved technologies. Improved water sources include household connections, public standpipes, burials, protected dug wells, protected springs, and rainwater collections. Unimproved water sources were unprotected wells, unprotected springs, vendor-provided water, bottled water, and tanker truck-provided water. Reasonable access broadly defined as the availability of at least 20 liters per person per day from a source within one kilometer of the user’s dwelling. Sustainable access had two components with respect to water: one stands for environmental sustainability, the other for functional sustainability. Improved sanitation facilities were defined in terms of the types of technology and levels of services that were more likely to be sanitary than unimproved technologies. Improved sanitation included a connection to a public sewer, connection to septic systems, pour-flush latrines, simple pit latrines, and ventilated improved pit latrines (WHO 2004).

6.160.25 Population using solid fuels (percent) determination: It was the use of solid fuels in households is associated with increased child mortality, mainly from respiratory diseases, and is an indicator of socioeconomic status. It was the percentage of the population using solid fuels as their main cooking fuel. Solid
fuels include coal, charcoal, wood, crops or other agricultural waste, dung, shrubs, grass, straw (WHO 2004).

6.160.26 Prevalence of current tobacco use in adolescent (13-15 years) in males and females (percent): Early onset of tobacco use was an important risk factor for chronic diseases associated with tobacco later in life. Tobacco was an addictive substance and smoking often starts in adolescence, before the development of risk perception. By the time the risk to health was recognized, the addicted individuals find it difficult to stop tobacco use. The prevalence of tobacco use (including smoking, oral tobacco, and snuff) on more than one occasion in the 30 days preceding the survey, among adolescents aged 13-15 years (WHO 2004).

6.160.27 Sex ratio and its measurement: It was the number of female versus male per 100 population. Suppose sex ratio for a country is 990 then it would say that country there were only 990 females per 100 males (Census 2011).

6.160.28 Total expenditure on health as percentage of GDP, general expenditure on health in comparison of total government expenditure, per capita total expenditure on health at international dollar rate: Total health expenditure was the sum of general government expenditure on health and private expenditure on health in a given year (in international dollars). GDP was the value of goods and services provided in a country by residents and non-residents without regard to their allocation among domestic and foreign claims (WHO 2004).

6.160.29 Revised National Tuberculosis Control program data and figures: The data from the official websites of RNTCP provided following information about TB Control Programs in India.

6.160.29.1 Annualized Case Detection Rate for New Smear Positive Cases: It was the number of new smear-positive tuberculosis cases registered for treatment per 100,000 populations. In India, the estimated incidence of cases was 75 new smear-positive cases per 100,000 populations per year. The global and the national target were to detect at least 70 percent of the total estimated cases - i.e. 53 cases per 100,000 per year (RNTCP 2011).

6.160.29.2 Proportion of New Sputum positive out of Total New Pulmonary Cases: In a well performing area, 50 percent of all new pulmonary cases would be sputum smear-positive (infectious, confirmed in the laboratory) case, i.e. there would be no more than approximately one smear-
negative case for every smear-positive case. This proportion however should not be less than 45 percent (RNTCP 2011).

6.160.29.3 Smear Conversion Rate: It was the percentage of new smear positive (infectious) patients who were documented to have become non-infectious (smear-negative) within 3 months of starting treatment. In a well performing area, a conversion rate of at least 85-90 percent would be achieved. This indicator was reported one quarter (4-6 months) after patients were registered for treatment, and applied to every patient started on treatment, without exceptions (RNTCP 2011).

6.160.29.4 Treatment Success Rate: It was the percentage of new smear positive patients who were documented to be cured, or to be successfully completed treatment. In a well performing area, 80-85 percent of patients expected to be successfully treated. The global and national target was to achieve and maintain 85 percent treatment success. This indicator was reported 13-15 months after patient were registered for treatment, and applied to every patient started on treatment, without exceptions (RNTCP 2011).

6.160.30 Unmet need of contraceptives: This was another world health organization defined health indicator which said that millions of women in developing countries who preferred to postpone or avoid pregnancy did not use contraceptives. It further defined that the gap between the demand and use of contraceptives was referred as unmet need of contraceptives (WHO 2004).