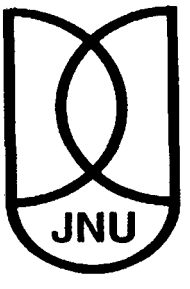
UNRAVELLING HEALTH INEQUITIES: A STUDY OF THE UNIVERSAL IMMUNIZATION PROGRAMME IN TWO SELECTED DISTRICTS OF MANIPUR

A Dissertation Submitted to Jawaharlal Nehru University in Partial fulfillment of the requirement for the award of the degree of

MASTER OF PHILOSOPHY

VEDA YUMNAM



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DECLARATION

I declare that the dissertation entitled **"Unravelling Health Inequities : A Study of the Universal Immunization Programme in Two Selected Districts of Manipur"** submitted by me in partial fulfillment of the requirement for the award of the degree of **Master of Philosophy** of Jawaharlal Nehru University is an original work. This dissertation has not been submitted for any other degree of this University or any other University.

Veda Yumnam

Veda Yumnam

CERTIFICATE

We recommended that this dissertation be placed before the examiners for evaluation.

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To

Baba and Ima

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LISTS OF ACRONYMS/ABBREVIATIONS

ANC	Ante Natal Care
ARI	Acute Respiratory Infection
ASHA	Accredited Social Health Activist
ANM	Auxiliary Nurse –Midwife
AWW	Anganwadi Worker
AIDS	Acquired Immuno Deficiency Syndrome
BPL	Below Poverty Line
BSNL	Bharat Sanchar Nigam Limited
BCG	Bacille Calmette –Guerin
CES	Coverage Evaluation Survey
CD	Community Development
CHC	Community Health Centre
CSDH	Commission on Social Determinants of Health
DFWO	District Family Welfare Officer
DHS	Demographic Health Surveys
DIO	District Immunization Officer
DLHS	District Level Household and Family Survey
DPT	Diptheria, Pertussis and Tetanus
DPM	District Programme Manager
EPI	Expanded Programme on Immunization
FWPR	Female Workforce Participation Rate

GOI	Government of India
GDI	Gender Development Index
HDI	Human Development Index
HLEG	High Level Expert Group
HSKN	Health Systems Knowledge Network
HIV	Human immunodeficiency virus infection
ICDS	Integrated Child Development Services
IIPS	Indian Institute of Population Sciences
IMR	Infant Mortality Rate
JSY	Janani Suraksha Yojna
MCH	Maternal and Child Health
MoHFW	Ministry of Health and Family Welfare
MSDR	Manipur State Development Report
NACO	National AIDS Control Organization
NE	North-East
NER	North-East Region
NH	National Highway
NFHS	National Family Health Survey
NRHM	National Rural Health Mission
NREGA	National Rural Employment Guarantee Scheme
NGOs	Non Governmental Organization
NRHM	National Rural Health Mission

GOI	Government of India
GDI	Gender Development Index
HDI	Human Development Index
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NE	North-East
NER	North-East Region
NH	National Highway
NFHS	National Family Health Survey
NRHM	National Rural Health Mission
NREGA	National Rural Employment Guarantee Scheme
NGOs	Non Governmental Organization
NRHM	National Rural Health Mission

NTAGI	National Technical Advisory Group on Immunization
OBC	Other Backward Classes
ORS	Oral Rehydration Solution
ORT	Oral Polio Vaccine
OPV	Oral Rehydration Therapy
PHC	Primary Health Care
PHFI	Public Health Foundation of India
RCH	Reproductive and Child Health
RIMS	Regional Institute of Medical Sciences
SCS	Sub-Centres
SES	Socio-Economic Status
SEORO	South-East Asia Regional Office
STs	Scheduled Tribes
TBA	Traditional Birth Attendants
UIP	Universal Immunization Programme
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UTs	Union Territories
WB	World Bank
WHO	World Health Organization

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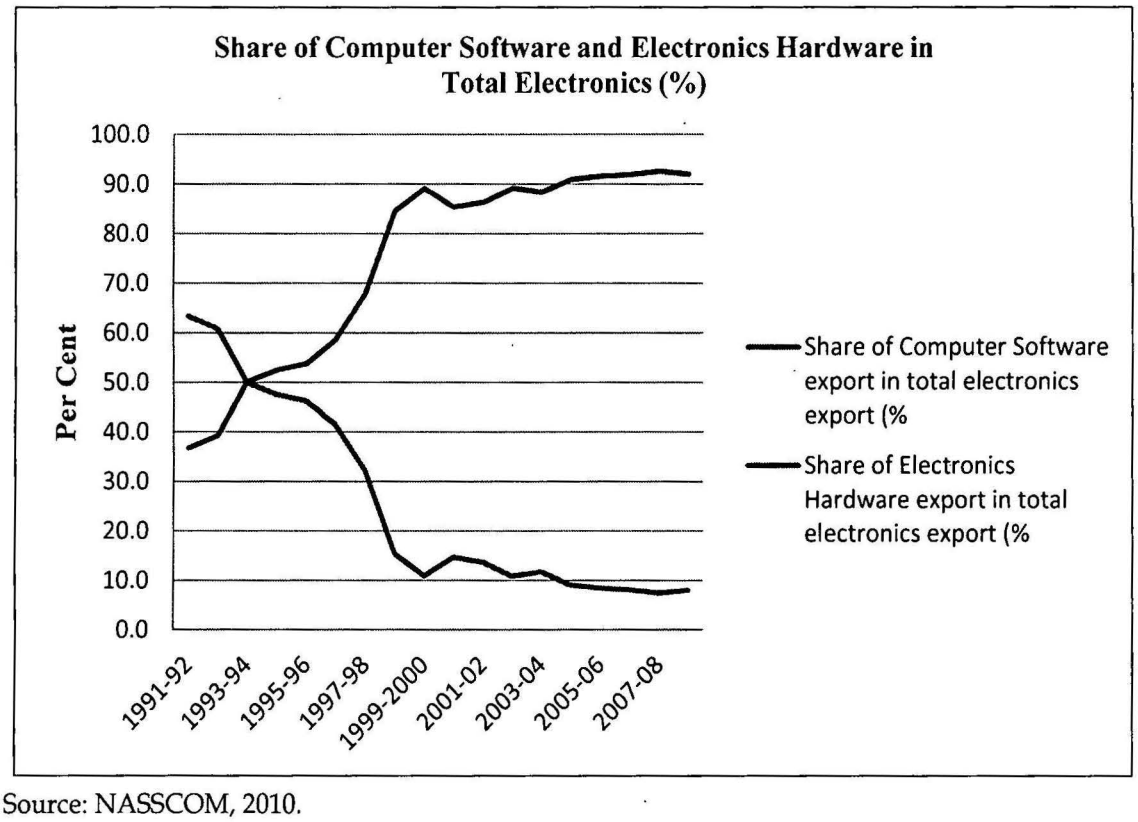
Figure: 1.1 Share of Computer Software and Hardware in Total Electronics



Source: NASSCOM, 2010.

The recorded trends in India's production and export of electronics cannot be delinked from ITA. As already indicated India joined the ITA on 25 March 1997. Since then the average tariff on IT goods is found declining continuously over the years. From an average of 63 percent in 1996 for ITA goods, it declined to zero tariff by year 2005. Notice that there are considerable variations in tariff between various commodity groups, but they all converge to zero by the year 2005. Moreover, they all are declining throughout the period 1997 to 2005. For the non-ITA goods, while the average tariff were more or less the same in the year 1999. But after ITA, while the tariff for ITA goods move to zero levels, for the non ITA goods the tariff rates reduce much slower, stabilizing at around 15 percent in year 2005 (table 1.1). How has this import liberalization impacted on the industry, is an issue on which our understanding remain rudimentary.

From the empirical literature, we can see that the recent deceleration in export growth nevertheless, the export of IT software and service sector recorded

Table 1.5:

Magnitude and Composition of Gross Budgetary Support (GBS) for Plan by the Centre (which comprises – *Central Assistance for State & UT Plans* and Plan expenditure by Central Govt. Ministries)

	A	B	C	D
		(B is one of the two components of A)	[C= (A–B) as % of A]	(B as % of A)
Year	Total GBS for Plan by Centre as % of GDP	*Central Assistance for State and UT Plans* as % of GDP	Budget Support for Plan expenditure by Central Govt. Ministries as % of total GBS	*Central Assistance for State and UT Plans* as % of total GBS
1985-86	7.1	2.5	64.4	35.6
1986-87	7.3	2.5	65.2	34.8
1987-88	6.8	2.7	59.7	40.3
1988-89	6.1	2.3	62.9	37.1
1989-90	5.6	1.9	65.6	34.4
1990-91	5.0	1.9	61.7	38.3
1991-92	4.7	2.1	55.2	44.8
Eighth FYP (annual average)	4.5	2.0	55.2	44.8
Ninth FYP (annual average)	4.0	1.7	56.5	43.5
Tenth FYP (annual average)	4.2	1.5	65.7	34.3
First three years of Eleventh FYP (annual average)	5.1	1.4	72.0	28.0
2007-08	4.5	1.3	70.7	29.3
2008-09 RE	5.3	1.5	72.1	27.9
2009-10 BE	5.6	1.5	73.8	26.2

Source: **Jha et al , Centrally Sponsored Schemes: Are they the solution or the problem?, 2009**

THEORETICAL APPROACH

The Perpetuating Cycle of Inequity

"Why is Jason in the hospital?

Because he has a bad infection in his leg.

But why does he have an infection?

Because he has a cut on his leg and it got infected.

But why does he have a cut on his leg?

Because he was playing in the junk yard next to his apartment building and there was some sharp, jagged steel there that he fell on.

But why was he playing in a junk yard?

Because his neighbourhood is kind of run down. A lot of kids play there and there is no one to supervise them.

But why does he live in that neighbourhood?

Because his parents can't afford a nicer place to live.

But why can't his parents afford a nicer place to live?

Because his Dad is unemployed and his Mom is sick.

But why is his Dad unemployed?

Because he doesn't have much education and he can't find a job.

But why ...? (Health Canada 1999)

The above story sums up the theoretical approach that would be followed as a framework of the study, '***the Social Determinants Approach***' of health. The social determinants approach look at the social, cultural, economic and environmental factors that influences health.

CHAPTER NO 1

INTRODUCTION AND LITERATURE REVIEW

The chapter is divided into three sections: introduction to the study, the chapterization plan and literature reviewed in the area of the study.

I. Introduction

The North -Eastern region (NER) of India has missed out on the economic growth acceleration witnessed in much part of the country and has continued to remain as a secluded region with lower overall growth rates, high poverty incidence and political instability (WB 2007).The region has also witnessed degradation and depletion of natural resource, which was once highlighted as contributing greatest potential for growth and development of the region (WB 2007). With the incidence of uneven development and the unmet attention on development paradigm marked in the NER (Nayak 2009), this study took forward the analytical framework set forth by the Commission on Macroeconomics and Health (2001) on health being '*a creator and pre-requisite of development'* and proceed to analyze the health of the people in Manipur, a state in the NER.

In this study, the focus is on the state of child health in Manipur and its determinants. Guite and Acharya (2005) argue that the states of the NER are characterized by features that show uniformity and at the same time diversity within the spatial health pattern. The states of Nagaland, Mizoram and Manipur are reported with the highest prevalence of HIV/AIDS in the NER while states like Tripura, Sikkim and Arunachal Pradesh reported with the lowest prevalence (NACO 2011). Manipur as a state also show similar inter-sectionality in the characteristics of the health pattern. The state show similar features of health patterns like malaria and other water-borne diseases due to the similar ecological features yet shows diversity in health concerns and outcomes such as full immunization coverage and HIV sero-prevalence, with the three district sharing international borders namely Churanchanpur, Chandel and Ukhrul along with Imphal West reported amongst the highest in the state and even in the country (MSDR 2006; IIPS 2008 and Government of Manipur 2011).This study envisaged

to highlight certain such factors embedded in the social structure that brought inequities and pattern in the health of Manipur.

Another, factor that needs a mention in the state of health of Manipur is the nature of the health provisioning system. The provisioning of services falls majorly within the domain of the public sector, the private sector, the non –governmental organization, traditional healers and the Christian missionaries. Recognizing the roles of NGOs and other private stakeholders as partners of development which includes health, one can see a trend that has emerged amongst the NGOs working in Manipur. The only public health concerns in the state that has received major attention and has received maximum funding overall from both the Government and other funding agencies are in areas related to HIV/AIDS[1]. HIV/AIDS has been dealt as a priority issue and still continues to have the biggest hold in the public health arena of Manipur. Other activities in public health other than HIV/AIDS have never got the focus and the only interventions carried within the state are the only activities implemented under the various national health programmes. With an insufficient public service provisioning system in Manipur (MSDR 2006), the uphill task of providing the majority of the health services are left under the jurisdiction of the public sector. As the public sector in Manipur is characterised with a weak service provisioning system (MSDR 2007; IIPS 2008) and interventions carried out in the national health programmes have a strong hint of verticality embedded in the delivering of the services, most of the concentrations of the work in the state has been in some specific and well-focused public health issues. Under such circumstances, most public health concerns are left unaddressed and the health care needs of the people failed to get the desired attention needed. With such a setting, public health concerns other than HIV/AIDS needed a shift in getting priority and required to be brought into the forefront in Manipur. Moreover, a more holistic approach to health and other health service planning that addresses the local needs of the state and an immediate action that aligned with the shortages and gaps existing in the health system calls forth for action.

[1] Deduced from the informal conversations carried out with the Officials of the State Health Department health on the overall state of health during the field visits.

Additionally, with other providers working in the area of health not diverging into other areas such as malaria control, maternal and child health and their focus remaining specifically concentrated in HIV/AIDS resulted in many public health issues largely neglected and unaddressed. Most of the public health issues never get the required attention and funding. Nonetheless on those few instances when the NGOs do branch out on other health related activities, their activities have seen a general lack of continuity in services. Instances of NGOs diverting their activities from HIV/AIDS to malaria control work like providing insecticide treated mosquito nets has been observed but only as contract based activities. Services tend to discontinue and short-live in the NGO sector.

On similar lines, the selective nature of intervention by Christian Missionaries in selective pockets addressing specific health concerns for a particular section of the society did not contribute much to the health of the Manipur society. This coupled with limited services provided in a few private health institutions and a deteriorating traditional health system, both of which hardly addresses the majority of the sections of the society, the health care needs of the people call forth for action in Manipur. As mentioned, Manipur's public health concern has been characterized with services provided by an insufficient public sector, a fluctuating work nature carried out by NGOs, selective service provisioning and a deteriorating system of the traditional health system, many areas in health issues are being left unaddressed, unmet and un-documented. As a fall out of it, the state face a huge paucity in literature, and a gap in empirical work carried out in the public health domain. Most areas of public health interest have still not been documented and not researched .Also, wide gap in knowledge in the state led to lack of evidence based health intervention in the state .With only limited literature available in the form of government records and reports which failed to provide information, a holistic perspective-planning of any activities becomes a big challenge. Even the limited literature and data available are confined only in the state level and not in the district level, especially the hill districts.[2]

[2] Based on the information provided by officials to the researcher in the State Health Departments and NRHM office, and the literature search of the state using different government websites and others relevant websites

The aforesaid factors emphasize to a definite need for more research and studies to help build more specialized services to cater to the unique demography of the state. Moreover, for a health care system to address the health needs and health related requirements of a group of population, it must work in tandem with and suit the economic and socio-cultural conditions and environment aspects of the place so that it would address the health of its people. Therefore, taking the increasing awareness of children's health as an indicator of well being and progress of a society (CHILD 2002), this study has focused on the issues of child health in Manipur. The inequities that exist regarding the outreach, accessibility and the outputs of the child health programme depict the inequities that are prevalent in the society at large. Moreover, children stand as a group which is not only distinct comprising of sub-groups ranging from neonates to adolescents, but they are characterized with different dependencies and health determinants. They require different services to ensure their health status and together they form a highly vulnerable group. Ensuring their health necessitates understanding a wide complex phenomenon and requires a systematic understanding of the attributes that surpasses beyond the health sector. Therefore, efforts in understanding the complexity of the determinants of children's health would help identify pointers to the causes of the inequities in the larger social system and these inequities, as rightly put by the CSDH (2008) are *'long standing, interrelated and their determinants ingrained in the social structure'*. They could not be fully explained by economic factors nor explained by the varying capacity of local health services but are mainly caused by inequitable distribution of the more '*fundamental social, political and economic forces*', which are known as the 'social determinants of health'(CSDH 2008).

With the Universal Immunization Program (UIP) in Manipur implemented since 1985 as a core service in the public sector and the state of Manipur with its child proportion of 12.98 percent falling in the age group of 0-6years vis-a-vis the national average of 13.12 percent as per 2011 Census, the coverage of the UIP will act as a good marker of the state of health and the prevalent inequity in the state. As an important national programme provided in the public health services, the coverage output of the programme act as a tracer for indicating accessibility and outreach of the health systems across different population groups. Moreover, any

malady that inflicts the health systems will be mirrored in the way the programme functions and reaches out to the people. Hence by looking at health systems as a determinant, a critical feature of the health system would be brought into the forefront about the health system in Manipur that led to health inequities in the state.

The final report of the Heath Systems Knowledge Network (HSKN) (2007) that addresses health systems as a social determinant of health inequities look at the general population benefits brought about by any health systems that go beyond preventing and treating illness .It also includes the services considered to promote health inequity in design and management. And look at the outcomes as a system for reflecting the dominant social values of the society (WHO 2007). On a similar note the study will look at the different dimensions in the health system through the lens of UIP that led to the inequities in the access and availability of the services of the programme that resulted in uneven coverage outcomes in the state. As the work is carried out with limited time and resource constraints as an individual researcher, the study looked only at an area amongst all the public health concerns from the varied health problems that have remained, unattended and neglected in the part of the region.

II. Chapterization Plan

The first chapter briefly introduces the study and list out the Chapterization plan of the study. It is followed by a sub-section of a review of literature in the area of the study. The literatures reviewed includes the work carried out in the area to understand health inequities and determinants of the health inequities .The second sub-section includes historical overview and present scenario of the immunization programme in India and the literatures on understanding the social determinants of the immunization programme.

The second chapter presents the conceptual framework of the study and discusses the research design used in carrying out the study. To set the backdrop of the study a brief profile of the state of Manipur and the districts where the study was conducted has been discussed in this chapter.

The third chapter is based on the quantitative data available from the survey data on various child health indicators in Manipur. The chapter focuses on the analysis of child health indicators of Manipur to outline the state of child health in Manipur. The methodology followed in the chapter is the comparison of various child health indicators of Manipur with the top three best performers for each indicator and with the other states in the NER with the data from the National Family and Health Survey -3 (NFHS-3).A comparison within the districts of Manipur on those indicators for which the data are available for the district level is examined from the District Level Household and Facility Survey data- 2 and 3.

The fourth chapter is based on the field investigation carried out in the field while interviewing and discussing with the various respondents of the study. The chapter is the presentation of both quantitative and qualitative data findings from the data collected during the field investigation. The chapter has been divided into sub-sections .The first section comprises of the general profile of the study areas, the parents' profile and the children's profile whose immunization status has been studied in this study. The second sub-section is the presentation of the quantitative data collected on the status of immunization. The third sub-section presents the perceptions and opinions collected from the respondents on different aspects of the UIP. It has been written in the narrative form with an underlying core theme from the perceptions and opinions shared by various stakeholders.

The fifth chapter briefly discusses and summarizes the major findings of the study and concludes the study. The analysis has been drawn from the approach of health system as a social determinant and the principle of health as a pre-requisite for development.

III. Literature Review

Literature is reviewed in two sub-sections. The first section briefly gives the overview of the concept of health inequities, and health and its determinants to set forth the backdrop of the various determinants that causes health inequities. The second section is the historical overview of the UIP, its present scenario in India and the inequities in the programme .The various determinants that contributed in the inequities in the programme coverage has been reviewed.

1.1 Health Inequity: Reviewing the Concept

Equity in health has different meaning and is defined in many ways. WHO (2003) defines it as "*providing fair opportunity for all people to enjoy health to their fullest potential*". It is the creation of the environment where the differentials in health amongst population groups are at the minimal. The measurement of inequities is carried out in terms of the health output indicators representative of the population health. The differentials if any that emerged in the health outputs due to the position a population group occupies merely by virtue of being in a social group, economic state and geographical position, and other socially determining factors, are health inequities (CSDH 2008; Lloyd et al. 2004). However, from the Indian context Baru et al (2010) puts it the ever increasing differentials in health outcomes are mainly due to "*historical inequities, socio-economic inequities and inequities in the provision and access to health services*" (CSDH 2008).

Health inequities exist in all societies irrespective of the progress a society has achieved in health outcomes. They are conditions engrained in the structuring of a particular society which determined the health of its people. The conditions that influenced the health are the 'determinants of health'. The determinants as proposed by Dahlgren and Whitehead (1991) as cited in SACOSS(2008) takes the shape of various sociological, environmental and health related factors that influence the health and perceptions of well-being which includes political, global, social, economic, cultural, biological, physical, environmental, behavioural, psychosocial and early childhood years. The CSDH (2008) highlights the determinants as 'inter-related and interdependent, and the outcomes of one determinant influences and produces other outcomes' (CSDH 2008).

1.2 Determinants of Health

1.2.1. Socio-Economic factors

The health status of an individual has been strongly influenced by the state of socio-economic level and has shown to increase with the increase in the 'social gradient ladder'. The lower an individual occupies in the rung of the socio-economic ladder the poorer the health status. The socio-economic levels whether

measured in terms of education, income, occupation or other social class, have strongly determined the health status of the individuals. Many empirical studies have proof the relationship of socio-economic factors with the status of health of the people (CSDH 2008).

1.2.1.1. Social Characteristics and Economic Well-Being

The social classes and economic state of a person determine the health status of a person. The manner in which social classes occupy their position in the social structure determine the services provided to them and the delivery of the health services system designed by the superior classes for the lower classes (Qadeer 1985). Similarly, the social class category of an individual decides the extent to the access of services, quality and type of services and nature of information received from the health services system (Qadeer 1985; Nayar 2007).

The economic well being of an individual determines strongly the living conditions of an individual such as housing, ability to buy sufficient and quality food , access and ability to meet the expenses related to health, that have a direct impact on the health outcomes of an individual. Studies carried out in the areas of health and its relation of economic well being have shown that social class in the early years of life and in adulthood contributed in the inequities in poor health status in later life of an individual (Llyod et al. 2004). A reviewed carried by Bradley and Corwyn (2002) on the literature in the area of socio-economic status (SES) and child development shows a consistent finding of the success of the children in school with the parents SES. Also, SES and the nutritional status of the children follow a gradient with children with better nutritional status belonging to higher SES quintiles in comparison with the poorest quintile group (Kanjilal et al. 2010). Similar findings have revealed that mortalities from cardiovascular disease were found to be the highest amongst the lowest SES group and decreases with an increase in SES (Kaplan 1996).

Moreover, social characteristics such as caste and gender strongly influence the level of access and nature of services received from the health services system. Studies carried out in the area of health and social characteristics have shown a strong relation. A study carried out on under five mortality using the 1981 census in India by Murthi, Guio and Dreze (1995) have shown that the higher level of

mortalities was found amongst children from lower caste, STs and SCs than the upper social caste groups. Also, the level of health seeking behaviour also varied with caste groups and gender (Sen et al. 2000). Findings from the study in the area of health seeking pattern show that amongst population groups the scheduled caste are amongst the worst affected (Sen et al. 2000).

Gender is also another factor that determines the health and is mainly due to the social and economic structure of a society that cuts across caste and class (Sen and Ostlin 2007). Quality of health care differentiation existed on the basis of gender with women and girl child reported to suffer from the mal-distribution of health resources that led to inequitable health outcomes. Sen et al. (2007) study the systematic hierarchies and failures in gender that brought health inequities in Koppal district of Karnataka .The findings show that for short term illnesses the proportions of women/girls who were never treated were higher than the men/boys within all the quartile groups while in case of long term illness and that require continue services, a highly gender difference was marked in all the quartiles with more women/girls unlikely to get treatment. Furthermore, women's lower health status and lower health care access on the ground are mainly due to the factors such as lower health seeking behaviour, low levels of health awareness and lack of knowledge of the women due to their lower social status (Zaidi 1996).Also, with the rising cost of health care and widespread poverty, women have suffered from higher untreated morbidities than men (Roy and Chaudhuri 2008) and the top down approach of service provisioning has failed to address the health needs of the women that has led to differential health outcomes amongst women (Sen et al. 2007).

Also, high differentials in the nutritional status, morbidity and mortality have shown a wide gap on the basis of gender. Skewed sex ratio favouring the male child has been found as attributed to varied socio-cultural factors imbedded in the society due to preferences for sons over daughters (Harriss White 1999).Further, the level of exposure from different health risk taking behaviour that resulted in different mortality outcomes are observed between males and females. More female die of the diarrheal death than male in India in the age group of 25-69 years as the leading causes of mortality by sex (MoHFW 2009). Doyal (1995) argues that women's responsibility of housework increased their vulnerability and

exposure to get waterborne and get affected by communicable diseases. Also, the causes of death among the male and female due to unintentional injuries are found more among male than female (MoHFW 2009) in India the age group of 25-69 years due to the gendering of role allocation of male as bread winner leading them exposed to and work in hazardous conditions .The men in most households in India relatively enjoy economic independence and freedom and power to move around that led them engaged in dangerous past time, violence and used of intoxicating substances (Doyal 1995) while female die more of respiratory illness and diarrheal disease which is mainly due to their nature of work at home referred to as 'housework' by Doyal (1995).

1.2.1.2. Education

Education status is a measure that has been used widely in the SES determinants of health. The educational attainment of the individual and of the parents had a strong influenced on the health of the individual and in child health care practices. From the individual perspectives educational outcomes are found to be critical component that determine future employment opportunities and earnings potential of the individual .With better education linked to better employment opportunities, safer work environments, increased income and a higher investment in health which, in turn, are associated with higher social position of an individual act as a strong determinant of health (Jablonska et al.2012) .With an increased in education, individuals are able to make informed choices and translate health messages into good health and nutritional practices that benefits the health of an individual. Furthermore, it also increases the human resources of health in terms of providers as well as educators (WHO SEARO 2008).

Furthermore, parental education has been proven to have a strong correlation with the child's health (Parashar 2005; Desai and Alva 1998).As suggested by a review of literatures carried out by Caldwell and Caldwell (1993) the role of education affect child health in two pathways viz. improve usage of modern health services and a wide range of favourable activities that influences the health care practice of the children. Similar findings have been echoed that with greater parental education, a higher levels of utilization of child health services like immunization, management of childhood diarrhoea and ARI increases (Ramesh and Govindasamy

1997), with higher maternal literacy a higher nutritional knowledge amongst mothers were observed (Christian et al. 1988) and a higher maternal education status leading to the decreasing proportion of malnourished children (Mishra et al 1999), and with every additional years of maternal education the child mortalities falls steeply for both male and female children (Tulasidhar 1993). Similar findings were also shown by Desai and Alva (1998) that maternal education had a strong relation with three markers of child health namely immunization, infant mortality and height for age.

1.2.1.3. Occupation

Occupation of a person determines the health of a person by influencing on the affordability of a person to access health care services at the time of diseases and illness. With the rising cost of care and a deteriorating health service system in the public sector, the occupation status plays a major role in the health and well being of an individual. Under such circumstances, the earning capacity and the source of income plays an important determinant of health.

The nutritional status differed with different occupational classes with people engaging in unorganised sector occupying the lower rung of the hierarchy. The nature and type of work environment which a person is engaged with also affects the health (CSDH 2008; Llyod et al. 2004). Many people are engaged in hazardous working condition which has a strong manifestation in injuries, respiratory diseases, inhaling poisonous gases, visual disability and other symptoms. In some situation it even extends to death. As most of the occupational diseases take time to appear and it is difficult to interpret a direct correlation of the diseases with the work environment and difficult establish a direct relation. As cited in the report of the High Level Expert Group (HLEG) on Universal Health Coverage 2011 , migrant workers who formed one of the lowest group with no social security and health benefits form as a group who are the most exploited and performing hazardous occupation. Higher rates of morbidities are reported amongst them like respiratory diseases, injuries and poisoning due to the nature of occupation most of these workers are engaged with.

Unemployment impacts the health of the people by lowering their self-esteem and confidence. Morris et al. (1994) as cited in Bartley (1999) state that a higher

prevalence of ill health and excess mortality amongst people who are unemployed. As ill health prevents people from work and perform their job responsibilities, and make them incapable to find work due to the physiological and mental condition, the condition form as a likely pathway for cause of unemployment. Another way of looking at employment status and health is that of the link of unemployment status and the financial instability. An individual with no employment and unsecured jobs usually falls in the poor economic strata which led to their inability to afford health care and access to the services (Bartley1999).

1.2.2. Physical Environment

The physical environment where people live, earn their livelihood and grow influences the health of an individual (CSDH 2008) .Contaminants in food, water, soil and air has led to serious health outcomes depending on the quality and level of exposure (Llyod et al. 2004). Mc Keowon (1972) thesis highlighted the importance of environmental factors such as water, sanitation etc. for the dramatic reduction of mortality due to infectious diseases in the late 19^{th} and 20^{th} century in the United Kingdom. Pollution level in the air and water have serious health consequences like respiratory diseases, waterborne diseases, skin diseases and others. A study carried out to investigate the effect of safe drinking water and sanitation on diarrhoeal diseases in rural Orissa, India show the presence of sanitation facility has an inverse relation with the lowest incidence of childhood diarrhoea among those households who have toilet/latrine facilities. The finding of the study also shows households who drinks water from tube well and bore well are three-fifth likely to experience episode of diarrhoea as compared to households who drink water from unsafe water sources (Panda 2007).

Moreover, the location and other amenities available in the surrounding environment like proper drainage and waste disposal system, transport facilities, and the safety and comfort provided to the residents , all played a major role in the health and well-being of an individual (CSDH 2008). In a review of literatures carried out by Vrijheid (2000) of the selective epidemiological studies carried out on the health effects of residents living near the landfills in single and multiple sites show a positive relation between various health impacts with living near landfills. Also, another feature of the neighbourhood like overcrowding of houses

in slum and urban areas led to congregation of people living in a small geographical location and the proximity to one another makes it easy for the transmission of infectious diseases (CSDH 2008).

Moreover, the vast majority of the households in third world countries relies on bio-fuels which includes wood and cow dung for cooking. Most of these households which these people live do not have proper ventilation system and proper lighting. Women, aged, small children and disabled who stays indoors most of the times inhale these pollutants arising from the burning of the fuel disproportionately as these groups are usually around while cooking and their confinement at home due to gender biases, disability and old age restrict their movement(Doyal 1995;CSDH 2008).

The built environment in which a person work and live also affects the health outcomes of an individual. The type of housing, sanitation and drainage facilities in and around the house, the ventilation system in the house and lighting contributes the health and well -being of a person. Smith et al.(2001) as cited in Llyod et al. (2004) have reported that good housing deprivation during childhood having an impact of the long-term health consequences in adult life .The differential in housing condition and location not only represents the economic state of a person but low social class, education and occupation. A study amongst the Aboriginal people in Canada shows that large numbers of them live in poor housing condition and are homeless. Due their condition these people faced significant barriers in health like inability to show the residential proof which limit their access to services due to the absence of an insurance card, inability to afford prescription medicine and their day to day life struggle affects their health conditions (Public Health Agency of Canada 2010).

1.2.3. Social Network System

The social support system an individual received from families, friends and communities are linked to better health outcomes. It is defined by Cohen and Syme (1985) as cited in Stansfeld (1999) as '*the resources provided by other persons'*. The social support an individual received from a chain of social support is the social network. Social network acts as a strong support system at the time of adversity and needs of an individual. It strongly determines and boost the morale

of an individual, and provides the sense of security and safety. Social networks are categorised in the form of the functional aspect of the social support received and varies in terms of contacts and frequency of contacts. The networks could be in the form of primary network to which an individual is more attached and are in frequent contact while the distant network are to which there are limited contact and limited support received to an individual(Stansfeld1999).

Social support systems bring positive physical and mental health to an individual. The ability of an individual to bring positive relations depends on the support systems they received from the parents in the early days of the life. A disturbed early life will lead to patterns of dissociation and anxious adult life which may themselves be related to ill health of the individual as they are likely to engage in unhealthy behaviour like excessive alcohol consumption and smoking. Children born from broken families, single parent families or from families whose parents are substance abused when they grow up suffered and engaged in the same activities that are harmful for health (Case et al 2002).As mentioned in Llyod et al. (2004), strong social support has helped to decrease mental illness, suicide rates and child abuse amongst individual, and further increased quality of parenting and physical environment of an individual. The networks help the individual to master and control over life circumstances that act as a buffer against health problems (CSDH 2008; Lloyd et al 2004). Studies have revealed differences in health according to the marital status. Single widowed and divorced men and women have a higher mortality rate as compared to married people (Locker 2003).

Further, social networks work as a protective seal for individuals to cope up with adverse stressful life events such as loss of jobs, death of near and dear ones, and other untoward incidents. A study carried out between the relationship of life events and health outcomes by Brown and Harris (1978) as cited in Locker (2003) show that depression amongst women depend on the presence of three or more factors that increase the risk such as absence of a close and confiding partner, loss of mothers at the age of 11years, employment opportunities outside the home and having three or more children under 15 years at home. The above mentioned risk factors had a direct influence on the self esteem of the woman that unable her to cope with the situation. Also, a strong support system from family acts as a buffer against ill health by providing a cushion for both the mental and physical health.

Kaplan et al. (1994) as cited in Stansfeld (1999) states that with members of a family sharing economic, recreational and adversity together, any factors that deter the mental and emotional well being of an individual are averted and minimized. The study of social support and mortality amongst the people in Finland have shown greater mortality risk amongst individuals who lack mental participation in organizations, have few friends and are single (Stansfeld 1999).

In terms of physical health, social support and morbidities have also been shown to have a strong relationship particularly cardiovascular disease. Social isolation and stroke has a positive linked amongst a large number of men in USA as shown by a study carried by Kawachi et al. (1996) as cited in Stansfeld (1999).The lower level of emotional support in the socially isolated individuals had led to higher rate of strokes. Fitzpatrick et al. (1991) as cited in Stansfeld (1999) found out that the social support received in dealing diseases like chronic disability and painful diseases influenced the outcomes of an individual dealing with the health conditions. Depending on the level of support the individual copes up better with the disease outcomes. Furthermore, the level of support an individual received from the society or a social group also has a strong impact on determining the health of an individual. Communities with high level of cohesion amongst its people show positive health outcomes amongst its people and vice versa. Upkeep of physical environment of a community like drainage system, sewage management and disposal system, safe drinking water sources and other civic amenities as a single group increases and promotes health (Mollah and Aramak 2010).

1.2.4. Individual and Biological Characteristics

The biological characteristics like the genetic make-up, the sex of a person, aging and functioning of the physiology has determined the health experiences of a person. The genetic make-up of an individual had been confirmed to pre-dispose individual to a wide range of diseases (Kreiger 2002).Also, the sex-linked of an individual determine the risks a person is exposed to from a number of diseases and their survival rate. For example higher infant mortality amongst male child due to the biological disadvantage as a result of slower immaturity of lungs due to the effect of testosterone than girls and also a high rate of male foetuses being

conceived than female but male foetuses getting spontaneous aborted or stillborn Hassold et al. (1983) as cited in Doyal (1995), are all sex-linked determinants. Further, the age of a person also determined the health outcomes of a person. The process of aging affects certain bodily and physiological functioning which impacts the health of an individual.

Further, most of the sex-linked diseases are related with the social milieu as the health of the parents especially the mothers had a strong relation on the health of the child. The nutritional, mental and the personal behaviour of the mothers like smoking and drinking alcohol during the time of pregnancy have a direct impact on the health of the child. A mother who is anaemic and had reportedly low weight gave birth to low birth weight children. Further, the mental state of the mothers has a direct impact on the child health care practices that influences the health of the child (Muthayya 2009).

Moreover, the level of coping capacities and control an individual have towards the life events and the challenges faced in everyday life determine the physical and mental state of the individual. Moreover, the personal habits and behaviour like consumption of alcohol, smoking, diet, sexual behaviour and other risk behaviours determined the health status and outcome of the individual. The findings of the study known as the Jaipur health watch carried out in rural Rajasthan, India shows that personal habits like smoking have a significant correlation with prevalence of coronary heart disease and hypertension (Gupta 2006).Further, personal health and hygiene practices also averts many contagious disease. Simple personal practice like combing, hand-washing and brushing amongst school children have a direct association of morbidities amongst children in a study carried out in South Kolkata (Deb et al 2010).

1.2.5. Health Services

Health service system includes network of education, research and delivery system (Qadeer 1985). The way a health service system has been designed and implemented for the health of the population determined the health status of the individuals. The type of services whether it works to maintain and promote health, to prevent disease, and to restore health and the nature of services provided that includes primary, secondary or tertiary care affects the services received by an

individual. Further, the differentials in access to the health services available depending on the social group an individual belongs impact the health of the individuals (Qadeer 1985).

Unevenness and differential in the distribution of health services lead to inequality in service provisioning that impacts health. They are as Qadeer (1985) puts it, "*the inequality in resource distribution, inequality in access, inequality in participation and inequality in health status*". The inequalities in the distribution of resources had been marked by a skewed distribution of human resources in health, health infrastructure and finance. With the help of NSSO and Census data an estimate drawn on human resources in India shows that the number of health workers by category is around 2.2 million health workers, approximately 20 health workers per 10,000 population, which is less than the WHO norm of 2.5 workers/ 1000 population in India (PHFI 2008). With a skewed distribution of the health infrastructure towards the urban areas reported in India and many parts of the third world countries, the access of the services to many people have been affected and unevenly distributed. Concentration of more allopathy doctors, para-medical and technical staff and concentration of health facilities in the urban areas than the rural areas marked the implication in the rise of untreated morbidities and unmet health needs of the people in the rural areas (Qadeer 1985; Baru and Bisht 2010).

Similarly, the inequality in access has been contributed by factors such as geographical inaccessibility, social inaccessibility and economic inaccessibility. Access due to difficult terrain and other allied system like road, tele-communication services and climatic condition impacted the health of the people. Similarly, social inaccessibility of the health services system due to the caste, ethnic, race or gender group an individual belongs to impact the health. The same has been seen with inequalities in participation of the decision making process due to top down approach of the health delivery system, and almost no and few representation in the planning of the health activities by the beneficiaries (Sen 2002; Sen and Ostlin 2007).

As a consequence of the above mentioned factors inequalities in health status outcomes and diseases have resulted amongst the people. Moreover, economic inaccessibility marked the inability to access the required health services as people

are unable to afford to pay the expenses for medicine, user charges and other hidden costs. In a society where the inequalities in health services have been marked, people from differential level are marked with different mortality and morbidity pattern with people at the bottom of the social hierarchy having the worst health effects (Qadeer 1985; Nayar 2007 and Baru et al. 2010; Sen et al. 2007).

1.2.6. Cultural Determinants

The position occupies by an individual by virtue of being in a particular societal group like race, caste, religion and ethnicity determines the health of an individual. As per the cultural beliefs systems of the particular section an individual belongs, the individuals are subjected to a number of cultural influences which decides the perception and health seeking behaviour of that individual. Depending on the nature of the influence, it determines positive as well as a negative health outcome of the individual. Furthermore, the way a particular individual interact with the health care system, their participation and level of service utilization, amount of health information received, their understanding of health and illness and the priorities given to a particular disease, have been strongly influenced by the cultural practices of the individuals (Qadeer 1985). Banerji (1982) argues that the health problems are mainly a result of the ecological background, cultural, economic and social setting and the political structure of the population that produces the health culture of the population.

Cultural factors of a society determine the perception of health problem, the meaning interpreted for the particular state of health, and the way how the responses to the health problems have been planned. The health beliefs system that influences the health seeking behaviour of the people and their strong beliefs in mystic and super-natural powers in the treatment of health problems with the Vaidyas, Hakims and other traditional healers act as a determinant of health (Carstairs 1955). Also, Marriot (1955) in his experience as a doctor in the state of Uttar Pradesh observed people's resistance against the Western medicine. With a strong belief and practice system that has been practiced for years in a particular society , an attempt to uproot the belief system remained as an uphill task even if the pretext of the attempt includes scientific modern treatment of diseases. People

in Kishan Garhi where Marriot carried out his medical practice had a set of traditional belief system that has been engrained in the particular health delivery system of the society. The change in the health attitudes of people needs time and building the trust of the people to accept a new belief system. Therefore, cultural milieu and health practice system of a particular society have a strong influence on the health of an individual living in the place.

1.3 Measuring Health Inequities

Health inequity is measured in terms of differentials in health output indicators such as life expectancy of the population, infant mortality, death rates from various diseases and other morbidity prevalence amongst individuals or population groups that emerged due to unequal access to health care, unequal distribution of services and unequal quality of services (Spinakis et al. 2011). The term is not the same as inequality which is a broader term and includes factors that are not remediable whereas health equity is about 'fairness', and are a cause of societal condition and remediable (Starfield 2011). Further, as highlighted by Starfield (2011) inequity in health is of two types: vertical and horizontal. Vertical inequity exists when "*when people with greater needs are not provided with greater resources*" while horizontal inequity existed "*when people with the same needs do not have access to the same resources"* (Starfield 2011).

Furthermore, health inequity is marked with inter-sectionality and differentials amongst the population groups in terms of health outcomes .They are engrained in the society structure and measuring them only requires stratifying the population groups into socially, economically or geographically factors and analysing whether the differential are on account of the social position or other socially determined circumstances. A social gradient which follows a step wise or linear decrease in the health indicators depending on characteristics such as education, gender, social class, place of residence and other socially determining factors of the sub-groups of population or the individuals are the health inequities(CSDH 2008). Furthermore, inequities in access could be used to measure health inequities as people with the greatest need have the poorest access to health care captured in 'the Inverse Care Law', which states that 'availability of good medical care tends to vary inversely with the need for it in the population served' Hart (1971) as cited in Watt

(2002).Other determinants of health inequities are the access to health services in terms geographic access, location and physical availability of health services, economic access in aspects related to finances at the times of health seeking, and cultural access relates to acceptability and rejection of particular health system (Whitehead and Dahlren 2007; PAHO 1999).

1.3 Immunization in India: History, Present Scenario and Inequities

1.3.1 History

The early 1900s marked the introduction of vaccines in India .The inoculation of small pox vaccine started during the British India but was provided to limited population of European and British Officials. But it was only with BCG in 1962 that a vaccine became a part of the national programme under the National Tuberculosis Control Programme (Jacob 2007). Also, soon after India's independence vaccination against smallpox was gradually extended in the princely state and in 1962 Smallpox Eradication campaign was launched in India but despite the effort it was widely prevalent. In 1967 the Intensified Smallpox Eradication Programme was launched in India and with the global drive to eradicate small pox from the globe the Operation Small Pox zero was launched in India in 1975 and continued till 1977 till the country was certified small pox free (Fenner 1988). Further, in line with the Alma Ata Declaration and the recommendation of the WHO, India launched the immunization programme in 1978 as the Expanded Programme on Immunization (EPI) (WHO 1978). The EPI was restricted only in the urban areas and was implemented with DPT, OPV, BCG and typhoid-paratyphoid fever vaccines (Banerji 1985). It was initiated with the objective to reduce morbidity and mortality from diphtheria, pertussis, tetanus, poliomyelitis and childhood tuberculosis by providing immunization services to all eligible children and pregnant women by 1990.Self sufficient production of the vaccine was also envisaged as an objective of the programme (Patra 2005).

The UIP was launched in 1985 in a phase manner to extend immunization coverage among all the eligible children throughout all the districts of India by 1990. Under the UIP, six core vaccines become part of the programme which includes BCG, DPT, OPV and measles. Measles vaccine was included in the UIP after EPI was accelerated as UIP in 1985.The objective of the programme set forth

was to cover at least 85% of all infants against the six vaccine-preventable diseases by 1990 and to achieve self-sufficiency in vaccine production and the manufacture of cold-chain equipment (GoI 2011; Patra 2005).

After a year of its launch, the programme was given the status of a National Technology Mission and was included in the 20 point programme in 1986 to provide a sense of urgency and achieve the goals during the speculated time period. Then the programme became a core activity of most Maternal and Child Health (MCH) activities carried out in the country. It became a part of the Child Survival and State Motherhood Programme in 1992 and Reproductive and Child Health Programme (RCH) in 1997. The Polio eradication program was launched in 1995-96 under which National Immunization Days was taken up for an active surveillance for acute flaccid paralysis. Further, to provide technical assistance and strengthen the programme, the GoI formed a National Technical Committee on Child Health in 2000 and launched Immunization Strengthening Project for strengthening immunization as per the recommendation of the Committee. Lastly, a new chapter in the UIP took place with the establishment of the National Technical Advisory Group on Immunization (NTAGI) by the Department of Family Welfare in 2001 to assist the government in developing a nationwide policy framework for vaccines and immunization. In 2011 after the recommendation of the NTAGI a combination vaccine of pentavalent vaccines was introduced against five killer diseases- diphtheria, pertussis, tetanus, hepatitis B and Haemophilus influenzae type B in the Universal Immunization Program in Tamil Nadu and Kerala (Patra 2005; GoI 2011; The Hindu 2010).

1.3.2 Present Scenario

The UIP in India is one of the largest in the world in terms of numbers of beneficiaries targeting 2.7 Crores of infants and 3.0 Crores pregnant women every year (GoI 2011), quantities of vaccines used, and the numbers of immunization sessions organized, the geographical spread and diversity of areas covered (GoI 2010). Under the immunization program, six vaccines are used to protect children and pregnant mothers against Tuberculosis, Diphtheria, Pertussis, Polio, Measles and Tetanus. It also proposed to include Hepatitis B vaccine in UIP in phased manner and have been implemented in many parts of the country. The country is

also a major producer and exporter of vaccines with approximately 43% of global vaccine being supplied and manufactured in India but primarily by the private sector even though the public sector also produces vaccines. The domestic market of the UIP in the country alone stands 100 million doses (GoI 2011; Patra 2005).

The coverage data of the UIP as presented by all the three rounds of the National Family Health Survey, a national sample survey shows that India has observed a significant increased in the child immunization coverage from NFHS-1to 3 in almost all background characteristics such as sex, place of residence, caste, religion and wealth index. However, an increase in overall coverage does not mark an equitable access.

A steep social gradient has been observed in terms of coverage as per NFHS-3 with forty five percent of male child receiving full immunization while the female child amounting to 41 per cent , the urban dwellers accessing the services up to 57 percent while 38 per cent in rural, the Hindus with the highest coverage attainment and the Muslim with only 35 percent , the scheduled tribes with the lowest coverage of 31 per cent and the general population with the highest coverage with 53 percent and the lowest economic quartile group of children with immunization coverage of only 24 percent as compared to the counterparts of the highest quartile groups with 71 percent (IIPS 1995 , 2000 and 2007).

Table No. 1.1 Vaccinations by Background Characteristics Across the Three Rounds of NFHS for All Vaccination

Characteristics		**NFHS-1**	**NFHS-2**	**NFHS-3**
Sex	Males	36.7	43.1	45.3
	Females	34.2	40.9	41.5
Caste	Scheduled Caste	26.8	40.2	39.7
	Scheduled Tribe	38.2	26.4	31.3
	Other Backward	*	43.0	40.7

	Classes				
	Others		35.4	46.8	53.8
Region	Rural		30.9	36.6	38.6
	Urban		50.7	60.5	57.6
Religion	Hindus		36.0	42.4	44.4
	Christians		26.3	61.1	56.3
	Muslims		42.4	32.7	36.3
	Others		36.4	59.7	27.2
Wealth Index	Lowest		*		24.4
	Second	Low*	*	30.4	33.2
	Middle	Medium*	*	43.2	46.9
	Fourth	High*	*	64.7	55.3
	Highest		*		71.0
Total			35.4	42.0	43.5

(* not included in the survey; *Low, *Medium and *High –NFHS-2 Categorization, Source: NFHS-3[IIPS 1995, 2000 and 2007)

1.3.3 Inequities in Child Immunization Programme

Most of the health services are laden with inequity in terms of access and distribution of services. The UIP in India also suffers from the malady which is inflicting our health service system. Differentials in the programme coverage has been observed (IIPS 2007) and has been determined by a myriad of factors at the individual, family and community level as well as the health system or service delivery level issues. Moreover, the social determinants inhibit and act as a barrier to the success of the child immunization programme reiterating the inequities that exist in the larger social structure. The socially determining barriers could be analysed in the form of the broad

While the estimated break points of exports are presented in table 2.8, the growth rates of the break points are presented in table 2.9. By observing the growth rates of exports of electronics in industry in general, we can infer that exports have grown at faster rate after 1996-97, the period after ITA, though there is no break point. It is interesting to note that exports of consumer electronics has grown at 17.8 per cent during 1988-89 to 1996-97 but the growth rate declined to 1.2 per cent during 1996-97 to 2001-02 and increased to 16.9 per cent during 2001-02. The export growth of electronics capital goods is 1.8 per cent during 1988-89 to 1993-94 and increased it to 15.8 per cent during 1993-94 to 1998-99. However, there is no significant third break the growth rate declined to -0.92 per cent. From the trend we can infer that export growth of electronics capital goods is high in the pre-ITA period and declined drastically after the 1998-99. Similar trend can be observed in the export performance of components as well. It has registered a negative growth rate of -19.5 per cent after 1998-99. In general, the estimated growth rates of structural break analysis show that export growth did not show any significant break in any of the product groups of electronics industry after the ITA period except for consumer electronics, where exports have grown significantly after 2001-02. These trends illustrate that as anticipated, ITA did not really help electronics to build export competitiveness rather industry's participation in the global world seem to have come down.

Table 2.9: Estimated Growth of Exports (1988-89 to 2010-11) in (%)

	First Break	Second Break	Third Break
Consumer Electronics	17.8 (1988-89 to 1996-97)	1.2 (1996-97 to 2001-02)	16.9
Electronics Capital Goods	1.8 (1988-89 to-1993-94	15.8 (1993-94 to 1998-99)	-0.92
Components	1.0 (1988-89 to-1993-94)	20.2 (1993-94 to 2004-05)	-19.5
Total	7.2 (1988-89 to 1996-97)	15.6	--

Source: Same as Table 2.6.

While the analysis of exports of electronics industry in general and product groups in particular revealed that the growth of export earnings are not impressive. Therefore, it is interesting to examine other element of trade performance, imports. The table 2.10 presents trends import performance and import intensity during 1988-89 to 2010-11.

headings of gender, class, caste, geography, health services, and other ethno-cultural factors.

1.3.3.1. Gender Inequities

Like other social relations, gender relations as experienced in our daily life are based on the core structure of a society. Depending on how power is embedded in the social hierarchy and based on the allocation of the power between men and women in a particular society a gradient in health programme access has been formed. The allocations of power within the sexes have strongly manifested in the inequities of the UIP outcomes. And depending on the manifestation the levels and intensity of the discrimination on the particular sex of the individual varied.

Inequities in immunization coverage by gender have been shown to exist from the data of the national survey data, NFHS-3 and findings of studies carried out in the area of child immunization. Corsi et al. (2009) investigated the presence of gender inequities in terms of access to timely immunization coverage at the national level using data collected from three consecutive rounds of the National Family Health Surveys, 1992 to 2006. The findings of the study have shown that immunization coverage has increased for both boys and girls nationally but gender specific differences in vaccination coverage are consistent and significant with the girls' coverage lagging behind boys'. Similar findings have been observed in other studies with families neglecting and discriminating against the girl child (Pande and Yazbeck 2003; Bonu et al. 2003). Further, the sex composition of the surviving older siblings of a family plays an important role on whether a child will be immunized or not (Pande 2003; Corsi et al. 2009; Patra 2008). However, all girls do not face the same level of discrimination. The first girl born after two or more boys may face less discrimination than a boy who has two or more older brothers suggesting that parents desired at least one daughter (Patra 2008). Furthermore, gender inequity has been observed in receiving the six antigens in a timely manner as per the age appropriate schedules risking the balance between effectiveness and vaccine safety (WHO 1996). In a study carried out using the data of all the three rounds of NFHS has found that girls received lower age-appropriate BCG coverage than boys. The age of receiving OPV-3 for girls is more than 13 weeks later than recommended than the boys. Also,

girls significantly born in the same years continue to receive the measles vaccine about six weeks later than recommended from the boys (Corsi et al. 2009).

Gender inequity takes a different form when stratifiers like race, caste, region, class status are added to the analysis (Pande and Yazbeck 2004; Borooah 2007; Patra 2009). Borooah (2007) in a study to find out gender bias in the context of caste and religion found out that the proportion of children fully vaccinated was lowest for Muslims (40%) and highest for Hindus (60%).Further, the likelihood of boys and girls being fully vaccinated have fall by 6 and 9 points respectively, if they were Dalits and by 10 and 12 points, respectively, if they were Muslim. Moreover, inequities in terms of region and states play an important role considering the strong regional patterns of son preference and gender differential in child mortality in India. The gender inequities in immunization by region and state are shown to be not significant and not clearly determined by a north south divide in an analysis carried out by Corsi et al. (2009) by evaluating 21 states of India. However, Guadin and Yasbeck (2004) found in their study using the NFHS data that in rural areas out of 16 of the 17 Indian States in the study area they have focused, some degree of gender inequality were found whereas in urban areas 12 out of 17 had higher immunization rates for males.

Further, the immunization services are gendered in the way the programme has been designed and implemented. The services target mothers as primary caretakers of children and left the fathers. The activities of the programme design such as mother-child duo immunization card, fathers receiving selective information from frontline health workers, mothers being the target of counselling session and fathers participation not incorporated in any part of the programme implementation reinforced gender and social dynamics found in the communities. Men or fathers are rarely involved in vaccination programmes and information hardly reached them (Swiss TPH 2010). By targeting only women, vaccination interventions moreover neglect the critical influence men have over women's decision-making power. The participation and involvement of men could have bridge the gap that exist in the coverage outcome of the programme. Further, a report by WHO (2010) on gender and immunization reports that immunization programmes has failed to recognise the constraints that women or mothers face in accessing and utilising services due to the gender inequities in the society such as no support from the family members,

household chores, relatively subservient status , lack of mobility and economic independence.

1.3.3.2 Wealth Based Inequities

Wealth based health inequalities follows a social gradient (Gita and Iyer 2011) and specific health indicator outcomes vary differently by the socio-economic positions of men and women in the society. Wealth based inequalities in health are economic in nature and ill health exist is more common among the more disadvantaged and positive ill health is more common among the better off (Wagstaff and Watanabe 2002).

Socioeconomic health inequalities examines the distribution of health by a variety of different measures including social, occupational class, educational attainment, income, dwelling size, consumption, and ownership of certain household assets as reflected in a 'wealth-index' (Wagstaff and Watanabe 2002).

The wealth index of the families of the children increases the immunization chances. The findings of Pande (2000) on a national representative sample shows that children from wealthier households have higher odds of a better immunization than other children. In a study to find out the impact of polio in the non-polio immunization conducted in four rural North Indian states, Bonu et al. (2003) noted that the odds of being immunized for children in the poorest quintile as compared to children in the richest quintile are significantly higher in the post intervention survey than the pre-intervention survey. Further, a good indicator of accessibility and outreach in health care provisioning and utilization is largely dependent on the income quartile group.

Studies carried out by Gwatkin et al. (2000) and Gaudin and Yazbeck (2005) and in some low performance areas of the child immunization programme in India suggested the decrease in immunization levels with a worsening of the distribution of wealth. Measures such as household wealth, parental education and occupation act as a proxy measure to understand the wealth based inequities as these measures decide the economic position of an individual. Studies have shown that maternal education or literacy is one of the most important and powerful factors explaining different child mortality and morbidity levels within and between societies (Pande and Yazbeck

Following the break points of imports in table 2.11, we have presented the growth analysis of break points in table 2.12. The table shows that the growth of total imports of electronics industry is 15.9 per cent during 1988-89 to 2000-01 and it increased to 24 per cent after 2000-01. It is interesting note that the growth rate during first break point of imports in the consumer electronics is -2.8 per cent. Though there are no subsequent break points, the growth of imports has increased to 30.2 per cent during 1992-93 to 2001-02. The electronics capital goods industry has shown break point in the year 2003 and the growth rate is 14.9 per cent and further increased to 19.3 per cent.

Table 2.12: Estimated Growth Rates of Imports (1988-89 to 2010-11) in (%).

	First Break	Second Break	Third Break
Consumer Electronics	-2.8 (1988-89 to 1992-93)	30.2 (1992-93 to 2001-02)	28.8
Electronics Capital Goods	14.9 (1988-89 to 2003-04)	19.3	
Components	No break	No break	No break
Total	15.9 (1988-89 to 2000-01	24.0	-

Source: Same as Table 2.6.

The analysis of trends and growth rate of import shows that the rate of growth of imports is much higher than the rate of growth of exports of electronics industry. This is true for all the sub-product categories as well. It is found from the analysis that imports of electronics industry in general and all sub-products are much higher in the post ITA period.

2.5.3 Employment Generation

In the last two sections, we have analysed the performance of electronics and changing product structure in terms of output and trade. While the changes in output have implications on trade, the structure of output also has implications on employment generation capacity. The issue of employment growth in the manufacturing sector has received wide attention. Scholars have argued that employment generation capacity of Indian manufacturing sector has declined despite the output growth (Fallon and Lucas, 1993; Papola, 1994; Nagraj 1994, 2000). In a seminar paper by Kannan and Raveendran (2009), they have argued that Indian manufacturing sector has been experiencing jobless growth.

2002; Gawtkin 2000; Desai and Alva1998). Desai and Alva (1998) agues the influences of maternal education on child health act as a proxy for mother's socioeconomic status. Educated mothers tend to come from wealthy households that reside in affluent areas with good schools, well developed medical infrastructure, and high levels of hygiene. Their education may be a proxy for the socioeconomic status of the households and the community. Hence, considering mother's education as a proxy for measuring the socioeconomic status the child immunization coverage has been analysed. The coverage rate indicates a gradient in which the coverage depends on the education level of the mothers. Coverage rate has been increased with children whose mothers had attended secondary school or higher. The coverage rate has been noted to be more than 40% higher than those whose mothers had not attended school (Pande and Yazbeck 2002). Similar findings have been shown by studies carried out by Sharma (2007) in 1980-2004 with only 28 % of children of non- literate mothers reported to be fully vaccinated as compared to 56 % of children whose mothers were educated to a level below high school and 74 % of mothers who had at least completed high school. Moreover, Desai and Alva (1998) in their study using the Demographic and Health Survey for 22 developing countries found out that maternal education continues to have a significant effect on the child's immunization status in about half of the country even after individual level and community level controls were introduced.

Furthermore, considering the fact that having a child immunized for the multiple vaccines requires active participation of both the parents in knowing and remembering the scheduled date of the immunization. Studies have shown that the active role that had been expected from the programme had been linked with higher levels of education attainment of both the parents. Children whose fathers have higher education level achieved the highest immunization score as compared children whose father have low educational level (Chowdhary et al. 2003).

Occupation of the parents played significant role as it sets the economic position of the parents depending on the nature of the jobs parents are engaged with and help to improve the financial stability of the family. Children whose fathers had salaried jobs were two and half times more likely to be immunized than those fathers who were daily wager (Chowdhary et al. 2003). Further, the influence of husbands' occupation

In this light, we examine the employment generation capacity of electronics industry (Table 2.13). From table 2.13, it is evident that employment in the electronics industry has increased steadily from 1980-81 to 1995-96 and started declining thereafter. We can observe that over three decades employment has grown from 1.09 lakh in 1980-81 to 1.92 lakh in 2010-11. Similarly, employment in consumer electronics has increased from, 0.59 lakhs in 1980-81 to 1.12 lakhs in 1996-97 and it started declining gradually to 0.11 lakhs in 2010-11. Electronics capital goods also show a similar trend of declining employment. But among the sub-product category, the electronics components showed an increasing trend over three decades. In general it is evident that employment started declining after 1996-97. We have also calculated employment elasticity using arc elasticity method in order to capture the changes in employment. Employment elasticity expresses the percentage change in employment growth for a percentage change in growth of output. For the pre- and post-reform periods as well as the combined period we have calculated the employment elasticities for electronics industry as a whole and for sub-product groups. It must, however, be noted that employment elasticities cannot be used or interpreted uncritically because some of them are meaningless and some of them are not useful (Kannan and Raveendran 2009). The figures of employment elasticity is very low for most of the years and negative for some years, indicating an increase in output leads to decrease in employment, which implies that output growth is rather driven by capital and technology.

In table 2.14, we have presented compound annual growth rates of employment. From the table it can be observed that there is barely any employment in the electronics industry as a whole and in sub-product categories. It recorded 0.01 per cent employment during 1980-90 and it further reduced to 0.004 per cent during 1990-97. During 1997-2011, employment growth in the electronics industry is negative (-0.003 per cent) and this trend exists for consumer electronics and electronic capital goods. The employment growth trends of electronics industry are similar to the manufacturing employment trends. As mentioned before, various scholars have argued that Indian manufacturing has been undergoing a phase of jobless growth.

is significant as wives of civil servants are around 1.7 times more likely to have their child immunized than women with husbands in any other occupation, among whom there is no statistically significant difference (Chowdhary et al. 2003).

Also, maternal employment for cash can significantly raise the standard of living in the household, expand the resources available to children and thus influence the health status. A mother' cash earnings are often seen critical to children's health care access. In urban Guinea, Cutts et al. (1990) concluded that mother's employment status determined whether a child who had begun the immunization series would complete it as the odds of children completing their vaccinations were higher for working mothers than non-working mothers. But however the effects of women's work varied significantly by occupation, with mothers working in the professional services and manufacturing sectors take longer to complete the immunization schedule than mothers working at home. As taking small children for immunization and treatment is usually the responsibility of the mothers, mothers work may impinge on the use of child health care services. Studies show that children whose mothers were working away from home more than 6 hours a day were less likely to be taken for immunization .Further, a study based on a survey of 75 working and 75 non-working women in a village in Tamil Nadu, India, showed maternal work status to have no significant effect on the chances of a child being immunized against measles (Sivakami 1997).

Household assets are also found to be a factor that influenced the inequities in the coverage by acting as a proxy of the household wealth index. A study that surveyed 8000 mothers in the Philippines on their use of immunization and other child care services found household assets to be important determinants of access to services (Becker et al.1993). In a study conducted by Strayhorn (2006) on the influenced of households assets and immunization found that children in urban households with piped (or pumped) water had three times the odds of having some immunizations and seven times the odds of full immunization relative to children in households that used an open-water source. Similarly, children in households with any toilet had approximately twice the odds of having partial or full immunization relative to those who had no toilet in both urban and rural areas.

Indirect cost evolved while accessing the services such as the costs of travel, loss of wages, and buying syringes deter the poorer parents in seeking immunization even if the services are provided free of cost to everyone by the government. Children from poorer households are more disadvantaged than richer suggests that immunization programme has direct implication with the economic status of the parents of the children. In Gwatkin and Bahl (2001) study based on household survey data collected through the Demographic and Health Surveys (DHS) of forty-two developing and transition countries that full immunization rates are considerably higher among the rich than among the poor virtually everywhere. On average, the rate is some 70-75% or 25-30 percent greater in the richest than in the poorest quintile of a country's population. Further it also revealed that there is a very wide range of differences among countries, with respect to both national averages and to poor-rich disparities within countries. Further, in a separate study carried out in a national representative sample show in Jamaica shows that belonging to less wealthy household reduces the odds of child immunization. Children in Jamaica who live in households in the second poorest quartile group are 45 percent less likely to be immunized than children who live in wealthiest quartile group (Dombkowski 2004).

Transportation cost and loss of wages which contribute to the factors for the wealth related inequities affect the coverage as parents from lower economic strata cannot bear the burden of losing their wages or can't afford the transportation cost for taking the child to the immunization camps. In, Uddin et al. (2010) as cited in Swiss TPH (2010) reports from Dhaka, Bangladesh, that with an extended timing a great opportunity for working women to vaccinate their children has increased as working mothers in the garment factory, could immunize their children at a time convenient to them, i.e. during their free time without loss of wages. However, studies have also shown contrary findings that there is regular movement between the town where the PHC is located and the village members of each household travelled unrelated to work needs on an average of 2 visits per week. So, transport costs could not be only a determining factor in the household decision to immunize the child, until coupled with other factors (Das and Das 2003).

1.3.3.3. Caste Based Inequities

Caste plays a major role in health related inequities in the Indian society. Like in the case of race, caste and class inequities go together. Invariably the lower castes are also the lower classes in India. Thus the distribution of health care access variables follows a similar trajectory across classes and caste groups (Giddins 2006; Duggal 2008).

Caste influences child health through differences in child care. It also indicates that belonging to a higher caste is associated with better child care practices. Since membership of a caste like ethnicity is a more rigid and permanent than class position, values, attitudes and expectations are more stable among the members of a given caste, despite variations in individual circumstances such as income. People from higher caste enjoy considerable initial advantages in many spheres including ensuring their children's health (Giddins 2006).

Caste based inequity that pervades in the Indian society is reflected in the child immunization programme. Findings of the studies conducted on the immunization coverage in the tribal areas of Andhra Pradesh have shown that the rural tribal areas which have been marked by features of poor health care facilities, geographically isolation and socio-cultural barriers have act as an obstruction in the access of the programme (Varma and Kusuma 2008). Further, Borooah (2004) shows in the study amongst 4000 children living in rural households in the sixteen major states of India found that the likelihood of being fully vaccinated varied according to whether which caste groups a child belongs to. The likelihood of boys and girls being fully vaccinated would fall by six and nine points, respectively, if they were SCs. In another study carried out by Munshi and Leusing (2000) in the nationally representative sample survey reflects a similar kind of findings of substantial differences in immunization coverage among the children of scheduled caste, scheduled tribes and other backward classes, though coverage is marginally low among scheduled tribes.

As part of Coverage Evaluation Survey (CES) (2009) for UIP, Singh and Yadav (2000) evaluated 19,000 children from Rajasthan, UP, MP, and NE States show that the coverage levels were the lowest among scheduled tribes followed by the

scheduled castes as compared to others. The findings echoed that of the national average in which scheduled tribes has the lowest coverage in the country.

Caste-based inequities have many triggering factors that make the inequities all the more institutionalized with the power struggle that interplay amongst the different groups. Streefland (1999) in his studies highlights the supply aspect of immunization programme which leads to inequities amongst various caste groups. In three multi-caste villages in Pauri Gharwal, the socioeconomic status of the health worker acts as a barrier to access the services as the vaccination sessions were organized at the house of the high caste. Scheduled caste women and their children were denied access to the house until the children of all the higher caste women had been vaccinated.

Another aspect of looking at the caste based inequities is the subordination and lack of bargaining power and representation of a sub group to represent their dissent and leading to resistance to the services of the programme. Jeffery and Jeffery (2011); AIIMS –INCLEN program evaluation network (2000) reports stereotyping of Muslims as 'anti-national intransigent' leading to low coverage of the pulse polio immunization programme in western UP. Greenough (1995) argues that the 'logic of resistance reflects wider social issues, including the fears of minorities about the agendas of the majority and a residue of resentment feeds into people's responses to other government health campaigns'. The result has shown to lower coverage of pulse polio immunization in UP, India amongst the Muslim.

With caste inequities aggravating with class inequities, the reason for low immunization amongst lower caste group had been linked to abject poverty. Although immunization services are offered free of charge and minimises direct economic constraints, the level of poverty still indirectly influences the service utilization. Indirect costs such as transport still need to be financed by parents. Findings have shown that not only did Dalit and Muslim parents have, relative to Hindus, a lower propensity to fully immunize their children; they also belong to the lower income quartile group and have a lower propensity to immunize the children (Borooah 2002).

Poverty also often invokes shame. Poor mothers avoid health services as they fear to be humiliated when their poverty becomes evident to the public. Mothers fear to be blamed as careless and avoid health services out of shame. As cited in Swiss TPH

(2010) *"some women avoid completing the full vaccine series because they become discouraged after their infant fails to show adequate growth, despite their best efforts. Rather than face another disappointment, sometimes accompanied by embarrassment and mild criticism, they avoid returning to the post".*

1.3.3.4. Health Services Inequities

The nature of health services influences the inequities in the way services are utilized. Factors such as geographic access, nature and distribution of services and quality of services provided, all have a direct linked to influence the utilization of the health services.

Geographical access in terms of physical access such as proximity to the health facilities, transport availability and distance travelled to reach the facility, determined the service access. In UIP, distance to the nearest facility providing immunization services are seen important since inaccessibility and distance are major deterrents to timely and full immunization. Also, the availability of health infrastructure in the village significantly influenced the immunization coverage. Many health facilities are unevenly distributed between the urban and rural areas in India which impacts the programme coverage. Findings from the study carried out by Datar et al. (2005) in the rural areas using the two rounds of NFHS data revealed that villages with larger and better-equipped facilities such as PHCs or hospitals have better vaccine coverage than those villages with a sub-centre or no facilities.

Infrastructure within the facilities such as staff density, medicines and vaccines availability have a strong linkage with the nature of the services provided. Greater availability of health workers is linked with better out-reach of the health care services. A study carried out Anand and Barnighausen (2004) show that health densities affect health outcomes independently of other determinants that includes maternal mortality, infant and U5 mortality. Also, the present of CHW and door-to-door canvassing strategies which these frontline workers were actively involved with for mobilizing the children has impacted to increase in the proportion of fully vaccinated children (Patel and Nowalk 2010).

Moreover, supply-side factors such as proper orientation received by mothers from female health workers and other providers on MCH services, and attitude and behaviour of the health providers towards the mothers have impacted the services utilization of the immunization programme. In Bangladesh, immunization coverage has increased where female health workers and female doctors give proper information to the mothers on the benefits of immunization (Uddin et al. 2010). Also, the experience which mothers undergo in MCH services like the antenatal care services directly influences immunization. Finding by Patra (2009) relates the quality of services mothers received during the antenatal care during pregnancy as positively associated with child vaccination. The chances of immunization are three times (unadjusted) or more than one and a half times (adjusted) higher for the children of mothers' with some antenatal care than the children of mothers with no antenatal care.

The set up in which the services are provided also influences the immunization services utilization. The facilities in the institute where women get the privacy with her child while receiving immunization, where they get counselled and can raise questions and clear doubts increases immunization service utilization (Swiss TPH 2010).

Also, the unreliable system of notification about the venue and time of vaccination also contributes to limiting accessibility of immunization programme. Women and caregivers report lack of knowledge of timings and appropriate information as a reason for not immunizing and dropping out. Many women were sent back and had to come more than once to vaccinate their child losing their day's wages and work (Uddin 2010). So, women who have an important productive role in the household often both paid and unpaid face time constraints to access services for their child.

1.3.3.5. Ethno-cultural Inequities

The belief systems of a particular culture act as a strong determining factor that influences the health of a particular group. The persistence of the beliefs is embedded in the local social context, wherein the understanding and interpretation of a particular disease has been established. According to Nichter (1995) cultural factors include '*not only perceptions but also perceptions of vulnerability and protection as well as the role which medicines play in producing and maintaining health*'. The belief system

that women have about the health of their children also influences the immunization service pattern. Other cultural components like language and understanding of a disease influence the health seeking behaviour which affects the health outcomes of an individual. Bernahel (2000) as cited in Swiss TPH (2010) confirms that language poses a problem as different naming of illness and treatment have been practiced when the same word has been used by providers of two different system of medicine while referring to same health conditions. Nichter (1995) documentation on the experience on child immunization has shown that women could not name the local illness which encompassed the vaccinable disease. Also, the mothers' belief system in other systems of medicine to treat vaccine preventable diseases have led to undermining the benefits of a vaccine Bisht (2000); Pool (2006) and Oluwadare (2009) as cited in Swiss TPH (2010)

1.3.3.6. Regional Inequities

People residing in rural areas continue to experience marked disparities in health care access and health outcomes. With the concentration of health facilities and resources in urban areas, the rural areas are marked with shortages that varied from human resources to facilities which extends even to other health related sectors like road and transportation. Pande and Yazbeck (2003) analyzed the data of NFHS 2 and found out a sobering picture of overall levels of immunization in rural and urban India, with worse overall performance in the rural compared to urban areas. The findings revealed that less than one-third of rural children and only a little over half of all urban children were fully immunized. Similarly, the findings of the rural-urban differentials have been found in an examination of the social and economic differentials between India, Uttar Pradesh and Uttrakhand conducted by Sharma (2007) based on the RCH survey data revealing lower coverage of each type of vaccine in rural as compared to urban areas.

Rural areas characterized with poor transport facilities and women spending a considerable amount of time in travelling to immunize their children have impacted the coverage. As per the CES (2009), in the States like Arunachal Pradesh, Manipur, Kerala, Meghalaya, Tamil Nadu and Sikkim, mothers had to travel more distance for around 5 kilometres and devote more time to travel to immunize their child. The problem highlighted from the national review of immunization programme in 1989

(Gupta and Murali 1989) till the recent CES (2009) conducted with the help of UNICEF show almost similar issues grapple both the side of the beneficiaries and the supply side after decades of intervention. On an average the distance travelled by a mother to reach the place of immunization was 2.2 kilometres and the average time taken was 18 minutes. Under such circumstances studies have proved that mothers opt out to not vaccinate the child or drop out from the services (Abdulraheem 2011).

Another feature that further contributes to inequities in child immunization in the rural areas is the supply side difficulty like improper vaccine storage system, poor cold chain system, irregular services in terms of organizing immunization camps and out-reach services. Mothers in the rural areas have been reported to have made repeated visits till their children were immunized besides travelling for hours to access the services. Reasons of vaccine shortage, absenteeism of the staff, mis-communication of the day of the out-reach programme and money needed in the process to immunize the children were highlighted by studies as a barriers in immunization coverage in rural areas (Nagdeva 2003; Uddin 2010).

Inequities by region and states have also affected the overall national coverage of the country. Studies carried out using data for over 4,000 children living in rural households drawn from the sixteen major states of India by Borooah(2004) demonstrated strong regional differences in the proportions of children who were fully vaccinated. Higher percentages of children were fully vaccinated in the more prosperous parts of India the West, the North and the South while, in the less prosperous parts the Centre and the East less than half the children were fully vaccinated.

In summary, Inequities in health persistent amongst the different groups of the society depending on their position in the society and are determined in terms of socio-economic status, caste, race, region and other socially determining factors. Depending on the position an individual occupies in the social ladder, their health status and health outcomes vary. These stratifiers that bring inequities in health are embedded in the society, and are socially determined and unfair. As the inequities are socially determined and are actionable, and therefore could be removed. The UIP, an important child health programme in India bear a reflection of the Indian society and follow differential coverage outcomes due to the influence of the social factors such as caste, class, region, education, income and other cultural determinants.

Among the birds found in this province were the vulture, eagle, crows, kites, owl and the paroquets. There was also a charming little bird called Bengali, with grey and red plumage mixed with white spots[124]. At Caushdee green parrots were found[125] and near hills pelicans resided[126]. Peacocks were also found in Narayangarh. The southern parts of Dacca were the home of many aquatic birds and reptiles unlike its northern part which was the habitat of mainly large species of carnivores. Among the birds found in the southern division was the tailor bird noted for its ingenuity in making its nest.[127] There were also varieties of sun bird one named the Durga Toontonee for being sacrificed at the time of the Durga Puja. The Cinnyridoe or Honey-suckers were kept in cages in houses.[128] The Green parrot, woodpecker, Heron, the Darter were also found in Dacca. The Purple Gallimule was destructive to the rice-fields. Pelicans that resided in marshes were captured as they attracted fishes in rivers towards it by the smell of the secretion from their skin.[129]

Even though Bengal saw large scale of peasantization in course of the sixteenth and the seventeenth century, the British surveys still point out that a large number of people made their living by hunting. Even farmers took to hunting in order to supplement their incomes. Among the animals hunted were the elephant and the rhinocerous. The wild buffalo was found in all parts of the district and hunted for their horns and skins which were sent to Dacca. 20 buffalo hides fetched 2 ½ -3 rupees.[130] Although the *Pahulwan* hunted these animals along with the elephants but a class of hunters called the *Kangri* engaged themselves in hunting the buffalo alone who get advances from merchants at Goalpara.[131] Poisoned arrows are used to hunt this animal.

Among acquatic animals porpoises were found in the Bramhaputra which were hunted by the *Gangrar* fishermen for their oil which they use for lighting lamps and

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[124] L. De Grandpre, *A Voyage in the Indian Ocean and To Bengal, 1789-1790.* vol ii,p-49.

[125] John Marshall, *Notes and Observations in Bengal, 1668-1672.* p-62

[126] Ibid. p-73.

[127] James Taylor, *A Sketch of the Topography and Statistics of Dacca, Calcutta*, 1840, p-27

[128] Ibid, p-28

[129] Ibid, p-31

[130] R. M. Martin, *The History, Antiquities, Topography and Statistics of Eastern India,* , vol. iii, p-577.

[131] Ibid. p-576-7

CHAPTER-2
METHODOLOGY

The chapter is divided into two sections. The first section outlines the conceptual framework of the study based on the literature reviewed in the above chapter. The second section describes the design of the study and gives an overview of the study area. To form the backdrop of the subsequent chapters a brief description of the state of Manipur and the selected two districts where the study was conducted has been given.

2. 1.Conceptual framework of the Study

The UIP is a key national health programme and a well-monitored public health intervention in India. The programme continues to occupy and remain as an important strategy of child health for more than two decades in India under the aegis of different maternal and child health programmes. It still continues to occupy a pivotal childhood disease prevention strategy under the National Rural Health Mission (NRHM) .Six core vaccines continues to be provided under the services of the programme free of cost in the public sector till the children reaches one year of age. The UIP has been implemented from the primary health care level to ensure an equitable distribution and outreach of the programme, and the services reached the door-steps of the people. It has been implemented with the objectives to reach each and every child in the country to protect and reduce the children from the six vaccine preventable diseases which the vaccines in the programme envisaged to protect.

However, several macro and micro level studies revealed that the UIP is riddled with problems of differential coverage and inequities in the programme output with the children from the poorest and the most disadvantaged marked with the lowest coverage outcome. After being a core national health programme and decades of its implementation, its failure to deliver the desired outcome indicated a phenomenon which could not be explained exclusively from the set-backs suffered by the health services delivery system. It marks larger social inequities that exist in the society.

Furthermore, with the introduction of the polio eradication campaign in 1988, the routine immunization took a downward turn under the UIP coverage (Bonu et al.2003). The dwindling of the routine immunization (RI) along with the fragmented nature of services provided under the UIP separately for polio and leaving aside other non-polio vaccine led to further inequity in the priorities settings within the programme that brought further set-backs in the programme coverage. The constraints faced by the UIP reiterated the challenges within the health systems rather than more of technical constraints that set different priorities and goals within the programme implemented in the already weak service system. Moreover, immunization service merely is not about creating equal opportunities to the people but it should address to bridge the gap that exit amongst different sections of the society.

Moreover, inequities in a society emerged depending on how each of the socially determined factors interplay and interlink within the health system to bring the inequities in the health outcomes. In every society, social structuring is carried out according to class, caste, gender, race, ethnicity, region, education and other factors. Depending on these factors a gradient in the health outcomes has been formed. Individuals in the higher level of the gradient enjoy better health status and outcomes as compared to individuals at the lower order of the gradient. The type and nature of health care a person received from the health service system depends on the position the person occupies in the social hierarchy. The differences in the experience are configured and produced by the society (Qadeer 1985) and is deep rooted within the society which impacts the health outcomes. Also, the health opportunities an individual received from the health services systems are shaped, designed and distributed based on the placement of the person within the hierarchies of power, prestige and access to resources (CSDH 2008). Individuals in the lower rung of social hierarchy therefore are affected the most due to the inequities in the distribution of the services. The UIP is not an exception.

Additionally with the growing empirical evidence indicating that in spite of the availability of immunization services free of cost at the primary health care level, its coverage and progress towards achieving its objectives remain slow and unevenly distributed in the coverage outcomes, suggesting a bottleneck in the health system to which the onus of providing an equitable services fall. Therefore, the disparities in the

UIP coverage outcome which is implemented in the premise of the health system act as a marker of the inequities in the existing health system. As 'health system are in itself a social determinant' (CSDH 2008), the implying poor coverage outcomes indicated not only merely technical health indicators but would not suffice without the analysis of these outcomes as a result of the social determinants that emerged from the larger social system. They are a product of the inequities in the health systems and have resulted from the 'societal risk conditions' rather than 'individual risk factors' that had emerged from the society. They are a good indicator of accessibility and outreach of the health care sector. The disparity in outcomes, if any, implies inequity which resulted from uneven distribution of 'infrastructure, human resources, finances, supplies and provisioning across different groups across the social gradient (CSDH 2008).

Manipur, an ethnically diverse state in the NER as per the national survey data and coverage evaluation report carried out in the country has shown poor coverage of the UIP. Yet, the national survey data shows that the state has achieved positive child health attainment in indicators such as IMR, nutritional status and good child health care practices and is on par with states which are considered as the best performing states in health in the country like Goa, Tamil Nadu and Kerala (IIPS 2007). An intricate factor intrinsic to the socio-cultural, political and environmental milieu of the Manipur society has played a crucial role in the way how different child health indicators have performed. Different indicators show different performance which could not be seen as a technical outcome but rather to be unravelled in the way the health system has been structured. As health systems are in itself a determinant of health and act as a site where the existing inequities in the society are translated that influence the health outcome.

The determinants of low child immunization coverage in the state of Manipur, a mere forty six percent and reported amongst the worse in the country, are embedded and intrinsic to the Manipur society that influences the health systems. Moreover, the high proportions of children who 'missed' the services coupled with high percentages of drop-outs between multi-doses vaccine and multiple vaccines in the programme indicated problems within the health systems that led to under-utilization of vaccination services (IIPS 2007).Therefore, understanding the health system, would

not only understand the health services provisioning system but would also help in understanding the other determinants of health viz social, economic, political and other determinants of health and mirror the larger picture of the society.

With the above background, this study will find out the reasons of low coverage and the issues engrained in the larger social system that impacted the UIP output in Manipur. Further, the study will set the backdrop of the determinants of health inequities that impacted the various child health outcomes through an analysis of the various child health indicators, which too is a product of the same social system.

2.2 Research Methodology.

2.2.1 Research questions

Some of the questions that are looked into in this study are:

- What is the state of child health in Manipur?
- What are the social determinants that cause inequities in the UIP coverage in Manipur?
- What are the health systems specific social determinants that cause inequities in the UIP coverage in Manipur?

Based on the research questions, the objectives that can be set forth for this study are:

2.2.2 Objectives of the Study

1. To compare the state of child health of Manipur with other national level child health indicators.
2. To find out the social determinants that causes inequities in the UIP coverage
    a. To find out the health systems specific social determinants that cause inequities in the UIP coverage

Natural hazards like droughts and floods in pre-industrial societies caused great havoc. The destruction of crops was the immediate effect of natural disasters which brought down the availability of food per capita and a rise in prices of basic commodities, often resulting in famines. While famines were due to a large measure dependent on natural factors the man made factor was also instrumental in determining the degree of such crisis. In Bengal where the seasonal inundations and rainfall determined the success of agriculture a shortfall in rain or a flood could cause disasters. Rajat Datta has argued that a destruction of the crops led to a subsistence crisis among the population as a shortage in the availability of food led to an escalation of food prices which made it difficult for the poor to procure food. 'in famine and dearth harvest failures were only proximate causes for trigering these events. Their real magnitude can be comprehended only by looking at them as severe dislocations in the food market caused by sharp rise in prices.'[142] The worst hit from such calamities were the harvest sensitive strata or the artisans and daily wage earners who did not practice agriculture. These artisans and labouerers in towns depended entirely on their wages. Food shortages caused price rise but their wages remained constant.[143] In the case of Bengal importation of food from surrounding districts was also impossible as 'the Bengal monsoon prevailing throughout the inland countries with which we have any communication, they are generally involved in the same calamity and instead of being able to afford assistance, depend upon us for the supplies of their own wants.'[144]

However, a description of a famine in the seventeenth century has been obtained from the diary of John Marshall one of the factors of the English East India Company. He gives an account of a famine in the year 1671 that started in Patna and reached Benaras

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and more 'enervated disposition' than those of other Provinces. While such attitudes have been cited as instances of Orientalism, Eaton mentions that the passages like the above from Abul Fazl points out that men like Orme had gathered their ideas regarding the Province from the already existing Mughal discourse and their attitudes regarding Bengal. Richard Eaton, *The Rise of Islam and the Bengal Frontier 1204-1760*, p-168-9.

[142] Rajat Datta, *Society, Economy and the Market,* p-256.

[143] Ibid., p-253-4.

[144] Minute of the Board of Revenue, dated 21st October 1791, cited Rajat Datta, *Society, Economy and the Market*, p-251

2. 2. 3 Locale for the Study

2.2.3.1 Manipur

The study was carried out in the state of Manipur. Manipur, a state in the NER has been reported as one of the worst performing states in India in UIP coverage. The state is reported to have a coverage of 46 percent and 6.5 percent of children completely 'missed' the services. According to the NFHS-3 data, the state's immunization coverage is slightly more than the national average of 43 percent. However, being one of the states amongst the high priority states under the NRHM and decades of the programme implementation the state's immunization coverage has failed to deliver the desired outputs.

2.2.3.2 Selection of Districts

The two districts namely Tameglong district and the Imphal West district were selected purposively based on the immunization coverage status performance of the entire state of Manipur. As per the DLHS-3 report, Tamenglong district was reported as the district with the lowest immunization with a mere coverage of 16.45 % and Imphal West as the highest immunization coverage district with 75% .The reason for the selection of the two districts were mainly to highlight the different facets of the health system that led to such startling divide in coverage outputs between the two districts.

2.2.3.3 Selection of Blocks

The study was carried out in one block each of the two selected districts viz. Tamenglong block of Tamenglong District and Wangoi block of Imphal West District. The selection criterion of the blocks was based on the recommendations of the officials of the respective NRHM's District Mission office of both the districts. The Tamenglong block was recommended to the researcher for accessibility factor as compare to the other three blocks of the district in Tamenglong while the Wangoi block was recommended in Imphal West as it was the 'most challenging' block in the entire district, reported with issues in programmatic implementation and high cross-vaccination as the fringes of the block borders other districts. Therefore, the study was carried out in these two blocks to find out the

synchronizing determinants that affected the UIP coverage and specific challenges of the two regions as well.

2.2.3.4. Selection of Villages

The villages that were selected in Tamenglong blocks were Dailong, Tharon, Akhui, Kahulong, Ramlalong, Nrenglong and Bamgaijang villages. In Imphal West, two villages were selected namely Laphupat Tera and Paubitek of the Wangoi block. The villages in Tamenglong are all rural but in Imphal West, Paubitek belongs to peri-urban while Laphupat Tera is rural. The villages were purposively selected based on the availability of unit of the study considering the fulfilment of a predetermined criterion of the study unit. Distance and logistics of reaching the villages like availability of transport, escort to guide the route till the villages and place of accommodation, were also taken into consideration in selecting the villages so as to maximise the research efficiency within the limited period of field work and the safety of the researcher.

2.2.3.5. Selection of the Unit of the Study

The study unit are the children born in the period of December 2009- November 2010 that were generated from the official government records from the CHC , Sub-centres, ASHA's diaries and other sources like the word of mouth. The reason for selecting the children from the period between December 2009 –November 2010 was as per the WHO's recommendation (WHO 2005) to take children aged 12-23 months for routine immunization coverage surveys if the final primary immunization is at 9 months of age, which is the Immunization schedule India follows. The age group of children born between the aforesaid time period falls in the category from the commencement of the field work in December'2012. Also, the criterion was set to narrow down the number of children that could be included in the study and considering the recall factor of the mothers on the state of the child's immunization status (Langsten and Hill 1998).

2.2.3.6 Sampling Techniques

Purposive sampling technique has been used in the study. Each level of respondents (mothers/caregivers, fathers, ANM/nurses, ASHAs/ AWWs and Programme Official staff to be interviewed was well –defined at the

conceptualization stage. Furthermore, the unit of the study was also defined and well-determined at the level of the conceptualization stage.

2.2.3.7 Participants of the Study

The participants of the study include the following list:

Type of Participants	**Participants in Imphal West**	**Participants in Tamenglong**	**Total No. of Participants**
Mothers /Care givers	30 Mothers	30 Mothers (*including 1 Grand Mother)	60
Fathers	2	3	5
ASHAs	2	4	6
AWWs	2	Nil	2
Block Health Programme Managers	1	3	4
District Immunization Officer(DIO)/ District Family Welfare Officer	1	1	2
District Programme Manager	1	1	2
Grand Total	39	42	**81**

2.2.4. Methods for Data Collection

Both primary and secondary data collection methods were used in the study. Four different sets of Interview schedules were administered during the primary data collection: Interview schedule for the mothers and immediate caregivers of the unit of the study, for the fathers, for the ASHAs /AWWs, for ANMs/ Nurses and Key informants (DIO, Programme Management staffs etc.).

Both qualitative and quantitative methods were employed to get data from the field for the primary data collection. Quantitative methods were mainly used to collect information on the socio-demographic profile of the children and their parents and the immunization coverage status of the six-basic vaccines under the UIP in India. While qualitative methods were administered particularly to have an in-depth understanding about the research topic.

The secondary data used for the comparison and analysis of child health of Manipur was taken from NFHS-3 and the two consecutive rounds of DLHS 2 and 3 of Manipur. From the aforesaid surveys, the data specific to child health indicators were purposively selected from NFHS-3 for comparing the state of child health of Manipur with the top three performing states of the country, and with other states in the NER. The data for comparison for child health indicators within the districts of Manipur were taken from the two consecutive rounds of DLHS 2 and 3 of Manipur. Other secondary data sources like the National Development Report (2001) and the Census 2011 data were taken to select specific development indices for analysis the relationship with the selective child health indicators of NFHS-3.

The reason behind selecting NFHS-3 was mainly because NFHS-3 covers a more exhaustive list of child health indicators and provides the information for the whole of the country, more pertinently data of all the states of the NER. NFHS-3, being the latest amongst all the three rounds of NFHS, and mainly because it provides data from the 29 states including Delhi was chosen over the earlier two rounds of NFHS. NFHS-1 covers only 24 states and National Capital Territory of Delhi (NCT), and NFHS-2 excludes Tripura. The NFHS-3 data highlights the recent status of child health outcome and programme coverage in child health and its

related indicators. Moreover, as the data were not taken with the objective to analyse and establish the progress of each child health outcomes from NFHS-1 through 3 but mainly to compare indicators amongst states and whole of NER on the state of child health. NFHS-2 was not taken up, as apart from an exhaustive list of child health indicators, the report of NFHS-2 did not analyse the data of Tripura due to delay in collection of NFHS-2 and is outdated. Furthermore, as the data of NFHS-1are comparatively restricted than NFHS-3 so the indicators in NFHS-3 was preferred. However, for the comparisons across the districts of Manipur the two consecutive rounds of DLHS-2 and 3 were used. A progress analysis on the data of the selective child health indicators for some of the indicators were carried out from the two consecutive rounds of DLHS 2 and 3.

The selection of specific child indicators was done purposively amongst all the child health indicators available in the survey data. As child health indictors have a wide range of measures, only few indicators were purposively chosen for analysis in this study. The data of Manipur is compared with the top-performing states of each of the child health indicators within the country and other states of NER, and also within the districts of Manipur for those selected indicators amongst the principal child health indicators. Though the comparability amongst the states and within the districts are methodological questionable as these states and districts has vast variations of demography, culture, and health systems. However, bearing in mind that the comparisons of indicators are designed only to highlight if there are any differentials that exist in output of health programme and health systems, even if undermining the methodological problem in the comparability of the states and the districts.

2.2.4.1. Primary data collection

The primary data were collected using the following tools:

- Structured interviews: Both closed and open ended Interview schedules were prepared as a tool for primary data collection in the field. The Interview schedule for the respondents who were the primary caregivers of the study population has two sub-sections. The first section comprises of closed ended questions to gather quantitative data on understanding various

socio-demographic and immunization profile of the study population. The second section comprises of open ended questions to gather the qualitative information about the research areas. Similarly, open ended questions were administered to the other sub-groups of respondents.

- Observations were an inherent part of the study. Observation often yielded valuable information on areas where insufficient data could not be collected through information. For instances, no respondents explicitly shared the inter-community tension between different ethnic or sub-tribe groups that influence the coverage of the programme. Observation carried out in such a situation was useful. Also, certain aspects of the study areas shared by the participants during the field work which was not directly related to the facets of the UIP but linked in understanding the dimensions of programme like history of how certain tribes' group started staying in certain specific location of the districts and how each sub-tribe groups are different were noted in the field diary of the Researcher. The method was applied throughout the field work to understand the different facets of the UIP.

2.2.4.2. Secondary Data Collection

The secondary were collected from the following sources:

- Reports: Government reports were used as a source for collecting data on the state and the districts. Census of India, Survey reports like NFHS, DLHS, Statistical Abstract of Manipur, Coverage evaluation report, Manipur State Development Reports, National Development Report and various other Government documents were used.

- Other Sources: Articles, Journals, Reports prepared by NGOs and various websites were also referred.

2.2.5. Operational Definitions of the Study

A few operational definitions of the present study are:

- Children: Falling between the age group of 12-23 months and were born between the period of December 2009 –November 2010

- Fully Immunized: A child is considered to 'fully immunized' when he/she receives the six core vaccines administered under the UIP in Manipur. It includes one dose of BCG, three doses each of DPT and OPV and measles vaccines.

- Partially Immunized: A child is considered to 'partially immunized' when he/she receives at least one of the dose of the six vaccines that is included in the six core vaccines under the UIP in Manipur.

- Missed: A child is considered to 'missed' the vaccines if he/she has not received any of the core six vaccines under the UIP in Manipur.

2.2.6 Data collection Process

2.2.6.1. Preparation of Tools

Tools were designed and developed based on the systematic review of literature available in the area of study, comprising of government documents and reports, survey data and other qualitative research and studies carried out in the area of the study.

Some of the important domains and sub-domains that have emerged as determinants that caused inequities in child immunization programme coverage and health at large from the literatures that were reviewed are listed below:

1. Gender related dimensions
    - Sex discrepancy in coverage in terms of birth order, sex composition of sibling and age specific immunization
    - Women's status in the society
2. SES related barriers
    - Occupation of the parents
    - Social/Ethnic status and position

- Accessibility to health services
- Mother's Work force participation
- Parental Education and of the Community

3. Process barriers
    - Past experience with health care facilities
    - Service barriers like time wastage, misinformation about the services

4. Cultural barriers
    - Health seeking behaviour and health beliefs
    - Perception of benefits, type and quality of care

5. Regional differences
    - Proximity to the Services
    - Availability of other Health related sectors like road and communization system.
    - Spatial distribution of health facilities

2.2.6.2. Time Spent on the Field

The field work was carried out for a period of two months starting from Mid-December to Mid –February. Initial few days were spent in the Capital city of Imphal taking permission to carry out the field work. The remaining period was spent in collecting the primary data from the participants of the study. The field work was carried out at stretch during this aforesaid period.

2.2.6.3. Method Adopted

A minimum of 30-40 minutes were spent with each of the respondent to carry out the interviews. Amongst those respondents who did not share a common dialect with the researcher more time was devoted to them. All the interviews and discussions were conducted widely in Meiteilon[3]but English and the sub-tribe

[3] Meiteilon –is the language which is widely spoken in the valley districts of Manipur. It is the state language and most people in all parts of the state of the Manipur speak the language

dialect of the specific Zeliangrong Naga Tribes were also used during the data collection. In Imphal West, Meiteilon is the local language and spoken widely by the people. However, in Tamenglong varied dialect of the sub-tribes of the Zeliangrong Naga tribes were used. Liangmei and Rongmei languages were used for those respondents who were not fluent in speaking Meiteilon .They replied in the local dialect. However, as most of the respondents understand Meiteilon, all the questions were posed in Meiteilon. The interviews and discussions were taken on records in the form of handwritten verbatim notes in English. A local person who spoke both the languages fluently act as a translator between the Researcher and the Respondents to make the handwritten verbatim in English and also for those respondents who replied in their own dialect other than Meiteilon. Proper precautions were taken up during the process of the interviews in order to ensure the questions were understood well and the meanings not diluted during the translation process.

2.2.7 Methods Used in Processing and Analyzing the Data

2.2.7.1. Data analysis

The qualitative data were analyzed separately for each of the respondent groups and then re-analyzed to sort out the similarities and differences in different aspects of the programme. The study adopted the grounded theory approach to develop an inductively derived explanation about the phenomena emerging from the primary data instead of forcing or testing an 'a priori', deductive model (Strauss and Corbin 1990). The data were then sorted in domains which emerged from the responses and views expressed by the respondents and were then coded. Further each of the domains was then further divided into sub-domains and a connection was established between them. From the connections that could be established within the sub-domains and an overall description with the underlying idea of the opinions and perceptions shared were presented in the form of narratives. In order to highlight the crux of the underlying themes that had emerged, the best quotes that fit in the particular themes are presented (Strauss and Corbin1990).

The quantitative data gathered were entered in the Microsoft Excel sheet after allocating specific codes to each of the information and with the help of SPSS 16.0 the frequency tables were generated .The socio-demographic profile of the parents

and study population, and the immunization status of the study population were quantified.

2.2.8 Problems Encountered in the Study

The researcher had to rely most of the times on people who were going for election campaign[4]for transportation in those villages where Public transport were not frequently available. This led to the selection of those villages where transportation was available in Tamenglong headquarter.

An escort was usually needed for her to cross the inter-village distance which she had to travel between two villages. Also, in the majority of the villages where the field work was carried out the researcher had to hold overnight and stay extra days after the data were collected due to unavailability of escort and transport. Due to the limited time frame she had to devote to each villages and time spent in travelling, the time spent on building rapport with the respondents was less.

2.2.9 Limitation of the Study

- Language was a limitation given that some of the mothers could not speak fluently in the same dialect with the researcher. Although a local person did the translation but translation has its own constraints, and sometimes may not convey the exact meaning as intended by the respondents of the study.
- Findings of the study cannot be generalised to a larger population, since the study was not representatives of the population and sampling process was non-random.

2.2.10 Ethical considerations

- Prior consent was taken verbally from the respondents of the study to take part in the study. The participants were also explained the aim and purpose of the study before the commencement of the interview.

[4] The field work was carried out one month before the State General Assembly Election of Manipur 2012.

- The participants were not comfortable with the idea of using voice recorders during the interview process .The Researcher dropped the prior plan of recording the interview schedule due to that.

- Some husbands did not want their wives to take part in the study. The decision was respected and the researcher did not involve those wives in the study.

2.3. Manipur: The State Profile

2.3.1. Manipur

Manipur is one of the states in the NE part of India, popularly known as the "seven sister states", though Sikkim has been included in the NE states since 2002, due to '*its proximity to the area, a similar developmental problems and convenience in implementing developmental projects'* (Haokip 2011).

2.3.1.1 .Location

The state of Manipur is surrounded by Nagaland on the north, Myanmar on the East, partly Mizoram and Chin Hills of Myanmar on the South and Cachar District of Assam in the West. The state is situated from 93°37, to 94°47' east longitudes and 23°50' North to 25° 40' North Latitudes. The total geographical area of the state is 22,327 sq. km, out of which the hilly area covers 90 per cent of the total area and the valley area comprises the remaining 10 per cent. The state constitutes only 0.68 per cent of the total area of the Indian Union and is one of the smallest states in the country. The valley districts of the state are surrounded by hill range from all the four-sides.

2.3.1.2. Administrative Division

Manipur is divided into nine districts, which is composed of five hill districts namely Chandel, Senapati, Churchanpur, Ukhrul and Tamenglong , and the four valley districts , which includes Imphal East , Imphal West, Thoubal and Bishnupur. For administrative purpose the state is further divided into 38 community development blocks, 33 towns and 2391 villages. Imphal city is the capital of the state.

2.3.1.3. Demography

According to the 2011 census, Manipur has a total population of 27,21,756 out of which 13,69,764 are males and 13,51,992 are females. The size of the population living in the urban area is 8,22,132 and that of living in the rural area is18, 99, 624. The population density of the state is 122 sq. Km. The most populous district in Manipur as per the 2011 census is Imphal West district with a population density of 992 sq.km and the least is the Tamenglong district with a population density of 32 sq. Km. The decadal growth rate of the state from 2001-2011 is 18.69.

The sex ratio of the state is 987 females per 1000 males. The lowest sex ratio is found in Chandel district with 932 females per 1000 males while the highest is in Imphal West with 1029 females per 1000 males. The sex ratio of urban Manipur is 1038 females per 1000 males while that of rural Manipur is 966 females per 1000 males.

2.3.1.4. Religion wise Composition

As per the 2001 census, more than half of the population in Manipur follows Hinduism with 57.56 percent, Christians constitutes 34.11 percent, Muslims 7.27, Sikhs 0.07, Jains 0.07 percent and Buddhist constitutes 0.04 percent.

2.3.1.5. Caste Composition

The caste composition of Manipur could be broadly classified into four categories: i) The General Meiteis, ii) the Scheduled Caste Meiteis, iii) the Kuki-ChinMizos and the Nagas, who are Scheduled tribes and iv) the OBCs Meiteis and Meitei Pangals[5]

The census data of 2001 in Annexure No. 1 shows the break-up of the percentage of STs and SCs of the state and the percentage of district wise bifurcation to the total population of Manipur. The Scheduled tribe population concentrated in the state is found mostly in hill districts with the highest concentration in Tamenglong and Ukhrul. The scheduled tribe population is 34.2

[5] Meitei Pangals: They are the Muslim population inhabited mostly in the valleys of Manipur. They are locally known as 'Meitei Pangal'

per cent of the total population of Manipur. While the scheduled Caste population is found mostly in the valley districts with the highest concentration in Thoubal and Imphal East districts. They contribute 2.8 percent of the Manipur's total population. According to 2001 census report, the total population of Meitei Pangals is recorded to be 1,90,939 persons out of state's total population of 22,93,896. It constitutes 8.32% of the total state population of Manipur.

2.3.1.6. Major Ethnic Group Composition

Manipur is comprised of numerous distinctive ethnic groups. The GOI recognized 29 tribal groups as STs, seven SCs, the Meiteis, the Meitei Pangals, and 'others' as separate population categories. However, the four broad categories are the Meiteis, the Kuki-Chin-Mizos, the Nagas and the Meitei Pangals.

The Meiteis are divided into seven saleis[6]: Ningthouja, Khoomon, Looan, Angom, Moirang, Ngangba and Chengloi. While the Meieti Pangals are the muslims of Manipur. Of the tribal groups, the Kuki-Chin-Mizos[7] sub-tribe includes the Anal, Aimol, Biete Chin, Chiru, Chothe, Gangte, Hmar, Khotlang, Kom, Koirao, Koireng, Khelma, Lamkang, Lushai, Paite, Poi, Purum, Simte, Sukte, Thadou, Vaiphei and Zou. Amongst the Nagas tribes of Manipur, the sub-tribes are namely Tangkhul, Mao and Maram, Zaliangrong and the Kabui. Further, the Zeliangrong Naga sub-tribe is combined with the Zeme[8], Liangmai[9], Rongmei and Puimei[10] sub-tribes. Each sub-tribe is further divided into sub-clans.

2.3.1.7. Language

There are 29 officially recognised languages in Manipur .Meiteilon which is officially known as 'Manipuri' is the most widely spoken language and the official

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6 Saleis are the clans

7 The Kuki, Chin, Mizo (Zo, Zomi) is commonly used as 'Kuki' which is an ethno-cultural entity term and covers other cognate tribes and clans.

8 Zemeis sub-tribe group of the Zalingrong Naga tribes

9 Liangmies sub-tribe group of Zaliangrong Naga tribes

10 Rongmei and Puimei are popularly known as the Kabui and the word Kabui is coined for the Naga sub-tribe group by the Meiteis of Manipur.

Table 3.7 : Tobit Estimates for Export Intensity of Electronic Consumer Goods

	Tobit Coefficients	Marginal Effects		Random Effects Tobit Model estimates
Variable Name (code)	Unconditional Expected Value	Probability Uncensored	Conditional on being uncensored	
	∂E(EXPIN)/∂Xk	P(EXPIN > 0)	E(EXPIN | EXPIN> 0)	
Age (age)	-0.000 (-0.55)	-0.001	-0.000	-0.001 (-0.55)
Firm Size (firmsize)	0.021*** (8.75)	0.067	0.032	0.088*** (10.31)
Advertisment (ads)	0.063** (1..49)	0.200	0.956	0.265(1.49)
RnD Intensity (rdi)	-.350 (-1.32)	-1.109	-0.529	-1.46 (-1.33)
Profit (pro)	-0.000 (-0.35)	-0.000	-0.000	-0.000 (-0.35)
Capital Intensity (capi)	0.0000 (0.57)	0.0001	0.000	0.000 (0.57)
Import Intensity (impin)	0.002 (1..31)	0.007	0.003	0.010 (1.31)
Non Linear Size(size2)	-2.73*** (-4.23)	-8.63	-4.12	-1.14*** (-4.35)
Tech Transfres/Patents (coldum)	-0.001 (-0.22)	-0.004	-0.002	-0.006 (-0.22)
ITA Dummy 1	0.003 (0.75)	0.011	0.005	0.15(0.75)
ITA dummy 2	0.000 (0.06)	0.000	0.000	0.001(0.06)
Constant				-0.313*** (-3.43)
No. of Observations				1739
Waldchi2(21)				143.67
Residual (sigma_u)				0.421
Residual (sigma_e)				0.214
Pseudo R2 (rho)				0.794
Prob>chi2				0.000

Note: Robust z statistics in parentheses
** indicates significance at 10%; **indicates significance at 5%; *** indicates significance at 1% level.*

The results of Tobit estimates of electronics capital goods (table 3.8) show that firm size and import intensity is found to be having significant impact on the export performance of the industry. Positive sign of coefficient shows positive relationship between size of the firm and export performance.

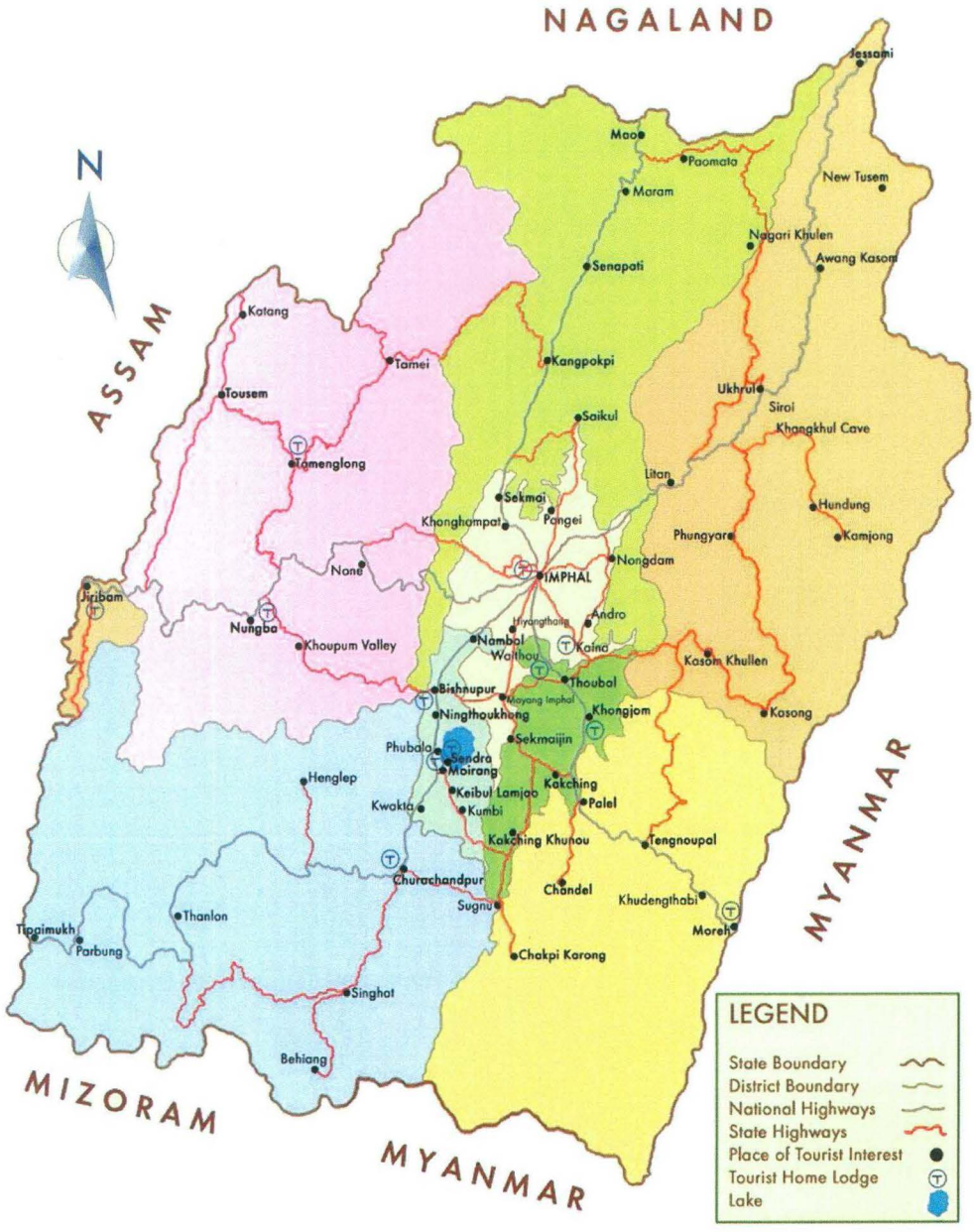
state language .Apart from Meiteilon , the other officially recognized languages are Aimol, Anal, Angami, Ao, Gangte, Hmar, Kabui, Koirao (Thangal), Koireng, Kom, Lamkang, Liangmei, Mao, Maram, Maring, Mizo (Lushei), Monsang, Paite, Purum, Ralte,Rongmei, Sema, Simte, Tangkhul, Thadou, Vaiphei, Zemei and Zou.

2.3.1.8. Education

The state's literacy rate as per 2011 census is 79.85 percent which is slighter more than the national average of 74.04 percent. The male literacy rate of the state is 86.49 percent as against the female literates of 73.17 percent in 2011. The state has more male literates than the national average of 82.14 percent. Moreover, the state also shows higher female literacy amongst females than the national average of 65.46 percent.

The district with the highest number of educated people as per the 2011 census is Imphal West with 80.71 literacy rates and the lowest is in Chandel district with 63.26 literacy rates.

MAP OF MANIPUR



Source: http://manipur.gov.in/images/Manipur-Map-copy.gif Retrieved on: 6/04/2012

2.3.1.9. Main Economy of Manipur

Manipur is predominantly an agricultural economy with paddy as the main crop. As per the 2001 census, 57 per cent of the people of Manipur are cultivators and agricultural labours. In the hilly districts the proportions of people depending on agriculture is as high as 76 per cent whereas for the valley districts, it was 43.2 per cent. Cottage industries also contribute to the economy of the state that includes weaving, handloom and handicrafts etc.

2.3.1.10. Labour Force Participation

Based on the census data of 2001, the total number of workers is 10,69,578, comprising 44.78 percent of the total population of the state. Out of total workers in Manipur 70.73 percent are main workers and 29.27 are marginal workers. 57 percent are engaged in agriculture activities that includes both cultivators and agricultural labours. The proportions of male workers are 48.97 percent out of which 9.08 percent are marginal workers while the proportions of female workers are 40.50 percent out of which a large proportion of women comprising of 42.67 are marginal workers.

2.3.1.11. Governance

The Manipur Panchayati Raj Act, 1994 was enacted under the guideline of the 73rd Constitutional Amendment Act, 1992 in Manipur. Even though the constitution envisaged a three-tier system of governance, however, in Manipur as per the act only a two tier system exists: the Gram Panchayat at the village level and the Zilla Parishad at the district level, and no provision of the Panchayati Samiti at the block level.

In the Urban areas of Manipur, the governing bodies were the Municipal Councils, Small Town Committees and Nagar Panchayats .While in the hill areas of the state, the local governing bodies are the village authority and the district council which was established by the Manipur Village Authority (Hill Areas) Act, 1956. However, in the tribal society the village is an 'important, social, economic and political unit' and the Tribal Chieftain who is a person of 'wisdom, integrity and knowledge' continues to occupy an important position till date even besides having the village authority in the village. In some villages, the Tribal Cheiftains or his immediate families are mostly the elected representative of the Village council since the enacted of the act. So, in the Tribal areas the Tribal Chieftains are usually looked up to and bonded with the rest of

the village through the kinship network and are very influential in the village (Oinam n.d.)

2.3.1.12. Women's Status

Women in Manipur enjoy considerable better status as compared to its women counterparts in the rest of the country due to a more egalitarian tribal culture prevalent in the NER and the absence of a rigid culture like dowry, purdah system etc. However, most of them are burdened with the tasks of households, agriculture and livestock but they enjoy considerable social, economic and political freedom. They enjoy greater mobility and visibility, and took active part in the economic sphere of the family. Women are engaged in various livelihood generation activities and trade. There are markets throughout the state known as the 'Ima Market'[11] where only women are exclusively involved in trade and commerce. The 'Meira paibis[12]' are the local women's groups who had a strong political influence and worked for a wide range of social issues mainly in the plain districts. Women in the hilly districts also take part actively in the socio-political activities like their plain counterparts but they take the form of women's organization and mother's groups that have a synonymous function like the Meirapaibis of the plain districts for ensuring women's greater role and participation in the socio-political affairs (Shimray 2004 and Meitei n.d.).

2.3.1.13. Health Infrastructure

The health infrastructure analysis of the state of Manipur in Annexure. No. 4 shows that most of the health infrastructures in Manipur are in position then the required position, in fact number of sub-centres, PHCs, ANMs, Doctors at PHC and Pharmacist are in excess then the required. However, shortfalls have been seen in the post of Health Assistants (Male), Health Assistants (Female) / LHV, Radiographers, Laboratory Technicians and Nurse Mid-wives. The number of CHCs are available as per the requirement and so are the Health Worker (Male) / MPW (M).A complete

[11] Mother's market. Every locality or a neighborhood in the state has a keithel (market) which are runned only by women.

[12] Female torch bearers groups. These groups of women are found and formed for every locality called as Leikai. (hamlet/village) .They looked after the affairs of the hamlet/village and actively takes part in the political and social activities. They are usually powerful and do many morale and social policing activities.

shortage has been marked for the post of surgeons, Obstetricians & Gynaecologists, Physicians, Paediatricians and Total specialists at the CHCs.

There are two medical colleges in Manipur, seven district hospitals, eight referral units, four city family welfare centre, forty two rural dispensaries, one Homeopathic hospital and nine Homeopathic dispensaries in the state.

2.3.1.14 Transport & Communications

Manipur being surrounded by high hill ranges is not connected by the railway lines both within as well as outside the state. The state is connected with the rest of the parts of the country by air and has a well-equipped airport facility. The state is served by three National highways, viz. NH.39, NH.53 and NH.150. The NH 39 passes through Imphal and Mao in Manipur, and Kohima and Dimapur in Nagaland. The highway (Dimapur to Imphal), also known as Dimapur–Imphal Road, further extends from Imphal to Moreh, then runs towards Tamu of Myanmar and is called Indo–Burma Road. Imphal is also connected with Silchar in Assam by National Highway.

2.3.1.15. Geographical distribution of Ethnic Groups

The Meiteis are found concentrated mostly in the four valley districts of the state namely Imphal West, Imphal East, Thoubal and Bishnupur with small proportions of other ethnic groups scattered in each of the four districts. However, the Meiteis are found dispersed in small proportions in all the other five districts of Manipur. Out of the four districts, the 'Meitei Pangals' are found concentrated in the three districts namely Imphal East, Thoubal and Bishnupur districts. Their concentrations in the hilly districts are very less as compared to the Meiteis or the other ethnic groups in Manipur. The tribe groups of the Kuki-Chin-Mizos and the Nagas are found concentrated mostly in the hilly districts. The geographical dispersal of the different tribes in the four hilly districts of the state are as follows: Ukhrul and Tamenglong districts are overwhelmingly dominated by the Nagas. The Churachandpur district is dominated mostly by the Kukis. Chandel and Senapati districts, both have the Nagas and Kukis constitute almost equally or little less with the other ethnic groups. None of the five hill districts are found exclusively inhabited by a particular tribe group. Many Kuki villages are in Ukhrul and Tamenglong district and so do the Naga villages in Churachandpur (Singh n.d; Oinam n.d. and Singh 2010).

2.3.1.16. Ethnic Conflicts and Inter –Community Relations

The state of Manipur has been riddled with ethnic conflicts and political turmoil. Tensions between the various groups: the Nagas armed conflict , the Kukis and the Nagas and the Meites and the Meitei Pangals , have continued in the state for decades affecting the communal relation of the state (Singh n.d. and Singh 2010).

The Naga armed conflict began in the 1950s and continued to have the most tremendous impact on Manipur. The demand of the formation of 'Nagalim' comprising of all Naga inhabited areas of Arunachal Pradesh, Assam, Manipur and some areas of Myanmar as the homeland of the Nagas have caused ethnic tension amongst those people who have been affected with the proposed boundary formation of 'Nagalim' (Singh 2010; Maring 2008).The proposed boundary of the new state 'Nagalim' would disturb more than half of the territory of the entire state of Manipur. Furthermore, Manipur being the originating place of the uprising the Naga armed conflicts and therefore suffered the most in terms of economic and political upheaval as compared to the other states (Singh n.d. and Singh 2010).

Another, ethnic clash that still continues to have its ramification in many domains of the lives of the people who were involved in the clash was the Kuki-Naga clash. It began around early 1990s and continued till the middle of the 1990s. The clash started with the Thadou[13] speaking Kukis but it effected and spread across the Kuki-Chin-Mizo group. The ramification of the clash was seen in the clash between the Kuki-Paite[14] in the Churachandpur state of Manipur in 1997-98. The effects of the clash even though were concentrated in a few districts but its impact spread across all the districts of the state. As Singh (2010) puts it *'the claim for exclusive ownership rights over the land and territory led to the class'* (Singh n.d.; Singh 2010).

Another, ethnic clash that did not affect much and the rivalry groups had started to develop a cordial relation was the Meitei and the Meitei-Meitei pangals in 1993. The exact origin of the clash is still uncertain. However, the widely held views of the clash are that of a tussle that emerged from supply of arms by the Meitei pangals to an armed groups of Manipur (Singh 2010).

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[13] The Thadou is amongst the most prominent tribe among the Kuki-Chin-Mizo group of tribes

[14] Paite: The Paites belongs to the Kuki-Chin sub-tribe group.

2.4. District Profile of Selected Two Districts of Manipur

A brief profile of the two districts that were part of the study is discussed below.

2.4.1 Imphal West

The Imphal West district is a small valley region at the centre of Manipur surrounded by plains of other districts. It is one of the four valley districts of Manipur.

2.4.1.1 Location and Area

Imphal West is situated at the centre and is surrounded by Senapati district on the north, on the east by Imphal East and Thoubal districts, on the south by Thoubal and Bishnupur districts, and on the west by Senapati and Bishnupur districts. The district is situated at from 93°45'to 94°14' east longitudes and 24°30' to 25° North Latitudes. The district covers an area of 519 square kilometers and has 134 villages and 11 towns as shown in Annexure No. 2.

2.4.1.2. Administrative Division

Imphal West is divided into two blocks namely Wangoi Block and Haorangsabal Block which is further divided into four administrative sub-divisions viz. Lamphelpat Sub-division, Patsoi Sub-division , Lamsang Sub-division and Wangoi Sub-division. Imphal City, the State Capital is the nodal functional centre of this district. There are 11 towns and 134 villages in Imphal West district (Government of Manipur 2007).

2.4.1.3. Demography

As per the census of 2011, Imphal West has a total population of 5,14,683 out of which 2,53,628 are males and 261055 are females. It is the most populous district of the state of Manipur with a population density of 992 in 2011. The decadal growth rate from 2001-11 is 15.82 and being the capital city of the state, the district is inhabited by people from various caste, tribal and ethnic groups. The demographic profile of the district shows that 74.48% of the total population belongs to the Meiteis, Manipuri Hindus who formed the majority community in Imphal West district.

The sex ratio of Imphal West district, as per 2011 census, stands at 1029 females per thousand males. The highest sex ratio in the state is found in this district and is much lesser than the state average of 987.

2.4.1.4. Ethnicity

The Census 2011 data shows the Meiteis including both the scheduled caste and the general are the majority ethnic group living in the district. The district, being the administrative and major centre of the trade and commerce, is inhabited by small proportions of all the 29 ethnic tribal population which contributes 4.75 percent of the total population amongst which the Zaliangrong Nagas holds 42 percent of the tribal population living in the district as per the 2001 census.

2.4.1.5. Education

The literacy rate in the district as per 2011 census is of 86.7 percent. The male literacy rate is 92.9 percent and female literacy rate is 80.7 percent. The highest number of literates in the state is found in this district. As per the 2011 census, the district has 395,731 literates (86.7 percent), of which 17.77 are below primary level, 28.45 percent are above primary level and 21.22 percent are at primary level. The percentage of literate population having educational attainment of matric/ higher secondary/ diploma are just 26.57 percent and the proportion of graduates and above is 4.42 percent.

2.4.1.6 Religion

According to 2001 Census data, majority of the population residing in Imphal West are followers of Hinduism. They comprise 74.48 percent of the total population of Imphal West. The Muslim population is 4.3% while Christians and others are 16.59 percent of the total population.

2.4.1.7 Language

Being the major centre for trade and commerce and the administrative city of the state, the district has a heterogeneous population with their own dialects. However,

Meiteilon is the most widely spoken language and is used as a lingua franca[15] among the various tribal and non-tribal communities in the state.

2.4.1.8. Occupation

According to the 1991 Census, 34% of the total population of the Imphal West district are workers .Out of the working population in the district about 39% of workers are in agricultural sectors and 61% in non-agricultural sectors. The main economy of the district are also contributed by the industrial sector with cottage industries like traditional handloom handicrafts and other traditional cottage and small scale industries contribute to the economy of the district.

2.4.1.9. Transport and Communication

The district is well–connected by a network of either *Pucca* or *Kutcha* roads. The roads in the district could be classified into national highways, State highways, major district roads, other district and inter village Roads. The Imphal Dimapur Road (NH No. 39) and Imphal New Cachar Road (NH No.53) are the two national highways which connect Imphal the capital of Manipur with neighbouring States of Assam and Nagaland. Also, the state's airport is situated in the Imphal West district.

2.4.1.10. Inter-Community Relations

The district is home to all the ethnic groups of the state and the group of people shared cordial relation and live in peace and harmony. The district in the past has not reported of being the place of origin of any ethnic clash. However, the district has strongly felt the ramification of any clash elsewhere in the other parts of the state. But being the headquarters of the state police force and the varied central forces deployed in the state, the district has been relatively peaceful (Singh 2010 and Oinam n.d.).

[15] Lingua franca : A lingua franca is a language systematically used to make communication possible between people not sharing a mother tongue

MAP OF IMPHAL WEST

Wangoi Block

Source: Accessed from:

http://www.teleologie.org/TO/troubles/dossiers/extreme_orient/inde/04_ind_7/04_IND_7.htm , Retrieved on: 25/05/2012

2.4.2. Tamenglong: A District Profile

Tamenglong is located along the western boundary of the state of Manipur and entirely composed of hills, ranges and narrow valleys.

2.4.2.1 Location and Area

Tamenglong, is located on the west of Manipur and is surrounded by the state Nagaland in the North, Churachandpur district in the South, Senapati district in the East and in the West by the state of Assam. It is situated between 24°30'N and 25°27'N latitudes and of 93°10'E and 94°54'E longitudes. It has a total area of 4, 391sq. km.

2.4.2.2. Administrative Division

Tamenglong District is divided into four sub-divisions for administrative reasons namely Tamenglong, Tamei, Tousem and Nungba. Tamenglong sub-division is the district headquarters. Each sub-division is similar with blocks. There are total 242 villages in the district which are all classified as rural and out of which only 121 villages are inhabited as shown in Annexure No. 3.

2.4.2.3 Demography

Tamenglong district is inhabited mostly by Zeliangrong Naga tribes. However, other minority tribes like the Kukis, Hmars, Chirus etc also are inhabited. The district has a population of 140,143 out of which 71, 762 are males and 68, 381 are females. The decadal growth rate of the district has decreased from 29.23 in 1991-01 and 25.69 in 2001-11. It is the least populated district of the state of Manipur and has a population density of 32 square km. The Tamenglong sub-division is the most populous block with a population of 37,189 and Tousem, the least populous with a population of 21, 805 as per the 2001 census data.

The sex ratio as per the 2011 census is 953 females per thousand males and is comparatively lower than the state average of 987.The sex-ratio is the district has increased from 922 in 2001 and 963 in 2011 census.

2.4.2.4. Ethnicity

The district is mainly inhabited by the Zeliangrong Nagas which comprises of sub-tribes that includes Rongmei, Liangmai, Zeme, and Puimei. The word 'Zeliangrong' is formed by the combination of the first three syllables of the three sub-tribes names

viz. Zeme, Liangmei and Rongmei and doesn't have the prefix of the cognant sub-tribe group Puimei. The word 'Zaliangrong' formed in 1947 with the idea to bring closer affinity and stronger unity of the Naga sub-tribes and are not register among the Schedule Tribes of India. However, the Zeme and Liangmai are officially known as the 'Kacha Naga' given by the British whereas the Rongmei and Puimei are popularly known as 'the Kabui', a name given by the Meiteis of Manipur. The other tribes that are found in the district are the Kukis which are found in certain pockets of the districts and other minority sub-tribes groups such as Hmars, Chirus and Khasis.

2.4.2.5. Language

All the ethnic groups in Tamenglong had their own dialect but the most populous sub-tribe i.e the Zeliangrong Nagas speak different languages but have a common root based on the language spoken by the Liangmais. The different dialects spoken by the Zeliangrong people are Liangmei language which is spoken by the Liangmei and the Zemei language which is spoken by the Zemei sub-tribes, Rongmei language spoken by the Rongmei sub-tribes and Poumie spoken by the Poumei sub-tribe. Most of the sub-tribe groups are not well-versed with each others' language.

2.4.2.6. Religion

Religion wise distribution of the district shows Christians comprises of 94.88 percent of the total population, the Hindus comprise 2.8 percent, Muslims with 1.28 percent and other religious groups with 0.97 percent as per the census data 2001.

2.4.2.7. Occupation

Agriculture is the main occupation of the people in Tamenglong. Both *jhum* and terrace cultivation are practiced. People are also engaged in other supplementary occupations like, animal rearing, weaving, farming domestication, carpentry work, wage labour and plantation of tea. Collecting forest products, hunting and fishing are also occupation which most people are engaged in Tamenglong.

2.4.2.8. Literacy Rate

The total number of literates in Tamenglong as per the 2011 census is 85,939 out of which 47, 928 are males and 38,011 are females. The Literacy rate of the district is

70.4% with the male population reported to have higher levels of literacy rate, 76.4% as compared to their female counterparts, 63.7%.

2.4.2.9. Transport and Communication

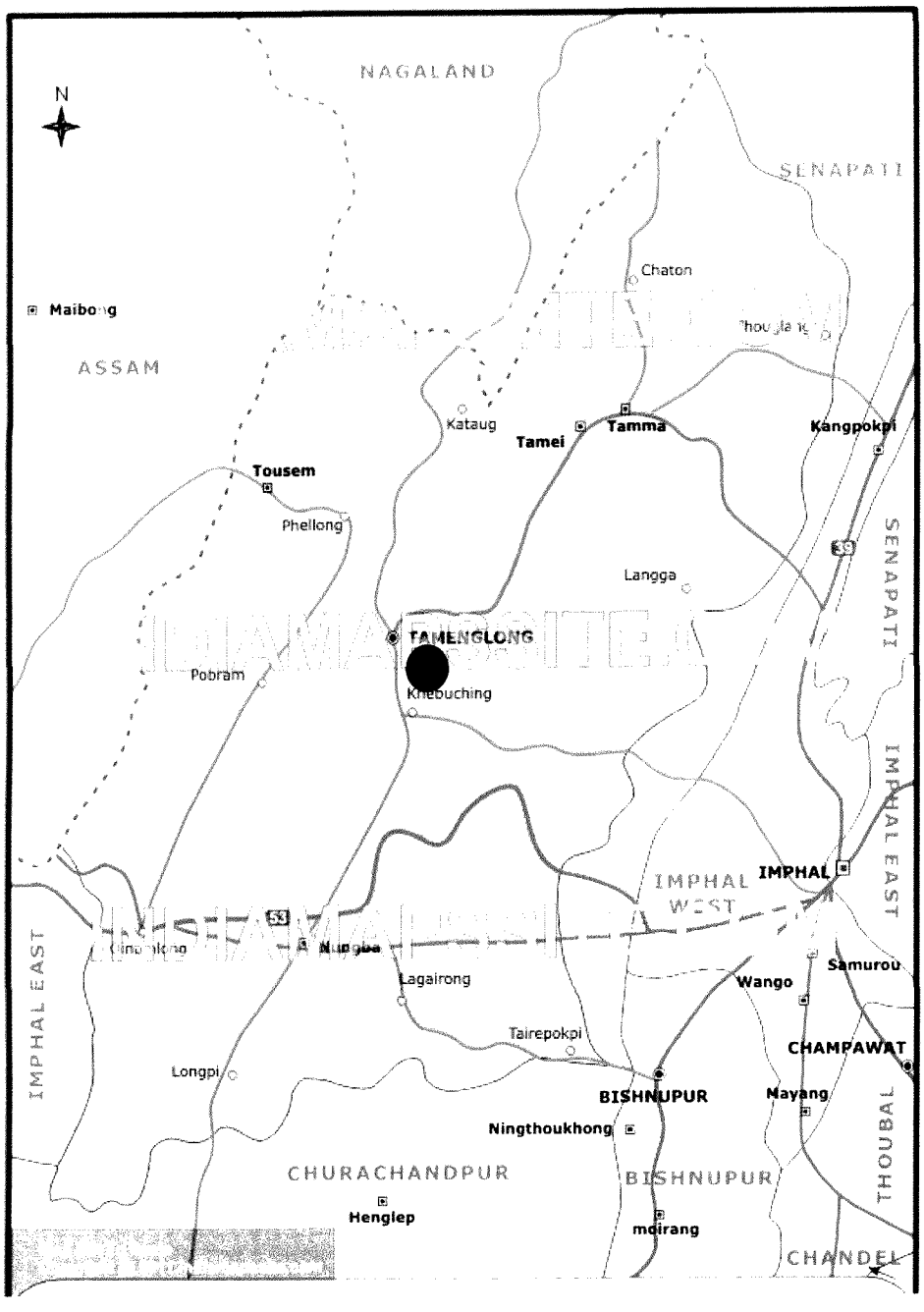
The road network in the district is poor with many of the regions not covered by any roads. 56.33 percent villages in the Nungba sub-division are not covered by any road whereas in Tamei sub-division 59.615 percent are without any road. NH-53 and three State Highways- IT Road, Old Chashar Road and Tamenglong Khongsang Road pass through the district. The NH-53 running between Imphal and Jiribam/ Silchar and Tamenglong- Khongsang Road are the only two roads which remain motorable round the year. The district has no railway connectivity and the nearest airport is in Imphal, the capital city, 153 km away. (GoI Ministry of Tribal Affairs n.d)

2.4.2.10. Inter-Community Relation

The ramification of the Kuki-Naga Clash of 1997-98 in Churachanpur district of Manipur with the Naga and Thadhou Kukis spread across all the five hilly districts of Manipur. Tamenglong district was equally affected. The clash that was seen in Tamenglong during this period was between the Zaliangrong Nagas and the Thadhouc Kukis (Singh n.d.).

Moreover, in the present scenario the sub-tribe groups that formed the Zelingrong Nagas which includes Zemies, Liangmeis, Rongmeis and Puimeis are fighting for the recognition of each sub-tribes as a separate entity .The clubbing of the sub-tribes in 1947 under a separate word 'Zelingrong Nagas' are not acceptable to a group of people who are leading the movement of the recognition of a separate identity of each of the sub-tribes groups like the Zemeis council, the Liangmeis council and the Rongmie councils. As far as the Puimei sub-tribe is concerned, as their prefix 'pui'is not included in the word 'Zaliangrong', hence their decision to leave the union of Zaliangrong. However, the separatists are not against using the word 'Zelingrong Nagas' as a social organization but identifying each of the sub-tribes as a tribe group that would implied losing one's identity. In addition, separate identity further implies more opportunity in terms of jobs and facilities from the Indian Government as well as the Naga people's organization. This has created a rift amongst the sub-tribe groups which slowly has started translating amongst all spheres of life (Gonmei 2009).

MAP OF TAMENGLONG



● Tamenglong block

Source: Accessed from: http://www.indiamapssite.com/manipur/roads/images/tamenglong-road-map.gif , Retrieved on: 25/05/201

CHAPTER-3

State of Child health of Manipur: A Comparison with National and District Level Indicators.

Child health measurement involves varied dimensions and had different meanings that encompasses the health of "infants, young children, older children, and /or adolescents' (CHILD 2002) and includes the needs of the 'distinct sub-groups, with different dependencies and health determinants, requiring different services, and needing different measures of health" (CHILD 2002). The health workgroup of First thing First in October 2007 based upon the definition of child health by the World Health Organization defined child health as *"a state of physical, mental, intellectual, social and emotional well-being and not merely the absence of disease or infirmity. Healthy children live in families, environments, and communities that provide them with the opportunity to reach their fullest developmental potential".*

The definition implied child health as an area which is varied and has a wide range of indicators as a measurement for it. The measurement includes a broad range of activities that ranges from 'development status and change, differential epidemiology, dependents on adults, and demographic patterns' (CHILD 2002). Few of the child health indicators have been chosen purposively in this chapter for analysis.

The aim of the chapter is to discuss the state of child health indicators of Manipur through the analysis of the national and district level survey data, highlighting the disparities if any in child health status and the coverage outcome of the child health programmes. The reference of the term 'child health' throughout the chapter are pertinent to the age -group specifically mentioned and defined in the methodology of the survey for collecting the data of each of the child health indicator and are not relevant to all the sub-groups of children until mentioned for.

The selected indicators have been divided into sub-sections to make the presentations easier. The first sub-section will analysed those indicators which demonstrate **the state of health** of children like respiratory infection, diarrhoea, nutritional status, IMR, anaemia prevalence and child's size at birth. The second sub-section will present those indicators that **pose risks on the health** of the children like

immunization status, antenatal care of mothers, diarrhoea management and stool disposal system. The next section will present the utilization of ICDS to see the impact of **health and related services**.

3.1 Child's health status and well-being

3.1.1 Prevalence of Anaemia

In India, the national program for prevention and control of anaemia focuses on young children less than 5 years (IIPS 2008). However, the NFHS data collected data from children aged 6-59 months on the prevalence of anaemia. Based on NFHS-3, Manipur has less than half (41 percent) of its children who are anaemic .It has the second least number of children (Table No. 3.1) with any form of anaemia in the country. Also, the number of children with severe and moderate anaemia is the lowest in Manipur and is lower than better performing states of India like Kerala. (Table No 3.2 and 3.3. Amongst the children who have mild anaemia (Table No 3.4), the proportion of children of Manipur were few percent more than the best performing states with minimum number of children with mild anaemia like Goa,19.5 percent, Punjab with 21.7 percent and Maharashtra with 21.9 percent. The state has 25.5 percent of mild anaemic children.

3.1.1.1 Comparison of. Manipur with top three performing states of India

The comparison of the nutritional status of the children of Manipur with the top three performing states of India is presented below.

Table No. 3.1 Any form of Anaemia

Ranking wise	States	Any Anaemia
1	Goa	38.2
2	Manipur	41.1
3	Mizoram	44.2
4	Kerala	44.5
All India		69.5

Source: NFHS-3

Table No 3.2 Severe Anaemia.

Ranking wise	States	Severe
1	Manipur	0.3
2	Kerala	0.5
3	Mizoram	0.6
4	Tripura	0.7
All India		2.9

Source: NFHS-3

Table No. 3.3 Moderate Anaemia.

Ranking wise	States	Moderate
1	Manipur	15.2
2	Goa	17.1
3	Mizoram	20.0
4	Kerala	20.5
	All India	40.2

Source: NFHS-3

Table No. 3.4 Mild Anaemia

Ranking wise	States	Mild
1	Goa	19.5
2	Punjab	21.7
3	Maharashtra	21.9
	Manipur	25.6
All India		26.3

Source: NFHS-3

3.1.1.2. Comparison of Manipur with other NE states of India

An analysis of Table No. 3.5 shows the prevalence of anaemia of Manipur with the rest of the NE states .Manipur has the least proportion of children with any form of anaemia followed by Mizoram, which has slightly larger proportions of children

than Manipur. The highest prevalence is found in Assam with 69 percent. Similarly, in the case of severe form of anaemia and moderate form of anaemia , Manipur has the least number of children amongst all the NE states .Amongst mild anaemic children in the region, Mizoram has the lowest prevalence followed by Manipur which has the second lowest number of children with mild anaemia.

Table No. 3.5 NE States of India in Prevalence of Anaemia.

States	Mild	Moderate	Severe	Any Anaemia
Arunachal Pradesh	27.1	29.1	0.8	56.9
Assam	28.7	38.7	2.2	69.6
Manipur	25.6	15.2	0.3	41.1
Meghalaya	31.7	31.7	1.0	64.4
Mizoram	23.5	20.0	0.6	44.2
Nagaland*				
Sikkim	28.9	29.5	0.8	59.2
Tripura	27.5	34.5	0.7	62.9
All India	26.3	40.2	2.9	69.5

*Excludes Nagaland, Source: NFHS-3

3.1.2. Infant Mortality Rate

The IMR[16] is an important child health indicator and considered as a highly sensitive population health measure (Reidpath and Allotey 2003).Manipur has the second lowest IMR in the country, which is as low as 29 and is almost half of the national average of 57. The state's IMR is on par with states which are considered to have better health indicators like Kerala and Goa, with reported lowest IMR in the country. The comparisons of Manipur with the top three performing states of the country reported with the lowest IMR and within the states of the NER are shown in the tables below:

[16] IMR is the number of deaths in children under 1 year of age per 1000 live births in the same year.

Table No. 3.6 IMR

Ranking wise	States	IMR
1	Kerala	15.3
	Goa	15.3
2	Manipur	29.7
3	Sikkim	33.7
All India		57

Source: NFHS-3

Amongst all the North-east states, Manipur has the lowest IMR with the highest IMR reported in Assam with 66.1 in the region. Sikkim and Mizoram also show a reportedly low IMR in the region.

Table No. 3.7 NE states of India in IMR

States	IMR
Arunachal Pradesh	60.7
Assam	66.1
Manipur	29.7
Meghalaya	44.6
Mizoram	34.1
Nagaland	38.3
Sikkim	33.7
Tripura	51.5
All India	57

Source: NFHS-3

3.1.3. Acute Respiratory Infection

ARI is one of the leading causes of childhood morbidity and mortality throughout the world (IIPS 2007). The NFHS-3 data collected symptoms of ARI from children under age five, in the two weeks preceding the survey in India .As per the data

collected, Manipur has three times of under five children with symptoms of ARI as compared to the states with the least proportion of children with ARI symptoms in the entire country. Table No. 3.7 shows that the percentage of children with ARI symptoms in Manipur is 3.7 percent. However, the prevalence of symptoms is less than the national average.

The state of Manipur and its comparison with the top three states in the country reported with the lowest ARI prevalence and with the states of the NER amongst under five children are given in the tables below. Also, the percentages of children suffered from ARI within the districts are also discussed.

Table No. 3.8 ARI symptoms amongst U5 children

Ranking wise	States	% children U5 with symptoms of ARI
1	Himachal Pradesh	1.3
2	Karnataka	1.7
3	Meghalaya	1.9
Manipur		4.7
All India		5.8

Source: NFHS-3

Table No. 3.9 NE States in prevalence of ARI symptoms amongst U5 children

States	% children U5 with symptoms of ARI
Arunachal Pradesh	6.7
Assam	7.3
Manipur	4.7
Meghalaya	1.9
Mizoram	4.1
Nagaland	4.2
Sikkim	5.0
Tripura	14.2
All India	5.8

Source: NFHS-3

In the NE states, the ARI symptom varies greatly. The lowest is reported in Meghalaya with 1.9 percent and highest in Tripura with 14.2.Manipur is the fourth highest ARI prevalent state in the NER of India.

The district level data of Manipur in Table no 3.10 shows a wide variation amongst the district with children suffering from ARI. The lowest percentage of children suffering from ARI is reported in hilly districts except Tamenglong as compared to the plain districts. The lowest is reported in Churachandpur district and the highest in Tamenglong district of Manipur.

Table No. 3.10 Children suffered from ARI in Manipur by District

Districts	Children suffered from ARI
Senapati	10.3
Tamenglong	21.9
Churachandpur	2.5
Bishnupur	12.1
Thuobal	13.5
Imphal East	11.1
Imphal West	10.5
Chandel	6.5
Ukhurl	4.8
Manipur	10.9*

*Represents figures for children of currently married women aged 15-44 years, Source: DLHS-3

3.1.4. Nutritional Status of Children

The nutritional status of the children of Manipur is compared with the top three performing states and other NE states of the country are discussed below.

Table No. 3.11 Least Number of Stunting Children

Ranking wise	States	Height for Age (Stunting)		
		%below - 3SD	% below- 2SD	Mean Z-Score
1	Kerala	6.5	24.5	-1.1
2	Goa	10.2	25.6	-1.1
3	Tamil Nadu	10.9	30.9	-1.1
Manipur		13.1	35.6	-1.4
All India		23.7	48.0	-1.9

Source: NFHS-3

Manipur has fairly lower number of children who are stunted (height for age), which includes both chronically malnourished and severely stunted children. It has slightly a few proportions more children who are both chronically malnourished and severely stunted than states like Tamil Nadu and Goa that are reported of having the least number of children who are stunted. Manipur's severely stunted children are nearly half of the national average with 13.1 percent, and that of chronically malnourished children is a few percent less than that of the national average.

As shown in Table No. 3.12, in the entire NER, Manipur has the lowest number of chronically malnourished and severely stunted children. The highest number of children who are stunted both chronically malnourished and severely stunted has been recorded in Meghalaya.

Table No 3.12 NE states of India on Stunting Amongst Children

States	Height for Age (Stunting)		
	%below - 3SD	% below- 2SD	Mean Z-Score
Arunachal Pradesh	21.7	43.3	-1.6
Assam	20.9	46.5	-1.8
Manipur	13.1	35.6	-1.4
Meghalaya	29.8	55.1	-2.0
Mizoram	17.7	39.8	-1.6
Nagaland*	19.3	38.8	-1.4
Sikkim	17.9	38.3	-1.4
Tripura	14.7	35.7	-1.4
All India	23.7	48.0	-1.9

Source: NFHS-3

Manipur has lowest number of children who are acutely malnourished and severely wasted. Manipur has three times the lesser number of children than the country's average amongst acutely malnourished children. Similarly, in case of severely wasted children Manipur has half the number of children than the national average. Also, the number of overweight children was lowest in Manipur, with states like Sikkim with the highest number of overweight children in the country with as many as four times the number of overweight children than Manipur.

Table No. 3.13 Least Number of Wasting Children

Ranking wise	Weight for Height (Wasting)								
	States	% below - 3SD	Mean Z-Score	States	% below - 2SD	Mean Z-Score	States	%below +2SD	Mean Z-Score
1	Punjab	2.1	-0.5	Manipur	9.0	-0.6	Sikkim	8.3	-0.4
	Manipur	2.1	-0.6	Mizoram	9.0	-0.3			
2	Sikkim	3.3	-0.1	Punjab	9.2	-0.5	Nagaland	4.7	-0.5
3	Mizoram	3.5	-0.3	Sikkim	9.7	-0.1	Mizoram	4.3	-0.3
							Manipur	2.2	-0.6
All India		0.4	1.0		9.8	1.0	1.0	6.4	-1.0

Source: NFHS-3

Table No. 3: 14 NE states India on Wasting amongst children.

States	Weight for Height (Wasting)			
	% below -3SD	% below -2SD	%below +2SD	Mean Z-Score
Arunachal Pradesh	6.1	15.3	3.4	-0.7
Assam	4.0	13.7	1.2	-0.8
Manipur	2.1	9.0	2.2	-0.6
Meghalaya	19.9	30.7	2.6	-1.2
Mizoram	3.5	9.0	4.3	-0.3
Nagaland*	5.2	13.3	4.7	-0.5
Sikkim	3.3	9.7	8.3	-0.1
Tripura	8.6	24.6	2.2	-1.2
All India	6.4	19.8	1.5	-1.0

Source: NFHS-3

The above table shows the number of children who are acutely malnourished and severely wasted in the entire NER. Manipur has least number of children who are severely wasted and acutely malnourished in the region. The percentage of children who were severely wasted is as low as 2.1 percent in Manipur with the highest found in Meghalaya. Similarly, the minimum number of children who are wasted was found in Manipur. However, the percentage of overweight children is found to be the third lowest in the entire region with 2.2 percent and states like

Sikkim, Nagaland, Mizoram and Arunachal Pradesh in the region have more overweight children.

Table No. 3.15 shows the percentage of underweight children. Manipur has the least number of children along with Kerala, who had severe underweight children in the country; which is four times less than the national average. Also, children who are underweight were found to be low in Manipur with states like Sikkim and Mizoram reporting the lowest number of underweight children than Manipur. Further, the numbers of children who were overweight children were found to be low in Manipur and states like Tamil Nadu and Goa, Sikkim and Haryana have doubled the number of overweight children as compared to Manipur.

Table No. 3.15. Least number of Underweight (weight for age) children.

Ranking Wise	Weight for Age (Underweight)	%below -3SD	Mean Z-Score	States	% below -2SD	Mean Z-Score	States	%below +2SD	Mean Z-score
1	Manipur	4.7	-1.2	Sikkim	19.7	-0.9	Tamil Nadu	1.9	-1.3
	Kerala	4.7	-1.2				Goa	1.9	-1.1
2	Sikkim	4.9	-0.9	Mizoram	19.9	-1.1	Sikkim	1.3	-0.9
3	Mizoram	5.4	-1.1	Manipur	22.1	-1.2	Haryana	1.0	-1.3
							Manipur	0.5	-1.2
								0.4	-1.8

Source: NFHS-3

Table No. 3: 16 NE states of India on number of underweight (weight for age) Children.

States	Weight for Age (underweight)			
	% below - 3SD	% below - 2SD	%below +2SD	Mean Z-Score
Arunachal Pradesh	11.1	32.5	0.6	-1.4
Assam	11.4	36.4	0.3	-1.6
Manipur	4.7	22.1	0.5	-1.2
Meghalaya	27.7	48.8	0.2	-2.0
Mizoram	5.4	19.9	1.2	-1.1
Nagaland	7.1	25.2	0.8	-1.2
Sikkim	4.9	19.7	1.3	-0.9
Tripura	15.7	39.6	0.1	-1.7
All India	15.8	42.5	0.4	-1.8

Source: NFHS-3

With the other NE states counterparts, Manipur has the lowest number of children who are severely underweight and had the third lowest number of children who were underweight in the entire region. However, amongst the overweight children, Manipur has more overweight children than Tripura, Meghalaya and Assam.

3.1.5. Child's size at birth by state

Birth weight is an important indicator of a child's vulnerability to the risk of various childhood illness and chances of survival (IIPS 2008). Manipur has much lower number of children with birth weight lower than 2.5 kilograms, the number of children who were born with 2.5 kgs or more weight is very high. The top-three ranked states with the highest percentage of children born with normal size and even more, belongs to the NER of the country

Table No. 3.17 Size of the Children at the Time of Birth

Ranking wise	**State**	**Percent distribution of births with a reported birth weight**	
		Less than 2.5 kg	2.5 kg or more
1	Mizoram	7.6	92.4
2	Sikkim	10.3	89.7
3	Nagaland	11	89.0
Manipur		13.1	86.9
All India		21.5	78.5

Source: NFHS-3

The percentage birth weights of children vary considerably across states in the northeast from as low of 72.7 percent in Tripura, to a highest of 92 per cent in Mizoram. Manipur has least number of children who were born underweight than Arunachal Pradesh, Assam, Meghalaya and Tripura in the region.

up to within a few miles of Dacca, the seat of the Mughal Viceroy of Bengal. So a check on their piratical activities became necessary.

Another reason, for Shah Jahan's orders for the seizure of Hughli, was that unlike Jahangir with whom the Portuguese were on cordial terms, ShahJahan as a rebel Prince taking refuge in Bengal had sought the assistance of some of the Portuguese captains but the latter had refused to him help on account of his being a rebel. Moreover the Portuguese had not sent him the customary presents upon his accession as the ruler[243]. Large custom dues were paid to the Mughal by Hooghly but it used to sell a quantity of gunpowder and arms to the Portuguese mercenaries at Dianga, who raided Bengal with the support of the King of Arakan.

But over the question of the possession of Sandwip, the Portuguese embittered their relations not only with the Mughals but also with the king of Arakan[244]. In 1590, Antonio De souza Godinho captured Sandwip and made Chittagong tributary to it. The King of Arakan was enraged at the Portuguese capture of Sandwip. By 1602 the Portuguese established complete control over the island of Sandwip.

But the island was coveted by the Mughals as well who had obtained it from Kedar Rai of Sripur. Sandwip, located at the mouth of the Ganges, in the district of Noakhali was coveted by all as it supplied salt to the whole of Bengal. Here annually 200 ships were laden with salt to be traded throughout Bengal. The Portuguese who had for long an eye over this island finally captured it in 1602 under Carvalho. But the natives of the island rose against the Portuguese whereupon Manuel de Mattos governor of Portuguese at Dianga came at the assistance of Carvalho.

The king of Arakan deeply resented the capture of Sandwip by the Portuguese. He allied with Kedar Rai, the raja of Sripur to whom the island had belonged originally and decided to attack the Portuguese. The King of Arakan prepared a fleet of 150 *jaleas*, *caturs*, and other larger vessels well equipped and armed with guns and cannons. Kedar

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[243] Ibid, p-180.

[244] See J.J.A. Campos, ' Portuguese settlements in Eastern Bengal,' in *History of the Portuguese*, pp-66-80.

Table No. 3.18. NE states of India on the Size of the Children at the Time of Birth

State	Percent distribution of births with a reported birth weight1	
	Less than 2.5 kg	2.5 kg or more
Arunachal Pradesh	14.1	85.9
Assam	19.4	80.6
Manipur	13.1	86.9
Meghalaya	18.0	82.0
Mizoram	7.6	92.0
Nagaland	11.0	89.0
Sikkim	10.3	89.7
Tripura	27.3	72.7
All India	21.5	78.5

Source: NFHS-3

3.1.6 An Overview of the State of Child's Health in Manipur

Positive child health outcomes in the state has been seen with any form of anaemia, nutritional status like stunting, wasting, children born less than 2.5 kgs and low IMR, signifying good child health achievement in areas that do not need direct health services and interventions, but rather more of a product of deep-rooted socio-cultural and environmental determinants. The only set of data with poor child health outcomes in the above section have been seen in ARI prevalence in the state as higher ARI prevalence indicated the presence of other factors related to barriers in health services more than just the environmental determinants.

From the data on the above sub-section we found a peculiar trend in the outcome of the child health measures, indicative of some specific child health measures having profound positive outcome in Manipur and within the districts in comparison with the others. As the best child health indicators of Manipur are

amongst those indicators that do not involve strong child health service provisioning system and were rather more related to environmental and socio-cultural determinants, these findings marked a phenomenon that needs to be studied and further explored. However, large gaps empirical studies carried out limited the analysis of the good child achievements found in Manipur.

Nevertheless, with the limited scope of this study and the absence of research and literature in the area those factors that had influenced the positive attainment of these child health indicators like nutritional status, anaemia prevalence and children born with 2.5 Kgs and more birth weight could not be argued with scientific rigour from the wide gamut of environment and socio-cultural aspects of the state. Though a study carried out by Singh at the International Institute for Population Sciences in Mumbai who studied the weight of 2,469 children aged under three in Manipur and six other north-eastern states revealed that infant girls weighed more than boys of the same age. The advantage in terms of weight which the children of Manipur enjoyed in a country where girls' are discriminated lies in the social status of the mothers. The findings explained that the "*possible reasons for the well-being of the female child in the north-east could be late age at marriage of the mother, lesser number of children, good traditional feeding practices and greater literacy*". Likewise, on a similar line with the findings of the above study , factors such as the pattern of food habits intake of the children and the mothers, cultural food practices of feeding the child with the food cooked for the entire family in addition to breast milk and supplementary cereals, are some crucial factors that needs further exploration in bringing positive impact amongst the indicators like anaemia, nutritional status and size of children at birth, while simultaneously also acknowledging the complimentary role of other social determinants in bringing about the desired achievement in these indicators.

However, lower IMR in Manipur could have its explanation rooted in low anaemia prevalence, positive nutritional status of mothers, good breast feeding practices, and successfully long, culturally accepted practice of effective traditional birth delivery mechanism, and the better status of the women in the state as compared to

other women counterparts in the country. The state ranks 3rd in GDI and 9th in HDI in the year 1991as per the National Development Report 2001 developed by the Planning Commission of India on the same framework of UNDP's human development framework. Further, the high proportions of children who were born with 2.5 kgs and more at the time of birth in Manipur denoted good maternal health conditions and status of women in Manipur. As per the NFHS-3 data, Manipur has the second least number of women between the age group of 15-49 years with any form of anaemia and severe anaemia. Also, it has third lowest proportions of women with mild anaemia and lowest in moderate anaemia between the age group of 15-49 years. Also, the nutritional status of the women in the state also fairs well with the state reporting high percentages of women who are normal, 72 percent and a low percentage of totally thin women, 14.8 percent. The National Human Development Report (2001) credits women's empowerment, which is a concomitant of the unique socio-cultural context, for the impressive health attainments of the state.

To sum up, the possible explanation of Manipur's achievement could be explained in its high gender development and human development indices than the rest of the states in the region and the country. Also, determinants like the ethos and culture intrinsic to the society have a direct impact on the health of the population. Determinants that influences the health status and outcomes like food habits, health beliefs, health seeking behaviour, health resources and other factors that translates in good health status and outcomes of the people remained embedded in the society (Bose and Desai 1983).

Manipur, being a casteless society due to the absence of a feudal system, a nature based and self-subtenant lifestyles do not have a rigid social stratification system on account of which no particular class or the section of the society falls under any stratum. Moreover, the Manipur society with a more egalitarian set up wherein the kith and kin or the tribesman ensure that the most vulnerable are protected and people of the society take equal part in all social spheres of life. Under such a structure characterised with the absence of a very strong hierarchical society and

with societies existing as an isolated phenomena the health care needs gets transfer to the layer of the prevailing social structure .Manipur as a state has been able to attain a positive child health outcomes due to the existing socio-economic and political milieu of the state (Government of Manipur 2012; Bose and Desai 1983).

3.2. Determinants of Risk Posing Factors in Child Health

3.2.1 Immunization status as an indicator

The immunization status of the child is compiled from the number of children aged 12-23 months, who had fully accepted the services of the six major vaccines[17] included in the UIP.

The data reflected, Manipur as one of the states in India with highest percentage of children who are left out in the vaccination program and also amongst the state with lowest coverage rate in the country. The percentage of fully vaccinated children were little more than the national average of the country. However, the percentages of children who had not received any vaccines is higher than the national average with 6.5 percent. The states with highest immunization coverage rates in the country like Tamil Nadu, Goa and Kerala have twice the number of fully vaccinated children than Manipur.

When compared with states from other NER of India (Table No. 3.19), Manipur stands third with the highest number of children with 'full vaccination' status and Arunachal Pradesh, with the least number of children with full immunization, amounting to as low as 28.3 percent. Also, the number of children with the highest percent of children with no immunization was reported in Arunachal Pradesh. Manipur stands a fair prospect as compared with its other NE counterparts. However, Sikkim has the highest number of fully vaccinated children as well as has the least number of children with no immunization.

[17] Six major vaccines includes the vaccines namely one dose of BCG, three doses of OPV and DPT and one dose of measles. Hepatitis B is also part of the RI in Manipur but not in all districts of Manipur.

Table No 3.19. Child Immunization Coverage

Ranking wise	States	All basic Immunization (in percent)	No Vaccination (in percent)
1	Tamil Nadu	80.9	0.0
2	Goa	78.6	0.0
3	Kerala	75.3	1.8
Manipur		46.8	6.5
All India		43.5	5.1

Source: NFHS-3

Table No 3.20 NE states of India on Child Immunization Coverage

States	All basic vaccination	No vaccination
Arunachal Pradesh	28.4	24.1
Assam	31.4	15.2
Manipur	46.8	6.5
Meghalaya	32.9	16.5
Mizoram	46.5	7.0
Nagaland	21.0	18.4
Sikkim	69.6	3.2
Tripura	49.7	14.7
All India	43.5	5.1

Source: NFHS-3

An analysis of the data (Table No 3.21) in the district level shows that from DLHS-2 to 3, immunization coverage has increased in majority of the districts from DLHS-2 to 3 but some districts has marked a decline in the full immunization coverage. High inter-district variations have been observed, Tamenglong 16.8

	FWHM (arcminutes)	Noise variance (σ_0) (μK)
V-band	21.0	3137
W-band	13.3	6549

TABLE 5.1: WMAP V-band and W-band specifications from LAMBDA site.

The measured CMB temperature anisotropy map can be expressed through the following mathematical expression,

$$T^{Measured}(\hat{n}) = \int d\hat{n}' \left[T^{CMB}(\hat{n}') + T^{Frgnd}(\hat{n}')\right] B(\hat{n}', \hat{n}) + N(\hat{n}), \tag{5.1}$$

where $B(\hat{n}', \hat{n})$ represents the instrument beam function. Assuming the beam function to be circularly symmetric [i.e. $B(\hat{n}', \hat{n}) = B(\hat{n}' \cdot \hat{n})$] , the above equation can be expressed in its equivalent harmonic space expression,

$$a_{lm}^{Measured} = a_{lm}^{CMB} b_l + f_{lm} b_l + n_{lm}, \tag{5.2}$$

where $a_{lm}^{Measured}$, a_{lm}^{CMB}, f_{lm} and n_{lm} are the expansion coefficients in the spherical harmonic basis of the respective fields and b_l is the expansion coefficient of the circularly symmetric beam function in the Legendre polynomial basis.

To simulate CMB skies which resemble the the actual measured maps, we begin by first simulating isotropic CMB skies. These CMB realizations are generated using HEALPix using the best fit CMB temperature anisotropy angular power spectrum as input. The best fit spectrum is obtain by using CAMB, with the best fit cosmological parameters derived from WMAP measurements, as input.

The isotropic CMB realization are then beam smoothed using the averaged beam transfer function, depicted by the solid black curve in Fig. 5.1, to match the resolution of the respective observed maps. Note that Gaussian beam transfer function cannot be used for beam convolution, since the Gaussian approximation to the beams is not good as can be seen from Fig. 5.1

percent to Bishnupur. 63 percent as per DLHS-3.All the hilly tribal districts viz. Tamenglong, Churchanpur, Ukrul, Chandel and Senapati in Manipur have the lowest coverage rate as compared to the plain districts in the state. The lowest is reported in Tamenglong, 16.8 percent and the highest in Imphal West, 75 percent. Some districts have shown an increased such as Chandel from 1.3 percent to 40 percent; Ukhurl from11. 2 percent to 36.2 percent in the coverage rate from DLHS-2 to 3 and some have observed a decline like Tamenglong from 33 to 16.8 percent, Churachanpur from 29 to 28.2 percent.

Table No 3.21 Immunization coverage of Manipur by district

District	All basic vaccination		No vaccination	
	DLHS-2	DLHS-3	DLHS-2	DLHS-3
Senapati	5.4	50.8	8.2	4.3
Tamenglong	33.7	16.8	43.2	29.6
Churachandpur	29.0	28.2	3.5	27.4
Bishnupur	52.6	63.4	9.0	4.3
Thuobal	12.8	60.5	0.7	5.9
Imphal West	52.0	75.0	5.9	1.2
Imphal Eest	50.7	47.2	9.9	7.0
Chandel	1.3	40.2	17.9	14.0
Ukhrul	11.2	36.2	26.3	11.2
Manipur	34.4	47.4	9.6	10.8

Source: DLHS-2 and 3

3.2.2. Women who knows about ORS Packet

Diarrhoea management strategies have encouraged women to increase their fluid intake of the children in order to reduce the risk of dehydration and minimize the adverse results of the child due to diarrhoea. According to UNICEF (2009), diarrhoea can be managed at home by providing children with an increased amount of fluids, or ORT, and a continuation of usual feeding. Mothers of under five years of age who had the knowledge of ORS packets is high in Manipur with 84.4

percent. However, women from states like Mizoram and Delhi shows a high level of knowledge of ORS packet amongst the women.

Table No 3.22.Highest number of Women who know about ORS packet.

Ranking wise	State	% of women who know about ORS packet
1.	Mizoram	96.2
2	Delhi	95.3
3	Kerala	90.3
Manipur		84.4
All India		73.0

Source: NFHS-3

The knowledge of ORS packet is good in the entire NER and it is the nearly universal in Mizoram, 96.2. However, Manipur stands fourth in the region with the highest percentage of women who knows about ORS as shown in Table No. 3.23.

Table No.3.23 NE states of India on knowledge of ORS packet

State	% of women who know about ORS packet
Arunachal Pradesh	69.5
Assam	78.1
Manipur	84.4
Meghalaya	74.7
Mizoram	96.2
Nagaland	52.6
Sikkim	88.9
Tripura	89.1
All India	73.0

Source: NFHS-3

Table 3.24 Knowledge of Women about ORS by District in Manipur

District	% of women who know about ORS
Senapati	40.0
Tamenglong	22.9
Churachandpur	41.2
Bishnupur	62.4
Thuobal	54.3
Imphal East	57
Imphal West	72.5
Chandel	42.7
Ukhurl	31.4
Manipur	48.2*

*Represents figures for children of currently married women aged 15-44 years, Source: DLHS-3

Wide inter-district variations in the knowledge of ORS amongst the women have been observed in Manipur. It ranges as high as 72.5 percent in Imphal west and as long as 22.9 percent in Tamenglong district in Manipur.

3.2.3..Disposal of Children's Stools

Unsafe disposal of human faeces spreads disease either by direct contact or through animal transmission. Hence, the proper disposal of children's stools is extremely important in preventing the spread of diseases. Table No.3.25 presents the information on the disposal of stools of children under five years of age. The percentages of children whose stool are safely disposed of are low in Manipur, 39.9 percent. It is little less than half of the top-three states with the highest percentage of children whose stools were safely disposed of in the country.

Table No. 3.25. Highest Attainment of practice of Safe Disposals of Stools

Ranking wise	**State**	**% of children whose stool are safely disposed of safely**
1	Kerala	73.7
2	Mizoram	67.2
3	Delhi	61.8
Manipur		39.8
All India		21.1

Source: NFHS-3

The practice of stool disposal in open places has been quite low in Manipur. It is the second lowest state in India, wherein the children's stools are not left in open places, after Mizoram. The country's average is fourth times more that of Manipur when it comes to leaving stool of children in open places.

Table No 3.26 shows the combined percentages in which stools are disposed of in the NER. In the region, Mizoram has good practice for stool disposal system with merely 2.2 percentage of children's stool left in open places. However, Manipur stands second in the region with a couple of percentages more that Mizoram. But the percentage in Manipur was found to be much lower than its counterparts like Meghalaya, Nagaland, Sikkim, Tripura, Arunachal Pradesh and Assam. While the best practice of safe disposal of stools was found to be highest in Sikkim, with 73.5

while it is 39.8 in Manipur. Manipur fairs better than states like Arunachal Pradesh, Assam, Meghalaya and Tripura.

Table No. 3.26. Lowest in the leaving Children's Stools left in open

Ranking wise	State	Manner of disposal of child's stools left in open
1	Mizoram	8.3
2	Manipur	10.9
3	Delhi	17.2
All India		44

Source: NFHS-3

Table No 3.27. NE states of India on manner of disposal of Children's stool.

State	Manner of disposal of child's stools (Left in open)	% of children whose stool are safely disposed of
Arunachal Pradesh	42.7	28.7
Assam	34.1	14.0
Manipur	10.9	39.8
Meghalaya	25.0	31.7
Mizoram	2.2	67.2
Nagaland	36.0	30.6
Sikkim	12.8	73.5
Tripura	16.5	35.5
All India	44.0	21.1

Source: NFHS-3

3.2.4. Maternal Care Indicators

Maternal health status profoundly impacts the health of a child. Some of the selected maternal care indicators that directly impact the health of the child have been discussed below.

3.2.4.1. ANC visit

The ANC services women received contributes at the health and safe delivery of the child. The percentage of women who has received at least one ANC[18] is more than the average with 86.5. However, the percentage of women who has received at least one ANC in the top performing states like Tamil Nadu, Goa and Kerala is really high. The state of Tamil Nadu is nearing to achieve universal status of women who has at least one ANC with 98.6 per cent.

Table No 3.28. Highest numbers of Women who received at least One ANC.

Ranking wise	State	%who had at least one ANC visit
1	Tamil Nadu	98.6
2	Goa	97.3
3	Kerala	94.4
Manipur		86.3
All India		76.4

Source: NFHS-3

Table No. 3.29 shows the state of women receiving at least one ANC during their pregnancies in the NER. The number of women who had received any ANC is the second highest in Manipur. The percentage of women receiving at least one ANC in Manipur was found to be much higher than its counterparts like Meghalaya, Nagaland, Mizoram, Tripura, Arunachal Pradesh and Assam.

[18] ANC refers to pregnancy-related health care, provided by a doctor, an ANM, or another health professional. It monitors pregnancies complications amongst the women, and provide advice and counseling to the women.

Table No 3.29 NE states of India on Women who receive at least One ANC.

State	%who had at least one ANC visit
Arunachal Pradesh	52.6
Assam	70.7
Manipur	86.3
Meghalaya	67.6
Mizoram	74.3
Nagaland	57.8
Sikkim	89.3
Tripura	78.3
All India	76.4

Source: NFHS-3

If we see the inter-district variation, the highest number of women receiving any ANC is found to be in the plain districts with Thoubal district reported with the highest, 91 percent and the lowest are the hilly districts with Tamenglong being the lowest amongst them with 46.1 percent.The progress of women who received any ANC from DLHS2 to 3 could not be established as DLHS-2 did not provide the information. So, the data from DLHS-3 was used to analyse in this section.

Table No. 3.30. Number of Women who received at least one ANC

District	Any ANC
Senapati	77.2
Tamenglong	46.1
Churachandpur	67.4
Bishnupur	88.9
Thuobal	91.0
Imphal East	85.0
Imphal West	89.2
Chandel	79.9
Ukhurl	59.3
Manipur	75.4*

*Represents figure for currently married women aged 15-44 years. Source: DLHS-3

3.2.4.2. Deliveries assisted by Health personnel

Safe motherhood entails women to deliver under the assistance of health personnel. Almost all deliveries were assisted delivery in Kerala, the highest in the country. Goa and Tamil Nadu, the other two states with maximum number of women undergoing assisted delivery other than Kerala has almost twice the number women undergoing assisted deliveries than Manipur. The state has a very low percentage with 46.6 of the women delivering with the help of health personnel but the proportions of women are more than the national average.

Table No. 3.31 Highest numbers of Deliveries Assisted by Health personnel

Ranking wise	**State**	**% of deliveries assisted by health personnel**
1	Kerala	99.4
2	Goa	94.0
3	Tamil Nadu	90.6
Manipur		59.0
All India		46.6

Source: NFHS-3

3.2.4.3. Recommended ANC

The percentages of women completing all the recommended ANC are very low in Manipur with 10.5 percent. It is lower than the national average and is six times less than the highest performing state like Kerala which has 63 percent of women receiving all recommend ANC.

Table No 3.32 Highest numbers of Women accessing all types of ANC

Ranking wise	States	% who received all recommended types of ANC
1	Kerala	63.6
2	Goa	55.7
3	Tamil Nadu	34.0
Manipur		10.5
All India		15.0

Source : NFHS-3

Table No 3.32 gives the percentages of women receiving all recommended ANC and women undergoing assisted delivery from the health personnel in the entire NER. The entire region has very low percentages of women completing all recommended ANC and is less than the national average except for Sikkim. Manipuri women stand third in receiving all the recommended ANC as compared to its other counterparts in the region and fairs better than Arunachal Pradesh, Meghalaya, Mizoram and Nagaland.

Furthermore, the percentages of women undergoing delivery with the assistance of the health personnel are found to be highest in Mizoram followed by Manipur. Women from Manipur are better privileged than counterparts like Assam, Arunachal Pradesh, Meghalaya, Tripura and Sikkim when it comes to having the experience of assisted delivery.

Table No 3.33 NE states of India on Deliveries Assisted by Health Personnel and women receiving all types of ANC.

States	% who received all recommended types of ANC	% of deliveries assisted by health personnel
Arunachal Pradesh	6.5	30.2
Assam	9.6	31.0
Manipur	10.5	59.0
Meghalaya	8.1	31.1
Mizoram	8.7	65.4
Nagaland	1.9	24.7
Sikkim	27.2	53.7
Tripura	10.6	48.8
All India	15.0	46.6

Source: NFHS-3

3.2.5. Breast feeding practices

Table No: 3.34 Children who were Breastfed Highest

Ranking wise	States	Percentage of children ever breastfed
1	Sikkim	98.1
2	Mizoram	98
3	Tripura	97.1
Manipur		96.0
India		95.7

Source: NFHS-3

Table No 3.34 shows the percentages of children who were breast fed the most in the country with Manipur. Almost all the children in Manipur were breast fed, with 96 percent but the top positions were held by states like Sikkim, Mizoram and Tripura, wherein the proportion of children who breastfed almost reaching universal status.

Table No 3.35. NE of India on Children ever Breastfed.

States	Percentage of children ever breastfed
Arunachal Pradesh	`95.5
Assam	96.4
Manipur	96
Meghalaya	96.5
Mizoram	98.0
Nagaland	96.1
Sikkim	98.1
Tripura	97.1
All India	95.7

Source: NFHS-3

The entire NER show high percentages of children who were breast fed. All the states have more children who were breastfed than the national average of 95.7.

3.2.6. Diarrhoea Treatment

Diarrhoea is one of the single most common causes of death among children under age five worldwide. Deaths from acute diarrhoea are most often caused by dehydration due to loss of water and electrolytes (NFHS -3).

Table No.3.36: Highest numbers of Children taken to the Health provider at the time of Diarrhoea

Ranking wise	States	% of children with diarrhoea taken to a health provider
1	Haryana	81.7
2	Maharashtra	77.3
3	Punjab	75.2
Manipur		37.8
All India		59.8

Source: NFHS-3

Table No: 3.36 shows the percentage of children taken to a health provider at the time of diarrhoea is significantly very low in Manipur and is half of states like Haryana, Maharashtra and Punjab, where maximum number of children were taken to the health provider at the time of diarrhoea.

Only about 36 percent of the children who suffered from diarrhoea received ORS packet in Manipur. The percentage of children who received ORS packets as a treatment for diarrhoea in Manipur is very low as compared to states like Meghalaya and Himachal Pradesh which has high percentage of children who were treated with ORS packets.

The use of ORT is recommended as a measure to prevent the diarrhoeal deaths amongst children. However, the knowledge of the usage of ORT or increased fluid level of the children amongst the Manipuri for treatment of diarrhoea remains limited with merely 47.7 percent as shown in Table No.3.37.States like Kerala and Himachal Pradesh has doubled the number of children who received any ORT or increased fluid at the time of diarrhoea.

Table No.3.37 Highest numbers of Children who received ORS packet as treatment of diarrhoea

Ranking wise	States	ORS packet
1	Meghalaya	65.1
2	Himachal Pradesh	56.3
3	Goa	50.6
	Manipur	36.2
	All India	26.0

Source: NFHS-3

Table No 3.38.Highest Numbers of Children who received any ORT or increased fluid

Ranking wise	States	Any ORT or increased fluid
1	Kerala	85.3
2	Himachal Pradesh	75.3
3	Meghalaya	72.1
	Manipur	47.7
	All India	43.0

Source: NFHS-3

Table No. 3.39 presents the data on the top performing states of India with maximum number of children were given ORS packet for the treatment of the diarrhoea. Meghalaya has the maximum number of children receiving ORS packets in the country. If we see the picture in Manipur, it has less than half the number of children as compared to Meghalaya but it is however more than the national average.

Table No.3.39. Highest numbers of children who received any ORS packets for diarrhoea treatment

Ranking wise	States	ORS packet
1	Meghalaya	65.1
2	Tripura	58.1
3	Himachal Pradesh	56.3
	Manipur	36.2
	All India	26.0

Source: NFHS-3

Also, children receiving any ORT or increased fluid as a treatment for diarrhoea varies in the NER with the highest reported in Meghalaya and lowest in Assam. However, Manipur fairs better than Assam and Arunachal Pradesh in the region as shown in Table No.3.40.

The percentage of children receiving ORS packets as a treatment measure for diarrhoea is very low in Manipur with a meagre 36.2 percent .Though Manipur outshines Assam, Arunachal Pradesh, Nagaland and Sikkim amongst its counterparts in the region as depicted in Table No 3.40

As shown in Table No 3.40, children in the NE states received less attention from the health providers for diarrhoeal treatment. Though Manipur fairs well as comparing to other states like Assam, Arunachal, Mizoram, Nagaland, Sikkim but Tripura and Meghalaya has a fairly good percentage of children who were taken to health providers for diarrhoeal treatment. However, except for Tripura and Meghalaya, all other states in the NER have less percentage than the national average when it comes to seeking treatment for diarrhoea from a health facility or provider.

Table No. 3.40. NE States of India on percentage of children on diarrhoeal treatment practice

States	% of children with diarrhoea taken to a health provider	ORS Packet	Any ORT or increased fluid
Arunachal Pradesh	35.5	31.7	47.2
Assam	31.4	14.5	25.6
Manipur	37.8	36.2	47.7
Meghalaya	72.2	65.1	72.1
Mizoram	27.4	48.3	69.4
Nagaland	17.6	16.5	52.7
Sikkim	33.4	33.2	65.3
Tripura	64.5	58.1	66.6
All India	59.8	26	43.0

Source: NFHS-3

3.2.7. Overview of the Risk Posing Determinants of Child Health

Positive child health requires a set of action, know-hows, knowledge and practices, and access of services from the side of the parents/caregivers and the society at large as most of the children are not able to represent their own interests and influenced the behaviour that makes them vulnerable and impacts their health.

The high knowledge of ORS for treatment of diarrhoea and practice of breast feeding amongst mothers in Manipur, the prime care giver of the children, are indicative of the fact that positive health practices is a result of culturally and socially accepted behaviour. Both the indicators reduce health risk of the children and impacts positive health outcomes of the children. The indicators are a result of the prevalent health culture of the society, which includes the knowledge of the

benefits of that particular health practice which directly impact and reduce the health risk of the children. Manipur's good indices in breastfeeding practices and knowledge of ORS are a reflection of the existent culture and health beliefs, and the society's position and level of understanding of protective child health processes.

Data for practices that mirror good hygiene and sanitation practices like safe disposal of stools and minimal practice of leaving children's stools in open places. indicated that the state has a fair practice of hygiene and sanitation practices. Good hygiene and practices curbs the risk of spread of disease and promotes health amongst its population, child health is one of them.

Moreover, maternal health care services had a direct health impact on the child and play a crucial role to determine for positive child health. Women who had at least one ANC in Manipur is high, even though is lesser than the top performing states in the country, but indicators that involves continuous access of health services and utilization of services available in the health care facilities like receiving all recommended ANC and delivery under the supervision of health personnel are very low in Manipur. Also, the immunization status of the children with 'full vaccination' and 'no vaccination' show very poor performance in Manipur as compared to other states in the country.

The health seeking behaviour of the population also has a strong influenced in determining population health. Manipur shows poor performance in diarrhoea management with few proportions of children taken to health providers. Even simple and effective solution for diarrhoea management amongst children like any ORT or increased fluid intake of the children is low, even though it is better than the national average.

However, looking from the narrow lens with a focus on the responsibilities of child health determinants from the angle of health care services, the risk of child health seems to be related to the health care system. The trend that emerged in this section is that of those indicators that involved efficient, effective and accessible health

care services are reported with poor performance. The poor outcomes have a strong relation with the problem- stricken health care system of the state (GoI 2001 and MSDR 2006), however, one cannot undermine the role of other determinants play in the way services are delivered by the health delivery system.

To sum up, the possible explanation of Manipur's high performance in indicators that particular needs strong know-hows and knowledge, when transferred into child health indicators gave a positive health and sanitation practices. Whilst, indicators that need strong health care services as a major determining factor tumbled in Manipur.

3.4 Health related services

3.4.1. Indicators of Utilization of ICDS Services

ICDS programme is the world's largest early child development programme, which approaches child health in a holistic manner. A wide range of services have been targeted for the overall development of the children aged up to six years , which includes growth monitoring, immunization, referral services , treatment of minor illness, health check-ups, and supplementary feeding, as well as nutrition , and health education to improve the childcare and feeding practices of the mothers (GOI 2011). Some of the services which had direct impact on health are analyzed in this section.

The proportion of children accessing any services provided under the ICDS is very low in Manipur. The states as shown in Table No 3.41 like Chhattisgarh, Mizoram and Maharashtra have the highest number of children who utilizes the services and have more than twice the number of children as compared to Manipur. Manipur performs worse than the national average of 32.9 percent with merely a 30 percent usage of any services under the ICDS.

Table No 3.41 Highest Numbers of Children who received any services in the ICDS

Ranking wise	States	% of children 0-71 months who received any services
1	Chhattisgarh	65.2
2	Mizoram	55.8
3	Maharashtra	49.5
Manipur		30.1
India		32.9

Source: NFHS-3

Table No: 3.42 Highest number of Children under age six who received food supplements

Ranking wise	States	Received Food supplements
1	Chhattisgarh	58.4
2	Mizoram	54.7
3	Orissa	52.5
Manipur		21.4
India		26.3

Source: NFHS-3

Table No 3.42 shows the states with the maximum number of children who received food supplements under the ICDS programme with Manipur. The proportions of children who received food supplements in Manipur is less than half of the states with the maximum of proportions of children who received food supplements under the programme. Manipur children received less food supplements than the national average.

Table No: 3.43 Highest numbers of Children under age six who received Immunizations

Ranking wise	States	Received immunization
1	Chhattisgarh	46.0
2	Madhya Pradesh	37.8
3	Gujarat	33.9
Manipur		12.2
India		20.0

Source: NFHS-3

Children under six age who received immunization services under the ICDS is very minimal in Manipur. It is less than the national average and is almost four times less than Chhattisgarh with the maximum number of children receiving immunization services in the country.

Table No: 3.44 Highest Number of Children under age six who received health check-ups

Ranking wise	States	Received health check-ups
1	Orissa	43.1
2	Maharashtra	36.2
3	Chhattisgarh	32.2
Manipur		1.1
India		15.8

Source: NFHS-3

Table No: 3.45 Highest Numbers of Children under age six who were weighted

Ranking wise	States	Weighted
1	Orissa	56.1
2	Chhattisgarh	45.1
3	Madhya Pradesh	39.1
Manipur		0.6
India		18.2

Source: NFHS-3

Table No.3.45 shows the states with the maximum number of children under six years of age who have received health check –ups in the ICDS programme along with Manipur. Minuscule number of children had health check-ups in Manipur under the ICDS programme. The amount of children receiving health check -up in Manipur is as low as 0.6 percent and is far behind the national average or the states where the children frequent health check-up.

The data on the utilization of any services under the ICDS services amongst the NER varies from as low as 15 percent in Arunachal Pradesh to 55 percent in Mizoram. However, the services utilization is also low in Manipur but it is better than states like Assam, Tripura and Arunachal Pradesh.

Moreover, the numbers of children who were weighted and had received health check up in Manipur under the ICDS are the lowest in Manipur in the entire region. The state also has lower percentage of children receiving food supplements in the region. But it fairs slightly better than states like Tripura and Arunachal Pradesh. However, the number of children receiving immunization services under the ICDS in Manipur is higher than states like Arunachal Pradesh, Assam, Meghalaya and Nagaland.

Table No 3.46 NE states of India who received various services under ICDS

States	% of children 0-71 months who received any services	Children under age six who received food supplements	Children under six who received immunization	Children under six who received health check ups	Children under six who were weighted
Arunachal Pradesh	15.8	14.7	6.5	2.4	1.7
Assam	29.8	28	6.5	4.9	5.0
Manipur	30.1	21.4	12.2	1.1	0.6
Meghalaya	48.1	48.1	10.3	25.9	22.5
Mizoram	55.8	54.7	21.6	14.3	35.8
Nagaland	39.3	38.8	3.0	1.4	0.9
Sikkim	41.6	40.8	22.7	17.6	26.5
All India	32.9	26.3	20.0	15.8	18.2

Source: NFHS-3

3.3.1. Overview of health related services

Health related services like the ICDS programme which are designed exclusively to provide supplementary services for improving the child health, show poor performance in Manipur. The utilization of ICDS is lower than the national

average in Manipur in almost all the services provided under the programme. The percentages of children receiving any services, food supplements and immunization services are almost half of the national average. Children receiving health check-ups and who were weighted under the ICDS were very minimal in Manipur. The prevailing state of health related services in Manipur draws the attention towards the fact that the key to Manipur's good child health indicators have been achieved more as an isolated aspects but not mostly due to intervention carried out in health and related services.

3.4. Major Child Health Indicators of NER along with Selective Development Indices

The different levels of the child heath attainments in the NER with some selective development indices were taken to find out their relation. One of the important child health indicators, IMR shows a significant relation with female literacy rate. With the increased in female literacy IMR reduces. Also, with the increased in education of the females, full immunization and children taken for ARI treatment to health facilities and providers also increases. Whilst, any form of anaemia and underweight children decrease with an increase in female education.

Furthermore, IMR does not seem to have any linear association with an increase in number of people living under BPL. But full immunization and children taken to health facilities for treatment of ARI decrease with the increase in people living under BPL. Also, underweight children and any form of anaemia increases with an increase in people living in BPL.

Another crucial development index on health i.e public expenditure of state on health does not seem to have any linear association with IMR and full immunization. However, any form of anaemia shows a significant relation with increase in public expenditure of the state on health. But with an increase in the expenditure indicators such as immunization and children taken to health facilities increases.

Female work force participation rate (FWFP), an indicator that determines and contributes to the economic factor of a family and the economic status of a woman also has a striking relation with indicators like IMR. With an increase in female work force participation, IMR decreases. A significant relation between

underweight children and female workforce participation has been found as with the increase in FWFP amongst women the number of underweight children decreases. Whereas indicators like immunization and children taken to health facilities increases with an increase in female workforce participation.

Table No. 3.47.Correlation amongst Major Child Health Indicators and Development Indices of NER

Development Indices	IMR	Full Immunization	Any form of Anaemia	Percentage for who treatment was sought from a health facility or provider	Underweight
Literacy Rate(Female)	-0.71	0.37	-0.46	0.30	-0.43
Population BPL	0.097	-0.22	-0.33	-0.33	-0.15
Public expenditure of state on health	0.05	0.14	-0.68	-0.29	0.25
Female Work Force participation	-0.45	-0.55	-0.003	-0.47	-0.61

Source:

1. Female Literacy Rate of NER: Registrar General of India, Provisional Census Report, 2011
2. Percentage of population below BPL by the state (2009-10), Tendulkar Methodology, Planning Commission, GoI.
3. Public expenditure on health as share of GSDP (2004-05), National Health Profile, 2009
4. Female Work Participation, Statistics on Women in India, 2010

3.5 State of Child Health Indicators of Manipur: A Summary

Measuring state of child health needs consideration of those aspects related from environmental to other socio-cultural determinants, to the actions and behaviour of the family and immediate social group setting. The comparison of the state of child health in Manipur with the entire country, the NE states and within its districts has highlighted an embedded system in the Manipur society that led to the different levels of health outcomes and outreach of the health programmes. As health outcomes are not isolated event and the determinants embedded in the larger social system. The manner in which a society is stratified, health outputs will also follow the gradient. The absence of research in the area could not highlight the gradient that exists in the Manipur health system and limit the analysis. However, the differentials in the levels of outcomes suggested a system that has influenced in the way how the state and the districts have performed. These systems are unique to the socio-cultural and political milieu of the state and are the varied determinants that influenced health inequities and health at large. These determinants of health are spread across all aspects of child health indicators and impacted each of the indicators equally. However, depending on the intensity and level of impact on each of the health indicators, the outcome experiences had differed. For instance indicators such as nutritional status of the state are on par with the best performers of the country. This good achievement could not be credited only to a single factor like availability of food, but has to keep into account besides the availability factor other factors such as intra-household food distribution, cooking practices, mothers' knowledge on feeding pattern such as breastfeeding along with other weaning practices, food habits of the society etc. Similarly, indicators such as low IMR and size at the child at the time of birth have good achievements and its explanations rooted in the way Manipur society is structured and progressing, whilst others like ARI prevalence, utilization of ICDS programme, diarrhoea management and immunization coverage have failed to make the desired impact.

As the chapter aimed to make an attempt to compare the state of child health with other states and within the region through the survey data, an analysis of the same has

revealed variations. However, high performance indicators in Manipur were amongst those that needs strong individual level action, know-hows and knowledge which works with a minimal direct health services and interventions, but more entrenched in the socio-cultural and environmental determinants. The argument works in concomitant with the analysis put forwards by the National Human Development Report (2002) on good health indices in Manipur as something that has to do with the women's status as observed with *'greater freedom; increased political consciousness and higher level of maternal advancement; stronger social organisations and the overall system of entitlement protection of the women in Manipur'*. The report also further direct good health indicators towards strong work force participation of the women in the state. Women work force participation is better than the national average as per Census 1991 in the category of 'different categories of work' with the women enjoying better economic independence than its counterparts in the country. Furthermore, the report highlight that the mean age of women at marriage, 21.3 years in Manipur as per 2001 census which is more than the national average of 18.3. The report credits Manipur's experience in health as '*not just a result of medical and life-saving support services*' but something that has been significantly connected with maternal capabilities which the report argues has no necessary reliance on higher female literacy. It argues and credits the achievement as a result of a unique socio-political and economic context that has brought about empowerment of women and higher levels of maternal advancement in the State (GOI 2002).

Furthermore, the high attainments in child health status in Manipur and the greater variations that is found in the entire NER in child health measures as discussed in the chapter are trailed with different level of human development and gender development indices in the states of the region. The region as per the HDI and GDI developed by Planning Commission of India (2009) on the line of the UNDP's framework of human development for the states and UTs for the year 1991 ranking indicate Assam as 26th, Arunachal Pradesh as-29th, **Manipur –9th**, Meghalaya -24th, Mizoram - 7th, Nagaland - 11th, Sikkim -18th and Tripura stands 22th amongst the UTs/ States rankings. Similarly for the GDI, 1991 ranking, Assam is 30th, Arunachal Pradesh is 18th, **Manipur is 3rd**, Meghalaya is 12th, Mizoram is 6th, Nagaland is 21th,

Sikkim is 20th and Tripura is 29th The states with better human development index and gender development index in the country like Mizoram, Sikkim, Manipur etc. outperformed its counterparts in child health indicators mentioned in this sub-section than states like Assam, Arunachal Pradesh and Nagaland with low indices.

The similar explanation could be cited to the different level of development within the districts in Manipur. A composite index of the sectoral development index of Manipur compiled in the state development report (2006) carried out using seven development categories, namely agricultural development, industrial development, urbanization, tertiary development, infrastructural development, bank finance and educational development; revealed that the hilly districts occupy the lowest performance chart as compared to the plain districts. Plain districts like Toubal secures 1st, Bishnupur 2nd, combined Imphal is 3rd while the hilly districts like Ukhrul ranks 4th, Chandel is 5th, Tamenglong is 6th, Churachandpur 7th and Senapati,8th (MSDR 2006)

CHAPTER 4

UNDERSTANDING THE DETERMINANTS: AN EXPERIENCE OF THE UNIVERSAL IMMUNIZATION PROGRAMME

This chapter is presented in four sub-sections. The first sub-section presents the quantitative information about the study population. It includes the general profile describing the study area, household description, the parental profile and the socioeconomic profile of the children whose immunization status has been examined in the study. The second sub-section presents the coverage information of six core vaccine under the UIP based on the findings from the field investigation of the unit of the study. The third sub-section elucidates the analysis of the qualitative information obtained from the interview with the study respondents. Major thematic areas with their consecutive sub-themes highlighting diverging as well as converging factors between the two districts that impacted the coverage of the programme is presented. Selected quotes from the interviews of the respondents are included to highlight the themes. A summary of the chapter is presented in the fourth sub-section of this chapter.

4.1 General Profile

The data discussed in this section is based on the information collected by the researcher during the field investigation and the interpretation has been made from the primary data collected.

4.1.1 Village Description

4.1.1.1Region

Majority of the communities in the study area were predominantly from rural areas in both the districts except for 'Paubitek in Imphal West which belonged to the Municipality area. More than half of the respondents were from medium sized villages while the rest of the villages were from small-sized villages.

4.1.1.2 Road Connectivity

More than half of the villages out of the nine villages in the study area were motorable and paved; a little less than half of the overall study areas were motorable but due to difficult terrain, the roads were not properly paved, muddy and difficult to use during wet seasons. The roads that led to villages such as Bamgaijang and Ramlalong in the Tamenglong block become inaccessible during monsoon as the roads tend to get blocked with bushes and shrubs.

4.1.1.3. Mode of Transport

The two villages in the study area of Imphal West district were well-connected by three wheelers. Auto rickshaw services were available after every 20-30 minutes. The exterior lanes of the two villages in Imphal West were also connected by buses. However, in Tamenglong out of the seven villages more than half of the villages had jeeps to transport the people from the villages to the market place but the service was mostly driven by the availability of the passengers. Villages like Dailong and Tharon had jeeps available once or twice a week. In the rest of the villages, the frequency of vehicle availability was entirely dependent on the availability of the passengers. The entire village usually dependedon the service of a single jeep. Sometimes the services were available once a day, as seen in villages like Akhui, Nrenglong while in the others, like Bamgaijang, Ramlalong and Kahulong, the services were available once or twice a month. Most of the villages out of the seven villages did not have transport facilities during the wet seasons. Majority of the people walked on foot to the market place in the block headquarters for distances which ranged from 10-25 kilometres.

4.1.1.4.. Health Services

Out of the nine villages, about more than half of the villages (65%) in the study area did not have any health service facilities within the village. The inhabitants relied on the services available in other villages and towns. Nearly one fourth of the villages (26%) were sub-centred villages, very few villages (9%) were part of the catchment area of District hospital and Community Health Centre.

4.1.2 Household Description

4.1.2.1. Drinking Water

Out of the sixty households, a little over half of the households had access to tap water for drinking facilities. One-fourth was dependent on river water, more than one-fifth relied on pond water and a very small portion of the households used stream water.

4.1.2.2. Type of Housing

Out of the sixty children who were studied, more than three-fourth of the children lived in *kuccha* structure while less than one-fifth lived in *semi-pucca* dwellings and a small fraction lived in *pucca* houses. The sanitation facilities of more than half of the households from which these children belonged had pit latrines while one-third used open fields and jungles, and a minuscule fraction of the proportion had concrete toilet facilities.

4.1.2.3. Income

Out of the sixty households from which the study unit were collected, more than one third of the households had job cards and the rest were not entitled to it. More than half of the families were from the income group range Rs 2000-4000/ per month. More than ten percent of the families had less than Rs 2000/per month; almost the same proportions of the families fall within the income group of Rs 4000-6000/per month. Around 15 percent had more than Rs 8000 and more per month as family income

4.1.3 Parents' Description

4.1.3.1. Marital Status

Majority of the parents of the study unit were married except for one whose parent had separated. Except for about five percent of the fathers, all were employed.

4.1.3.2. Occupation

The majority of the fathers of the study population from Tamenglong district were mostly engaged in agricultural work, both as cultivators and labours and comprised of more than fifty percent. Less than one-tenth of the fathers are carpenters and the same proportions of fathers were daily wage labours and drivers. More than one -tenth of the parents are dependent in Tamenglong. A very small proportion of the fathers were pastors and government employee. However, amongst the parents of the study population in Imphal West, little less than half of fathers were daily wage labours. More than one-tenth were government employee. A little less one-tenth were drivers. Similar proportions of fathers are carpenters, dependent and drivers. More than three-tenth of the fathers in Imphal West were fisherman.

All the mothers of the study unit were housewives except for one mother from Tamenglong who was a teacher. The majority of the mothers earned small amount and contributed in the family income by selling oranges, fishes, tea, vegetables, handloom products and other day to day consumables.

4.1.3.3. Age

The age of the parents of the sixty children varied , from as young as 18 years going up to 45 years amongst the mothers and 21 to 56 years for the fathers. More than one-fourth of the parents belonged to the age group of 31-35 years. The same proportions of the parents were from the age group of 36-40. About five percent of mothers were less than 20 years of age while the minimum age of fathers were in the 20-25 years range, which contributed 10 percent of the fathers.

4.1.3.4. Education

The educational qualifications of the both the parents of the study unit also varied. More than half of the mothers had little or no education. More than one-third had completed six to ten years of schooling and less than ten percent had more than ten years of school education. The educational attainments for fathers were higher than

the mothers. One -fourth of the fathers had no or very little education. More than half of the fathers had completed six to ten years of schooling; and more than one fifth (16.7 %) of them had completed ten or more years of education.

4.1.4 Socio-Demographic Description

The socio-demographic characteristics of the children who were the unit of the study is in Table No 5.0. A description of the profile is given below.

4.1.4.1. Sex

Out of the 60 children selected for the study, more than half of the children were males and about 41 percent were females.

4.1.4.2. Caste

Based on the caste status of the head of the household, half of the children who were part of the study were from STs households, nearly one-fourth from general families and more than one-fourth from the OBCs. There was no representation of the SCs children in the study population.

4.1.4.3. Ethnicity

A further bifurcation of the ethnic composition of the study population showed a representation of different ethnic and sub-tribes groups. Rongmei and Liangmei belong to the Zalinglong tribes, a sub-tribe of the Nagas and they contributed half of the study population. Rongmei contributed one-third and Liangmei contributed less than one-fifth of the study population. Thankul, another sub-tribe of the Naga but does not belong to the Zaliangrong Nagas represented a small fraction of the study population. The Meiteis, the most dominant ethnic group in the state of the Manipur comprised one –fourth of the study population and the Muslim Manipuri, commonly known as the Meitei Pangal contributed little more than one-fourth.

4.1.4.4. Religion

Based on the religion of the head of the households, half of the children of the study population were from Christian households followed by more than one-fourth households which were headed by Muslims and less than one-fourth from Hindu headed households.

4.1.4.5. Type of Delivery

About 60 percent of the children of the study population were delivered at home with the help of traditional birth attendant while 35 per cent were delivered at the government hospitals .A small portion (3%) were delivered at Private clinics.

4.1.4.6. Type of Family

More than half of the children of the study population were from joint families while less than 40 percent were from nuclear families.

Table 4.0 Socio-demographic description of the children

Socio-demographic variables		N=60	Percent
1.Sex	Male	35	58.3
	Female	25	41.7
2. Caste	General	14	23.3
	Scheduled Caste	0	0
	Scheduled Tribe	30	50
	Other Backward Classes	16	26.7
3. Ethnic Groups	Rongmei	22	36.7
	Liangmei	7	11.7
	Thankul	1	1.7
	Meitei	14	23.3
	Pangal	16	26.7
4.Religion	Hindu	14	23.3
	Christian	30	50
	Muslim	16	26.7
5.Delivery	Institutional Public	21	35
	Institutional Private	2	3.3
	Home	37	61.7
6.Family Type	Nuclear	23	38.3
	Joint	37	61.7

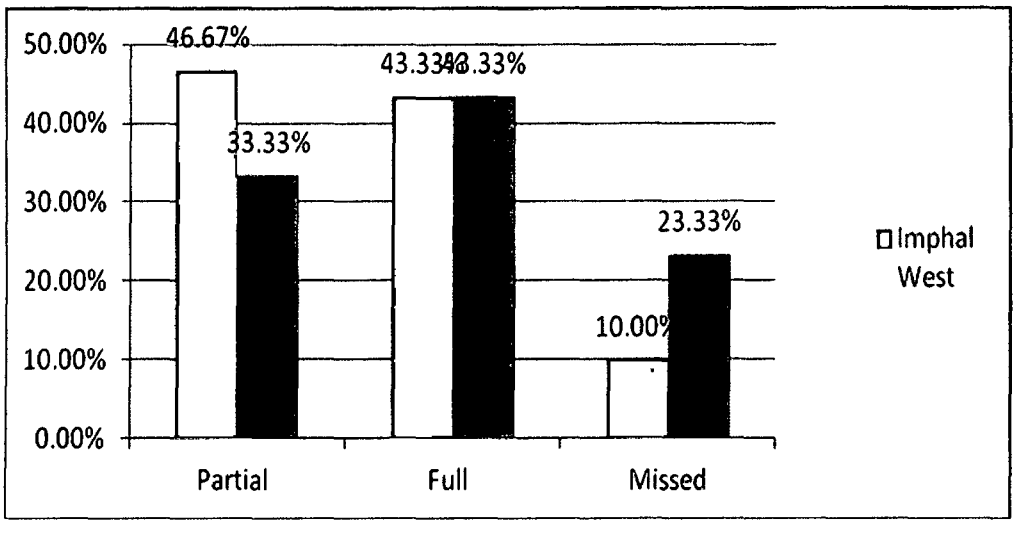
4.2. Immunization Status: A Presentation of the Primary Data

The section presents the immunization status of the 60 children, whose immunization status were collected from the field investigation in the two selected districts of Manipur, namely Tamenglong and Imphal West. The information presented is of the coverage data on the six basic vaccines under the UIP, namely BCG, OPV, DPT and Measles.

Quantitative information was collected based on vaccination cards as well as the recall factor of the mothers .All the respondents who provided the information on the status of immunization in both the districts were mothers except for one, who was the grandmother of the child. All the respondents who had either fully immunized or partially immunized their children showed the vaccination card to the researcher at the time of interview in both the districts. The 12-23 months age group of children had been taken for the present analysis as per the WHO recommendation to take children aged between12–23 months for any routine immunization coverage surveys if the final primary immunization is at 9 months of age and India follows the immunization scheduled that falls in this particular category.

4.1: Coverage Information The data collected on the six basic vaccines under the Universal Immunization Programme showed in Figure 1 and Table No 4.43 depicts that less than half (43 %) of the children of the study population received full immunization status before they attained the age of one year. About 40 per cent had partially completed the six basic vaccines and another one-fifth has missed all the six-vaccines.

Fig.1 Coverage of the six basic vaccines in the study area



The analysis of the data showed that the drop-out rates of the children were high and also children who had not received any vaccination formed a significantly large proportion.

4.2.1 Coverage in the Two Selected Districts

The data depicted that the same proportion of children were fully immunized in both the districts. But the proportion of children who had 'missed' all the vaccines were higher in Tamenglong then in Imphal West. In case of partially immunized children the proportion was higher in Imphal West. An analysis shows that if the parents accepted services once, they continued it irrespective of the circumstance they were in Tamenglong. However, the data in Imphal West presented a different story. The proportion of children who were withdrawn from the programme were higher as indicated by the level of dropout in Imphal West.

4.2.2 Coverage by Sex

The coverage of the six vaccines by sex shows that nearly half of male children are partially immunized, another forty percent are fully immunized and about one-fifth have 'missed' all the vaccines amongst the study population. Similarly, in the case of female children in the study population, thirty five percent have partial

immunization, nearly half have full immunization and about one –fifth had missed the vaccines.

4.2.3 Coverage by Districts

The district wise coverage in the two districts shows that one third of children in Imphal West were partially immunized , close to half of children were fully immunized and nearly one-fourth have 'missed' the vaccines amongst the study population. While, in Tamenglong, nearly half have partial immunization, another forty-three percent with full immunization and about one-fifth have missed the vaccines amongst the study population.

4.2.4 Coverage of Individual Vaccines

Among individual vaccines, as shown in figure No. 2, coverage was highest for BCG (79.3%) and lowest for measles (46.6%). Coverage for DPT3 and OPV3 were same (51.6%). Consistent decline in the coverage rate from the first to third dose were observed in both DPT and OPV and the proportion of decline were same. DPT and OPV dropout rates from the first to third dose were 21.7% for both the multi-dose vaccines. The proportion of decline for both DPT and OPV were the same from first to third dose as they were administered on the same day on the child as indicated by the date of administration on the immunization card. It could also be seen that if a child had been immunized for the first dose of the multiple dose vaccine then a significant amount would receive all the three doses of vaccine with only a small fraction of dropout; but vaccines which were administered at the later age like measles vaccine after a significant time interval from the last vaccine showed a high dropout rate. The dropout rate for measles in comparison with BCG, and DPT3 & OPV3were 27.7% and 32.7%, respectively.

Figure No. 2: Coverage of the individual vaccines in the study area

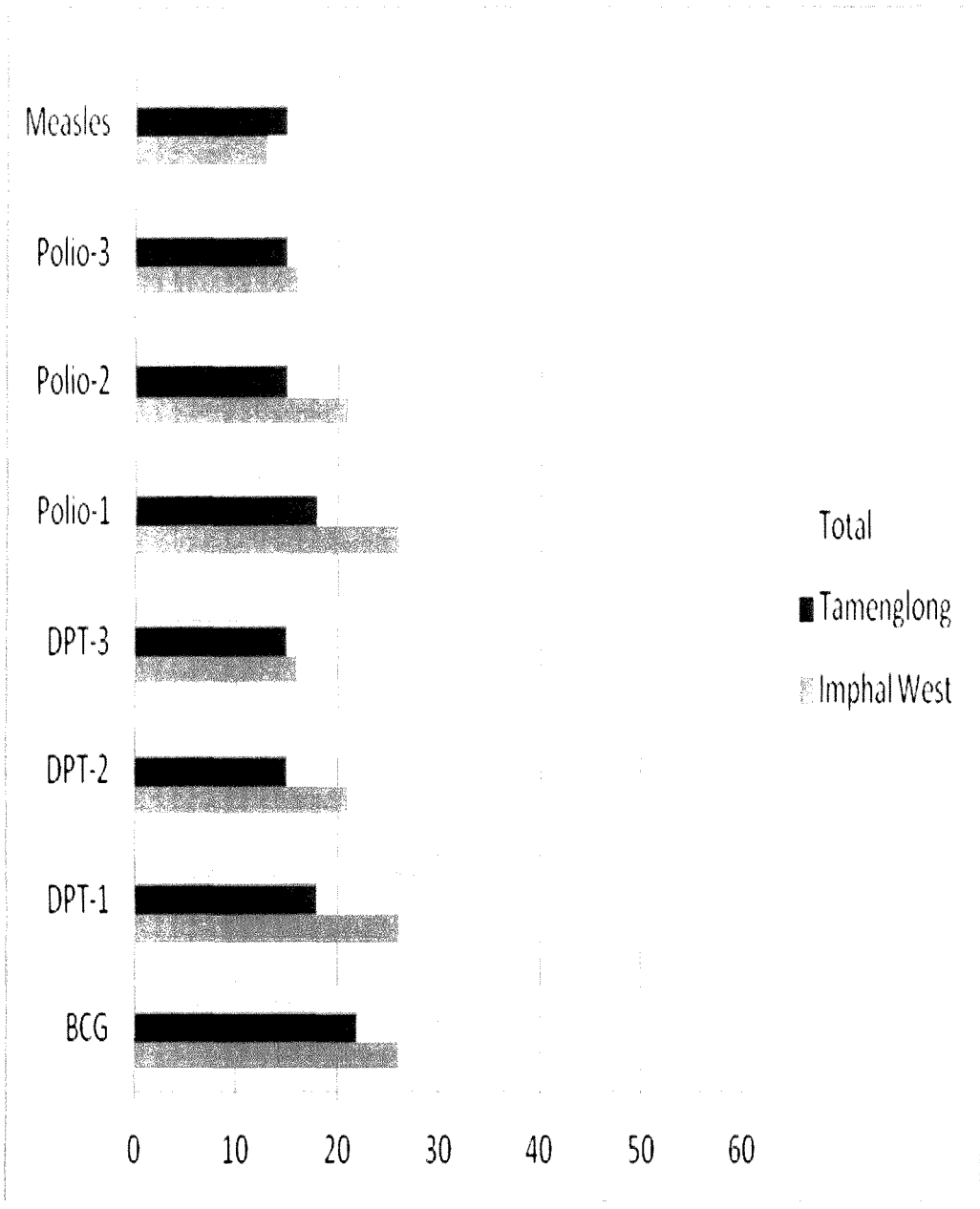


Table No 4.47: Immunization status by sex and districts

Variable		Immunization status																		
		Partial	Full	Missed	BCG		DPT1		DPT2		DPT3		OPV1		OPV2		OPV3		Measles	
					YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Sex	Male(35)	15	14	6	27	8	25	10	22	13	20	15	25	10	23	12	20	15	16	19
	Female(25)	9	12	4	21	4	17	8	16	9	13	12	18	7	16	9	13	12	10	15
District	Imphal East	10	13	5	22	8	18	12	17	13	17	13	18	12	18	12	17	13	15	15
	Tamenglong	14	13	3	26	4	24	6	21	9	16	14	25	5	21	9	16	14	11	19
N=60																				

4.3 Immunization coverage in Tamenglong and Imphal West: A Summary

In summary, the data collected from both the districts on the immunization status of the children marked a low coverage with less than half of children with 'full immunization'. The number of children who 'drop-out' between the service utilization is high as indicated by a 40 percent of children who are partially immunized. The proportion of children who drop-out from BCG to DPT-3 is not as high as the drop-out rate from BCG to measles, which shows nearly half of the children dropped out amongst the study population. The findings also revealed that continuity in the multi-dose vaccine services utilization was observed as the same proportions of children continued to receive DPT-1 to DPT-3 and OPV-1 to OPV-3. Likewise, same numbers of children were immunized with both the multiple dose vaccines namely DPT and OPV

4.4. Qualitative Data Findings

The qualitative information explained the opinion, attitudes and the motivational factors of the respondents on the various facets of the programme. The findings filter the factors contributing or hindering the coverage of the immunization programme.

4.4.1 Perception and interpretation of the programme

4.4.1.1. Interpretation of the services

Gaps in understanding the services of UIP has branched out many dimensions of looking into the programme in both the districts .One such instance that has been seen, is in the way the services were interpreted. The differing levels of interpretation amongst parents has fueled resistance and amongst the majority a passive acceptance; based on the interpretations of the services provided. The finding was common amongst parents in both the districts. Among those parents who had shown resistance, the reasons cited were that of poor growth, reduced lifespan and issues of side effects from the vaccine on the children. Based on these interpretations the children either completely missed the services or are withdrawn after being partially immunized.

Some parents did go and access the services until they decide to withdraw from the services after their children were partially immunized. The reasons mentioned by a few of them in both the districts were that the child has not been growing as they should. After these experiences the parents decide to withdraw from the programme contributing to the high proportions of partially immunized in both the districts.

The common reason of 'missing' the services that had emerged from the parents in both the districts were the deduction made mostly from the experiences the parents had with their elder children. A few parents, after they experienced vaccine induced side effects like fever and rashes with the elder child decided to forgo vaccination of the younger child who completely 'missed' the services. These parents dreaded the experience which they had undergone with their elder child and made the judgment. A few parents even decide from the experience of the children in the neighborhood and draw such conclusion that makes them resist the services. Some parents cited the vaccine exposed their children unnecessarily to fever, rashes and give discomfort to their otherwise healthy child. The side effects left a dark blotch in the way they interpreted the programme.

The cases of parents resisting against the programme was seen more amongst parents of Tamenglong district. Some of the parents interpreted the services of the child vaccination programme as a strategy of the government to reduce the size of the population but not as something for the health of the child. Parents resisted the services from the mis-information and false perception that vaccines resulted in reducing the lives of their children even though it guaranteed a healthy childhood. Such cases was found in the interior blocks of Tausem and Tamei where the health services reach the people occasionally and people living in these interior area remained aloof with the other areas due to the remoteness of the districts. This observation was not seen in Imphal West.

While in the cases of passive acceptance that were seen amongst parents of the children who were completely immunized, the reason for accessing the services were mentioned as protection from diseases. Amongst these parents who accepted the

services, they did it on the rationale of the health and well-being of the children. Some did it assuming that most health intervention are bound to benefit the health of the people, immunization could not be an exception. And also some felt it was a requirement for the child's health as most mothers were seen doing it.

And, amongst those few parents who had accepted the services with some inhibitions, the rationalization given was that being a medical intervention immunization needs consideration as they had been told by ASHAs, ANMs and others. These parents who accepted the services with some inhibitions reasoned it as a medical intervention warranted for as the frontline health workers have been instructing them.

> *"...People's mindsets have changed but unfortunately there are still some families who are very difficult and no matter how much hard we try to convince or educate them, they still have the same old mentality. It might be due to lack of education. They viewed vaccination as the government's policy to reduce the population by reducing the lifespan of the people yet making them healthy in their childhood days, but shorten their lives"-Block Programme Manager, Tausem, Tamenglong.*

> *"Some of the parents feel that the growth of their children is slowed due to the vaccines. This makes it difficult to convince the parents to bring the children to the camp and even if they bring the children also they feel the child is not growing due to the vaccine. Some of them blame the vaccine as the cause of their children's height... no matter how much we tell them it is difficult to change their thinking."- ANM, Imphal West*

> *"Is it true sister (researcher) that children's growth is slowed due to these vaccines?"-ASHA , Imphal West.*

> *"Some people told me the vaccines will make my child healthy but the growth of the child gets little delayed. But I don't mind as long as my child is healthy. He will grow well if I feed him well and does not suffer from any disease"- Mother , Tamenglong District*

4.4.1.2. Cost-benefit Analysis

Proportion of parents undermining the benefits associated with the vaccination programme was equally found amongst parents of both the districts. The programme was not considered as an important activity worthy of attention and time for the health of the child. The majority of the parents seek treatment for their

children that needs immediate health attention like cold, fever and diarrhoea. A few considered to take the ailing child for treatment in the health facilities or give medicine from the Pharmacist. However, in case of child immunization services majority of the parents neither understand the importance nor the benefits of the programme. They felt accessing the services as a futile task. Further, a few parents preferred to shun away from the services due to the repercussions associated with the vaccines which they had either experienced from their own children or from the experiences of others.

The cost-benefit argument of the services of the UIP worked against the service utilization when seen from the viewpoint of a few proportion of parents. Considering the lower socio-economic background of the parents in both the districts, the pretext of prioritizing to earn were seen as a better choice by majority of the parents rather than investing time for taking the child for vaccination. Most of these parents do recognize the need of programme but 'making the ends meet' weighted more in the decision process as deduced from the past experience where they had suffered in terms of wastage of time and loss of labor. The judgment was based purely on the cost benefits arguments in economic terms which most of the parents inferring from their experiences of either accessing or not accessing the services.

> *"... As most of the family are from agricultural background, it is very hard for the parents to lose a day's work if the child gets sick .With the advance work needed in pam tauba[19][20] , asking parents to stay back to attend the sick child or getting the child for vaccination is too much to ask." -DIO, Tamenglong*

[19] Pam Tauba: Initial work of clearing the forest area as part of the Jhum cultivation practice, a widely agricultural practiced in the hilly region of North-east.

4.4.1.3. Concept of 'good health'

Parents' judgement and interpretation of the state of health of their children had a large impact on the compliance towards the activities of the programme in both the districts.

The deduction of specific child health beliefs relied on the communities' interpretation that influenced the belief system of majority of the parents. Some of the parents perceived good health with the growth and eating habits of the child. Amongst those who felt their children were healthy, getting vaccine shots were not considered as desirable. The vaccines exposed the child unnecessarily to the vaccine –induced side effects to their otherwise healthy children. Also, it was seen that some parents accessed the services if they felt that their child was unhealthy or underweight. Such mothers who hold such an opinion utilized the services thinking it would make their children healthier. Extra efforts and precautions were provided to such children till they felt they were vulnerable. These mothers accessed health services available to children till they perceived their children as 'unhealthy'. However, few of them changed the perception when they felt the child getting healthier. With these change in perception, some mothers dropped out from programme considering it was no more needed. Moreover, the hassle of getting multiple vaccines and keeping the schedule of the services with the specificity involved was no longer felt necessary. So, these few mothers did not remain regular and sincere to the programme and mostly drop out towards the time when the child had to receive the measles vaccine.

> *"My child is healthy .She eats well and doesn't get sick. I don't think she needs any vaccine. If she was a sick child I could have thought about taking him to the camp. But she is healthy and I want her to stay away from the injections and pains unnecessarily."*-Mother, Imphal West

> *"My son suffers from normal ailments` that any child of his age suffers like fever, cold, diarrhoea. He gets well again if I give him some medicine or feeds him well. I took him for a couple of times for the vaccine but as he was turning into a healthy child I stopped going"-Mother, Imphal West*

Also, some parents in both the districts shared that their children were healthy and did not need any medical intervention. Of these parents who thought their children were healthy, some reasoned that for generations people had survived and remained healthy without any vaccines. These set of beliefs were deeply entrenched amongst the people and had a major influenced on their deduction of benefits of the programme. These parents who hold such an opinion in both the districts had never taken their children for vaccination.

> *"We are healthy and by god's grace our children are also healthy. Why do they have to get tikka (shots) when they are healthy and fit? I have five children and nobody has got shots and everyone is fit and fine and are in front of your (researcher) eyes. We are poor people we have to look after the farm and meet our end meets."-Father, Tamenglong.*

4.4.1.4. Leaders' Role

Involvement of the local leaders had been crucial in Tamenglong district for the overall provision of services. Tamenglong, being a tribal dominated district, the tribal chiefs played an influential role in the society. In such tribal societies where the social kinship system are very strongly interwoven and the population groups were homogenous with villages habited in clusters by the same clan of the sub-tribe groups like all Rongmei village, all Liangmei village, the leaders' advice and decisions are sought and taken as orders without any questioning. In villages such as Chaton, Lengmei, Langpram etc in Tamei and Pankotphai, Phaitol, Khaipundai etc in Tausem block of Tamenglong district, the role of the village leaders known as 'Khunlakpa'[21]had been very significant due to the existing social system coupled with the remoteness of the areas . In these villages the staff especially the ANMs had to work in liaison with the chiefs to conduct the out-reach programme. Some of the staffs either used the premises of the chiefs or had to take their consent to use the community hall or the church compounds to conduct the immunization camps. Their cooperation had been seek in a few cases to mobilize the communities in

[21] Khunlakpa –local name of 'Tribal chiefs'

circumstances where it was difficult for the ANMs to make frequent visits to the community due to the remoteness and vast inter-village distance.

Likewise, the majority of the ASHAs had to liaison with the village chiefs, and work in consultation with them if any activities were to be carried out in the villages; child immunization programme is not an exception. However, the role of the tribal chiefs could be observed in Tamenglong and not seen in Imphal West as the population groups were more heterogeneous.

The chiefs' role extended to not only lending support in programmatic activities but also towards the logistic arrangement like providing shelter to the ANMs and her companion, food, arranging for the venue for the out-reach camps particularly in those villages where it was difficult for the ANMs to get back from the villages on the day when the out-reach session were organized.

The majority of the chiefs supported and extended their cooperation in conducting the camp. Only in a few villages, the chiefs acted as a deterrent and asked the parents to hide their children. The reason cited had been purely on economic grounds. The chiefs felt accountable to its people and wanted the poor parents not to experience any setbacks in their agricultural activities or suffer from loss of labour, which usually happened either as parents had to attain to the sick child after the vaccine or the time needed to invest during the process of child immunization.

4.4.1.5. Benefits and importance of the vaccine

In general, most of the mothers interviewed exhibited no understanding of the benefits associated with immunization in both the district. Neither do the mothers have the information on the type, doses and nature of vaccine given to their children. The awareness levels of the diseases protected were also very low except for a few mothers who took their children to the private institutes in Imphal West.

Interviews with the parents in both the district showed that knowledge about the preventive aspects of vaccination remained scarce. Those mothers, whose children were vaccinated, took the services thinking their children will be protected from one

of the vaccine preventable diseases; polio is one that has been commonly cited, followed by measles. About few of them thought that vaccination provided protection from one of the vaccine preventable diseases and other diseases like diarrhoea, eye flu etc. Some thought vaccination protects their children from AIDS/Sexually transmitted diseases whilst a few mothers even considered their children had been protected from all childhood diseases.

Likewise, the knowledge on the doses and the names of the vaccines were found to be low in both the districts. Out of fifty-nine mothers, one grandmother and five fathers interviewed, only a small proportion of the mother could name OPV[22] and BCG [23]as a vaccine, but the majority were not able to correctly identify the names of the vaccines. Significant proportions of mothers lacked the knowledge on the number of doses needed for each type of vaccine for their children in both the districts.

Majority of mothers could neither differentiate the types of vaccines nor understand the benefits associated with them. Another motivating factor for them to access the services were accounted to the pressure applied while mobilizing by the community health workers like ASHAs to access the services.

4.4.2 NRHM Communization processes

4.4.2.1. ASHA Programme

The presence of ASHAs instigated an overall positive impact on the program. All the villages had ASHAs in place in both the districts. The ASHAs were given Rs150/ per child on the successful completion of the child with the six basic vaccines, as an incentive for mobilizing the children within two years of age. Majority of the ASHAs in both the districts played an active part as a link worker and supported the ANMs in organizing the camp. The presence of ASHAs in the villages was known to the majority of people. More than half of the ASHAs who were interviewed disseminated information on the venue, location and time of the out-reach camps and the

[22] OPV-the mothers named polio as the name of vaccine

23 BCG-the mother didn't name BCG but use TB vaccine as the name of the vaccine

availability of the ANMs in the respective sub-centers. Maintaining record of all the eligible children in the ASHA's diary and keeping a track on the statuses of each child in their catchment areas were activities most of the ASHAs performed under the UIP. Besides, majority of them took up counseling and follow-up activities to persuade those parents who were reluctant to utilize the services.

> *"The ASHAs provide us the information when the ANM will come to the school. She also tells us we should take our children if we want our children to be free from diseases."-Mother, Tamenglong*

Mothers in both the districts agreed that their presence had been felt and had impacted the programme coverage. Their mobilization works as a reminder for most of the mothers. One ASHA in a village in Imphal West kept the immunization card with her so that she could personally monitor the vaccination status of the children that falls within her catchment area. Two ASHAs in Tamenglong developed and improvised different mechanisms to coax and attract the parents to the programme. Some of the ASHAs mentioned the mechanism which had been very successful amongst the parents was the enforcement of the idea of a mandatory vaccination card as a proof of enrolling children in schools.

> *"I sometimes tell the parents, who are reluctant to take the child for the vaccines, if they don't have the immunization card their children cannot go to school as these days most schools will ask for the card and check the immunization status of the child before admitting them. This way they keep the card properly also for any future reference and access the services at the same time" –ASHA, Tamenglong*

As observed commonly in both the districts, the ASHA programme had successfully managed to provide the role of the link worker as envisaged under the NRHM and health related services like the ICDS. Most of the ANMs felt their helping hand has made them conduct the services with ease. Whilst, in Imphal West with ASHAs working actively in health related activities, the AWWs had withdrawn their role majorly in activities related to child immunization .The ASHAs as well as the AWWs shared that the mobilization activities concerning child immunization had been handled solely by the ASHAs and the AWWs relied on them for the information and records related to immunization. AWWs shared

the records and started shifting their priorities of work towards education and nutrition aspects of the ICDS programme.

4.4.2.2. Place of Delivery (Public/Home)

The source and place where the information on immunization programme was received significantly influence the rate of utilization of UIP services. Health workers, relatives and women in the community were cited as the informants whose suggestions were taken up positively by the mothers in both the districts. The place of delivery had determined the kind of information mothers received for child health care. Most ASHAs in Imphal West persuaded and mobilized mothers to opt for institutional delivery in the study villages. Moreover, with the declining rate of Maibi[24] in the study villages in Imphal West most women go for institutional delivery but it is not the same in Tamenglong. Amongst those women in Imphal West who had opted for institutional delivery, cases of the staffs and women in the hospital ward acting as a source of information about the UIP had been mentioned. Out of those mothers who received the information, majority of them followed the advice and validated the information from the other staffs in the hospital or in the community level when the ASHAs come to mobilise them. These mothers shared that, when the same information was provided at the institute and when received again at the community level for the second time through the ASHAs and ANMs, they utilised the services without a second thought. In Tamenglong as most of the mothers opted for home delivery, they get the information about the UIP mostly from the ASHAs.

> *"I overheard the mothers talking about the vaccine shots a child should receive in order to be healthy while I was in the hospital at the time of*

[24] Maibi are the local name of the traditional healers or the Traditional Birth Attendants. They are also sometimes seen as a messenger from the gods/goddesses. Basically, people looked after them as someone with some super-natural power and who can heal somebody from diseases or ailments. The younger generation maibi are not able to learn the skills and continue the lineage of delivering children leading to dearth of TBAs in the study villages.

delivery of my son. So, I further enquired the nurse before I was dispatched from the Hospital."-Mother, Imphal West

Amongst those mothers who opted for home delivery in both districts, the chances of some mothers validating any child health care information especially for child vaccination had reduced. Some mothers had received the information as a second-hand information from women in the community and from the health worker. Out of these women, a few got the information in a half hearted manner from the women in the community. The mothers shared that even those women who provide them the information had limited knowledge and thereby limiting the scope for clearing doubts and seeking further information. These mothers were told that vaccine shots were for the well –being of the child. Others who received the information from health workers like the ASHAs and ANMs hesitated to question their doubts openly. Some of them followed the advice while a few of them undermine the information provided.

4.4.3 Selective Immunization

4.4.3.1. Convenience of Place and Time of Immunization

Selective immunization has been an option that had been found to be practiced in both the districts depending on a host of factors. The factors cited were related to the circumstance most mothers endured and the multiple roles these women played in their lives. Under those circumstances what she decided best for her child affected the programme coverage.

Most mothers in the study areas usually took all the responsibility for the health of the child that included getting the complete doses of vaccines. In such circumstances, the mothers' decision for accessing the services depended largely on the nature and load of household chores on the day of the out-reach camp. The wide range of household chores which they had to attend to was cited as a common reason for the child missing some of the vaccines. Some mothers shared it was hard to make it a point to access the services in the absence of any support from the family members in the household chores when the camps were held in the village.

The nature of information disseminated and received were also found to have a strong influence on the decision of opting selective vaccination amongst mothers in both the districts. The 'drop-outs' that has been found, was a cause of lack of information amongst mothers on the rationale behind full immunization .Some mothers thought that the child had received the protection after some doses were given to the child. These mothers rationalized that their children has received the sufficient vaccines and drop-out. The lack of knowledge of most mothers on specific number of the dose requirement specified for protecting the children from the six-basic vaccines was found to have contributed in the drop-outs of some children.

In a few cases, when mothers missed the services during the outreach services the option for utilizing the services in alternative health facilities was considered in both the districts. In Imphal West, children were taken to RIMS[25], Imphal where the frequency of services was more; once a week as compared to limited services in the nearest sub-centre or the outreach place. The option to go and access the services in better service places, had confronted conditions like extra expenses, leaving agricultural work and leaving household chores, which restricted the mothers in opting to choose for this alternative service resulting in the selective access of the services.

> *"I can't leave the household work and take my child. I know when the nurse comes to the village school. The ASHA of our village gives the information but it becomes difficult when they come when I have loads of work at home. Whenever I was free I took him. You can see in the card too."-Mother, Imphal West*

While, in the case of Tamenglong mothers who had followed the choice of utilizing the services in alternate facilities had to travel a distance that ranged from 10-25 kms from their respective villages till the District Headquarter or the Sub-

[25] RIMS: It is an institution of regional importance catering to the needs of the NER in the field of medical education by providing undergraduate and post graduate courses. It is amongst the four designated family health welfare centre where RI is carried out.

centre. Making the choice accompanied a set of issues which most mothers dreaded to undergo once experienced with the same child or with an elder children. One such experience has been the power dynamics that towners, relative in Tamenglong headquarter and the villager, mother-child duo undergo. The discomfort and the agony of staying for a night at a relative with a crying and sick child was an option these mothers did not find as favourable. Also, the distances to be travelled when the mothers have to either access the services in the sub-centre and the District headquarter were pretty daunting. The experience to 'piggy back' the child after receiving the shots in the buttocks or the thighs were experienced which women dreaded.

> *"I took my elder daughter for the vaccination in the Tamenglong (Family welfare centre which is the designated place for immunization). It was very difficult during her time as the nurses never use to come to the village. We have to walk all the way to Tamenglong with the small child on the back and umbrella in one hand and on the other hand the small bag to stay overnight sometimes. With a howling baby after the injection and staying at somebody's place was so difficult. If the nurse comes to the village I take my younger child otherwise I don't make any effort to go to the district headquarter and do not want to go through that experience anymore."-Mother, Tamenglong*

4.4.3.2. Choice of Health Providers

The quality of services provided in some health facilities in an equitable and efficient manner were found to be a crucial factor that influenced the level of utilization of services in both the districts. As the responsibility of delivering services falls primarily on the health workers, their ability to provide services to different socioeconomic groups, their technical competence and motivation level with which they performed their jobs contribute a crucial role in families accessing and utilizing efficiently. In Imphal West, the misbehaviour of some health workers led to a few mothers boycotting the services available in a particular health centre and going to other facilities instead. While some mothers continued to use the services in spite of the ill-treatment and a few proportions just leave the services all together.

Out of those who boycotted the services a very few made the choice to go in facilities like RIMS in Imphal or other nearby sub-centre shelling out more money, time and leaving household chores unattended for a longer period. The choice to access the alternative facilities by a few mothers make them forgo the services available in the nearby CHC or the sub-centre and make them take extra efforts which were not needed as the services were available at their disposal. These experiences were only with Imphal West mothers. Though a repercussion observed has been denying age appropriate vaccines amongst a few children as mothers had to plan factoring in other aspects while deciding the go to the alternative services. Amongst those who continued to avail the services in spite of the ill-treatment, had to succumb to loss of dignity and experience personal discomfort; and for those who shy away from the above choices had their children missed certain vaccines or the complete vaccine for the younger child. These choices did impact the output of coverage of the UIP.

Another, minuscule proportion of mothers had accessed the services in private hospitals. The reason for opting private institutes were cited as convenience and personal reasons like receiving support from family members in the paternal house.

> *"There is a nurse in the CHC, who will tell us, you Muslim have so many children and your children cries all the more. I nearly slapped her once but I left her thinking she was younger than me. I guess my child could not get one or more injection because of that. Otherwise all the staffs are nice and it's that nurse who seems to have problem with everyone. Anyways, we prefer to go to Imphal and do all the work. The staffs are very nice and cooperative in Imphal.-Mother, Imphal West*

> *"The ASHA in our village doesn't tell us about any information and neither do we get to hear from others about the immunization camp. I take my child across the river to get vaccines for my child as it is my maternal house and the ASHA there is very nice and tell about all the health related information. My parents let me know when they get to know when the camp is organised in the village."-Mother, Imphal West*

4.4.3.3. Nature of Services

Service factors have been found to pose as a significant barrier to receive the vaccines on the recommended schedule in both the districts. Repeated visits and rounds some mothers had to make to access the services resulted in selective vaccination. The majority of the mothers had at least come back once without receiving the vaccine from the camp. A few had to make at least two rounds and more to the camp till the vaccine was given to the child. Very few mothers got the services immediately without being sent back. However, the experience was more while accessing the services in sub-centres than the district hospitals or the CHC. Amongst those mothers who were sent back, the reason cited to them were less number of children, shortage of vaccine which was reported very often in out-reach camp and the particular child had not reached the required age for the scheduled vaccine. Very few were not given any reasons for being sent back away from the health centre.

4.4.4. Social factors

4.4.4.1. Gender Biased Health Education and Program Design

Immunisation services have a gendered orientation in how the services were presented, and implemented in the communities in the study area. All fathers interviewed in the study neither received any information nor took part in utilizing the services of their children. The involvement of the fathers in child care was restricted only when their children fell sick and needed treatment. Neither did the fathers get any information about vaccination nor the vaccine status of their children. Out of the five fathers who were interviewed, none of them knew the benefits of the programme. Most information seldom reaches them as the program targets mostly the mothers.

> *"Nobody tells us about the injection (vaccine) which the child is supposed to get. It's the mother who takes care of the child and she has all the information. I am not aware of anything."-Father, Imphal West*

Link worker like ASHAs in both the districts were involved in selective service delivery. They mobilized and sensitized the mothers about the program and left the fathers. Selective information was shared to the fathers, and the target was emphasized mainly to the mothers. ASHAs, who were interviewed, gave detailed information to the mothers and did not feel the need to inform the fathers. Only some of them had reported to counsel the fathers and provided the information as the fathers were the reason for the women for not utilizing the services. In such instances, the ASHAs had to do selective counselling specific to those fathers.

The role most fathers had to play in the household in the study area as the sole earner of the family made them mobile and stay outside the house most of times for work and other activities. The few times when health workers carry out mobilization activities these fathers could not be contacted. They were mostly left out from the information sharing processes. Some health workers like ASHAs and ANM thought it was not necessary for them to explain about the programme to the fathers besides their presence in the house.

4.4.4.2. Security of the Staff

Growing concerns in the wake of increasing insurgency and risk arise due to the remoteness in the location of the villages was summed up as a barrier by female staffs particularly in Tamenglong districts during service provisioning. Outreach activities were found to be a one person show wherein the ANMs were responsible to conduct the activities without much assistance from other staff except for the ASHAs, whose help usually gets restricted only to mobilizing the children. The ANM themselves had to basically manage the activities all alone, having to carry the vaccine carrier to the site, while walking down for miles to reach the villages had posed as a difficult barrier, particularly in Tamenglong. All the ANMs interviewed in Tamenglong district had reported walking at least 15 kms to reach one of the villages that come under the catchment area of her sub-centre. The inter-village distance from one village to another village ranged from 15-25 kms. The ANM that handled the Phuanguan sub-centre had five villages under the sub-

centre; all four of them within 3-5 kms range except for one Namtiram village, which was 9 kms away from the sub-centre. The roads to Namtiram were not properly paved and jeeps, the only public transport available had very poor frequency and runs depending on the availability of the passengers.

The option of finding an escort or a volunteer from the particular village where the camp was scheduled was provided as a solution to the problems of the ANMs by the district officials. A small amount of Rs 100/ per day had been earmarked and dispatched in the district for utilization on the day when such out-reach camps were organized, subject to the decision on how the ANMs want to utilize the fund. However, finding for an escort and delay in dispatching the fund gets in the smooth organization of the camp besides the extra monetary support. In such cases, husbands and mother-in laws usually becomes the escort. Waiting for either the husbands or the in-laws to accompany them had been really inconvenient for some of the ANMs particularly when they had to stay back at night in the village and had to manage the logistics themselves.

The safety concerns of performing the duties especially during wet seasons when most of the short-cut route leading to the villages get quite dense with bushes and trees have been shared as very uncomfortable by most of the ANMs. All the ANMs interviewed had shared and reported of re- considering, cancelling and even delay in carrying out the out-reach camp at least once during their service tenure.Female staffs who were deputed to carry out the activities in the measles catch up campaign in some villages of Tausem blocks faced strong resistance from the parents. Parents warned them of physically assaulting them if they insisted on providing the services to their children. In cases like this the security of the staff especially the female staffs had come as a bigger concern rather than achieving the target of the programme.

Unlike Tamenglong, ANMs in Imphal West did not report any such problem while carrying out the out-reach activities.

"We have to carry the vaccine carrier and walk for sometimes15-25 kms in the forest if we have to organize the camp in the village. Usually, my husband accompanies me if I organized such camp. It is very difficult to get an escort if my husband is busy. After we spoke to the officials they have started dispatching Rs100 for the escorts but in these days it is difficult to get an escort with that kind of money."-ANM, Tamenglong

"Both me and my colleague (nurse) go together to organize the camp. Sometimes, we take lift from the trucks /Lorries that comes to get wood. For the measles catch up campaign, we paid somebody with a two wheeler to get us in the village from our own pocket as we were given targets. Otherwise, we think twice before going to a village in our catchment areas. If they come to the sub-centre we are always there"-ANM, Tamenglong

"Some of the nurses are from other ethnic group. There was this nurse (Meitei) who had to come with her mother-in law to carry out the immunization camp. What do I do? Security is also a concern as most of them have to hold for one night and in such situation how do I force the nurses to be regular in their duty station. The infrastructure problem is a major setback in Tamenglong".-DIO, Tamenglong

"Some of the nurses who were part of the measles catch up campaign came back really angry. It seems some of the parents warned them of physically assaulting them if the nurses insist on giving shots the vaccine shots to their children" - DPM, Tamenglong District

4.4.4.3. Mother's Subservient Status in the Family

Specific barriers to immunization revealed power confrontations in the families as women's autonomy to decide on children's vaccination were influenced by her position in the household. Besides a very few mothers in Tamenglong and Imphal West, majority shared that their husbands did not stop them and had prevented them to access the services. Those few mothers who were objected could not bargain their desire and convince their husband to allow them to take the child for the vaccines. Some of the reasons given by these mothers were, *'their husbands didn't like the child crying whole night after the vaccine', 'another said the husband had boycotted the ASHA in the village as she didn't give the money which they were entitled to after the home delivery under JSY and as she does the mobilization work, anything that was associated with her was prohibited by her*

husband' and '*some said their husbands were not happy with the services provided to them*'.

> *"I only told the mother not to take the child again for the vaccine. The last time he had fever for almost a week and we had to spend a lot of money to treat him. On top of it those injections they give him on his thigh makes it very difficult to hold the child. You can't lift him up also and the child keeps crying the whole day."-Father Tamenglong*

4.4.4.4. Gender Differentials

Specific gender related barriers were not observed as a predictor for accessing the services of the UIP in both the districts. The parents' motivations to ensure the health of the child through the immunization services were driven by a constellation of other factors rather than the sex of the child. Neither does the decision to 'drop out' nor completely 'missing' the services, nor does utilizing the services have anything to do with the sex of the child. In both the districts the attitude of the parents are same for both the sexes when it comes to the decision for utilization or not utilizing of the services. The majority of the parents shared of treating their children in similar fashion, selective neglect of the girl child were not practiced even if the circumstances of receiving the vaccine were not conducive. Not a single mother in the study population reported any discriminatory approach for the girl child when compared with the boy child. The decision to access the services was not based on gender of the child but more of other factors. All the mothers' did not practice any differential on accessing the services and was based on other factors rather than the sex of the child.

> *"A child is a child whether it is a boy or a girl. If I take my child for vaccine shots I don't see it is a boy or a girl but whether I can leave the elder child with someone else"-Mother, Tamenglong*

4.4.4.5. Geographical Isolation of some Ethnic Groups

Geographical isolation was highlighted as a crucial factor in the delivery of the services in Tamenglong especially in those pockets where minority ethnic group population was habited. In Tausem block, the Chirus, Khasis and Kukis were

populated in small pockets in the fringes of the district bordering the other north-eastern states like Assam and Nagaland. The groups lived in very adverse condition without proper food, clothing and other basic amenities. The unfavourable geographical conditions with steep hilly terrain, three major rivers of the districts namely Barak, Makru and Jiri rivers passing before these villages from the district headquarter, and poor road and transport system made these groups isolated in the service delivery system. The Oinamlong PHC along with the two sub-centres in the Tausem block caters the health needs of these populations and are the only health facilities available in the thirty one inhabited villages. With geographical challenges in addition with lack of other health infrastructure in the Oinamlong PHC like non-recruitment of the staff and absenteeism of the staff, had created a jolt in conducting the services. No such cases could be seen in Imphal West. However, the difficulties that had been highlighted in the PHC, Oinamlong, while working with specific ethnic groups were from the experience documented during the measles catch up campaign by personnel in the district mission office as no official reports had been received since Karuna Trust took over the administration of the PHC. Since then no information on RI records has been received.

Besides the geographical isolation some sub-tribes like the Rongmies in Tamenglong amongst the Zaliangrong Nagas being a sub-tribe with higher population density, higher education state and being in better profiled jobs hold an edge as compared to the other sub-tribe groups like Zemeis and Liangmeis. The sub-tribes groups are found scattered in all parts of the Tamenglong district however in the outskirts most of the sub-tribes are found congregated in one village: all Liangmei village, all Zemei village etc. amongst the Zeliangrong Nagas.

> *"The Zemei colony is one area where I find it difficult to work with as they are poor and less educated. The rest of the areas I cover is smooth to work with."-A Rongmei ASHA*

4.4.5. Immunization Delivery System

4.4.5.1. Cold chain maintenance and Logistics issues

Barriers in the logistics of cold chain maintenance had emerged as an upfront barrier experienced in both the districts. Power supply is a huge problem in Manipur with the state facing major power crunch; characterised with frequent power cuts and load-shedding. Generators were available to provide the back-up power supply and extra budgets had been earmarked to address the issues. Even some CHC and PHC in the state had been equipped with solar inverters for the back -up. However, the political turmoil in the state made the normal supply of petrol/diesel hard and the frequent fluctuation in the rates in the black market made it difficult to manage the finances for the maintenance of these generators. The DIOs of both the districts had highlighted it as a major challenge in cold chain maintenance. Even though generators were available but maintaining them with the sky-high fuel price coupled with unavailability of the fuel becomes a barrier. Besides these challenges vaccine supply had not been disrupted in the respective PHC and CHCs in both the districts; and the supply and flow of the vaccine had been regular without any problem in both the districts.

A constant bickering between the staffs in the state and district headquarters had been reported in Tamenglong during the flow of vaccine supply. The stocks of the entire district were stocked up in Tamenglong headquarter from where supply of the entire districts were carried out. Some PHCs like Hauchong and Noney which were closer and more easily accessible in terms of transport and other facilities from Imphal city had asked for a direct transfer of the vaccine. The denial from the Imphal staffs had resulted in an untoward bickering even though the supply had not been disrupted.

A common administrative problem was found to be magnified in some of the remote areas in Tamenglong. Frequent transfer of staff, absenteeism and lack of staff were mentioned as logistics constraints. Out of the nine villages where the study was carried all the sub-centres had the ANMs stationed but some sub-centres

in the district were reported to have no ANMs like the Sonpram sub-centre for almost two years. Absenteeism of the staff in the duty station had also been found as a barrier. However, in Imphal West the lack of motivation amongst the staff to carry out their designated activities and absenteeism in the facilities situated at the outskirts had been a cause of worry.

4.4.5.2. Geographical Distribution of Health Services

The geographical distribution of health services has been a constraint in the access of immunization services, given that the distance between the facilities and the families imposes additional difficulties in the use of the services. Out of the nine villages in the study area, there were three sub-centred villages, one CHC village, one District hospital village and four villages without any health centre. Services were provided frequently in the sub-centred villages and those who were far off from the sub-centre had to depend mostly on the out-reach camps. However, given the problems encountered during the out-reach camps which included shortage of vaccines, long waiting hours and erratic scheduled dates of the camps, relying the services in out-reach camps had hampered the growth of coverage .People in the CHCs and District hospital coverage areas did not face geographically imposed problems. The villages without any health facilities suffered the most in both the districts.

Understanding the spatial dimensions in both the districts had brought out a problem encountered in accessing, especially that of the inclusion and exclusion criteria amongst the beneficiaries of the programme. The location of the facilities had determined the exclusion and the inclusion of who will access the services. The phenomenon was found only in Tamenglong in the study. Villages located on the fringes of the district bordering Senapati district[26] in Tausem block, were

[26] Senapati is a hilly district of Manipur neighbouring the Tamenglong district and had major population concentration of Vaiphei and Thadou, who are Kukis.

inhabited by the Kuki population. These groups would opt to access the services in Kangpokpi in Senapati district or go to Imphal but would not like to access the services provided in the sub-centre where the Nagas inhabited. The tribal ethnic clash between the Nagas and the Kukis some years back in1997-98 had increased the sense of insecurity, which people still harboured. In addition, the limited services available in the sub-centre, the kind of treatment and experience they had from these facilities influenced their judgements besides these facilities being available at their disposal, the Kukis shunned away from utilizing maximum of services, immunization services being one them.

> *"Some of the minority ethnic group like the Nagas would not access the health services provided in the nearby sub-centre or the PHC. They would rather go to Senapati or Imphal for health issues" –Block Programme Officer*

4.4.5.2. Proximity to Health Facilities

Proximity of the venue of the immunization camps ensures greater participation in both the districts. The majority of the mothers interviewed preferred to access services within their own communities if the services reached them. However, the proximity of the services needs to be coupled with other factors and was not taken as the sole deciding criteria considered for accessing the services. As reported majority of mothers in Imphal West had accessed the services at least once in the Imphal city even if the rest of the vaccines were received from the out-reach camp or from the nearby sub-centre. A few had accessed the services provided in CHC while in villages like Laphupat Tera Khunao[27] of Imphal West, the option to use a boat and accessed the services in another neighbouring Arong sub-centre of Thoubal district[28], were considered more convenient . These mothers crossed the river and accessed the

[27] Laphupat Tera is a big village and it is divided into hamlets. Laphupat Tera Khunao is one such hamlets of the village.

[28] Thoubal is one of the valley districts of Manipur. It is the bordering district which is separated by a river between one of the village Laphupat Tera in Imphal West district where the data was collected.

services in the other sub-centre which was closer from their sub-centre. Cross-immunization had been reported high in the Wangoi block. The reason for deciding to use alternative services was cited as convenience and better services. In case of Tamenglong, most mothers relied on the services provided during the out-reach camp. A few took their children to the district hospital and some accessed the services provided in the sub-centres. Services provided in the out-reach camp has been a preferred option for most of the mothers interviewed in the district in the study.

Distance came out as a common barrier in the service utility of the programme in the periphery of both the districts although the impact was found less in Imphal West. Mothers had to travel 10-15 kms to get at least one of the vaccine in Tamenglong. About a few proportion of mothers travelled 3-5 kms .Some travelled for less than 2 kms to reach the site of immunization. Whereas most mothers in Imphal West had to travel less than 1 km to the nearest health services; some had to cover the distance of more than 2 kms while others had to travel more than 25 kms to Imphal city to access the services

The distance when coupled with the barrier of unavailability of local transport adds more to the constraints to the utilization of services. Autos were available till the health facilities in Imphal West while a few had to walk as it was within half to two kms range and some had to use a boat to reach the sub-centre in Thoubal district; but the scenario is just the opposite in Tamenglong as the majority of the women had to walk till the health facilities and it was only a small proportion of mothers who travelled by autos and motorbikes to reach the health facilities. However, in some villages the inter-village distance were so large and walking from the nearest motorable road to reach a particular village like Chaton, Kaboram, Lenglong, Kaiphundai, Pankotphai etc of the other three blocks namely Tamei, Nungba and Tausem, it took more than half a day. The staff reported that until and unless some target oriented programme were carried out like the measles catch up campaign, no routine immunization camp were organised regularly in those villages. The staffs posted in those villages were asked to reach those areas at least 3-4 times a year to conduct the services.

"The inter-village (IV) distance is really big. It is very difficult for our health workers to reach them .Most of the villages required working on foot for a time range between 2-4 hrs. If the nurses organise a camp they have to hold for one night there as it is difficult for them to come back. So at the micro-plan we have chalked out the plan in such a way that at least the nurses reached those villages 3-4 times a year on those difficult to reach areas." -DIO, Tamenglong

4.4.5.3. Other Health related Sectors

Proper roads, transport networks and communication lines contributes to increase the opportunity of the communities to access the services .The experiences in the two districts had differed to a great extent because of these factors. The problems of access and communication were particularly marked in Tamenglong as compared to Imphal West. A little less than half of the villages were motorable (GoI Ministry of Tribal Affairs) in the entire Tamenglong district. Areas with the lowest coverage were often those inaccessible by road in the district. However almost all the villages in the study area were motorable but majority of the villages had unpaved roads and were muddy and not motorable round the year. The arrival of the health workers is also dependent upon good weather conditions. The exterior part of the villages like Akhui could be reached by bus and jeeps, but villages like Dailong, Kahulong, Ramlalong had only jeeps available as the only public transport, but that too were available depending on the passengers' availability. Villages like Bamaijang and Nrenglong were inaccessible about 3-4 months in a year due to the dense forest and bushes, en route these villages. While in Imphal West, all the villages in the study area were motorable and some form of public transport was available throughout the year. The frequencies of the public transport were also good. All the villages had sound road facilities and well connected road.

BSNL[29] had been the only telecommunication service provider in most parts of Tamenglong except for Noney where Aircel[30] had its services. Very few places had functional telephone landline connection. The available mobile services were very

[29] BSNL is an Indian state-owned telecommunications company in India.

[30] Aircel : Private tele-communication providers in India.

limited and poor. Majority of the staff had the opinion that if at least the phone connections were available it could have saved a lot of time amongst the staff in the PHCs and CHCs as communication for vaccine shortage and supply could have been much easier and convenient. However, the scenario in Imphal is different with good tele-communication line and facilities. Some of the staffs have the opinion that transport and tele-communication lines act as a support system and were used as an effective mechanism for the successful implementation of the immunization programme.

> *"If the mobile services were good we could have been able to communicate in case of shortage of vaccines with the district headquarter and the respective PHC and CHC. -DIO, Tamenglong*

4.4.5.4. NGOization of the Services

The administration of Oinamlong, PHC has been maintained by an NGO, Karuna trust. The trust has been looking after the PHC since 2009. The PHC had been reported to have a shortage of staff with the crunch facing more in the nursing cadre. The PHC is located in a remote location wherein the staffs posted in the institute had to face harsh realities of staying in remote areas like stocking food and other basic necessities in advance. With reported pay scale lower than other health institutes in the state for paramedical staff, the PHC has been reported of non- retention and shortage of para-medical staffs.

Power failure had been reported for more than six months back in the block prior to the time when the field work was carried out. The coverage of the child immunization programme has been a set-back in the catchment area of the PHC. The district staffs in the district mission office had not received any reports on routine immunization nor any official document on the implementation of the immunization programme since the NGO took over the administration.

> *"Since the NGO, Karuna Trust took over the Oinamlong PHC, no updates on the routine immunization programme have been reported in the District Headquarter"-Block Programme Officer, NRHM*

4.4.6 Beneficiaries' Reaction

4.4.6.1. Experience with different Ethnic Group

Inequalities in access of services between different ethnic groups had been reported; this is a concern highlighted in both the districts. Certain groups turned out as a homogenous group with similar characteristics of irregular access of the services. In Imphal West, some ASHAs had to put more efforts in mobilizing certain section of the society. They highlighted that those areas inhabited by Muslims needed more of their time and even some amount of persuasion to the parents to get the child for the vaccines. A few of the staff including the ASHAs, who were interviewed, cited the reason as laziness and lack of interest of the parents, while a few cited their poor economic background as a reason for parents inability to take active part in the programme. However, amongst the staffs a consensus upon an assured positive results in the service utilization of the programme amongst these groups were found when extra effort and a little hand-holding like frequent mobilization and accompanying the mothers to the sub-centre or till the site of the out-reach camp, had given positive results with mothers following their advice and accessing the services. Some ASHAs who were interviewed had accompanied many mothers to the immunization camps. Some go for repeated mobilization and send repeated messages to the mothers till the scheduled vaccines were received by the child. While in Tamenglong, coverage of the programme in the areas where the minority population like Hmar, Chiru, Kukis and Khasis were inhabited in majority and were hard to carry out frequent mobilization activities suffered in terms of coverage. The ASHAs are in place but without any supervision and assistance they also do not contribute much for developing the health of the area. The difficulties of working with different clans of the same sub-tribal groups had been reported by the ANMs and ASHAs. The Zemeis and Liangmeis, both belonging to Zeliangrong Nagas were comparatively difficult to work with as compared to Gangmeis or the Rongmeis. The reasons cited both by the ANMs and the ASHAs were poor education status and economic status amongst these sub-tribe groups.

"The Muslim population in my catchment area is a problem for me. I faced biggest challenged with them. No matter how hard I try they just do not want to come out and vaccinate their child. They are just lazy and it has nothing to do with them not getting time or busy with some other work. We go to their villages once in a month and the staffs are available most of the time in the Sub-centre and PHC."-ANM, Imphal West

4.4.6.2. Adverse Reaction/Side effects

Vaccine induced reactions such as mild fever, swelling and rashes were found common amongst the children who had been vaccinated in both the districts. Amongst these children, most mothers shared that the problem subsided in one-two days. No cases of adverse reactions had been reported in any of the study areas. Most mothers did not consult anybody when the side effects were developed and waited for it to subside on its own. Some mothers reported of casually asking the ASHAs and the ANMs for which they were told as a completely normal process. The advice of the local healers has been seek and consulted by a few proportions of mothers in Tamenglong when the child continued to have fever for about three days. While some mothers in Imphal West took their children to RIMS, Imphal when the fever didn't subside. The reasons for consulting the health providers were mentioned as the mothers' concern of that particular child as the child was frail and their refusal to take breast milk made them worried. These mothers didn't blame the vaccines for the fever. Unlike these children, some children did not have any of side-effects.

Medical histories of the children were recorded mostly before administering the vaccines in both the districts. The staffs took the records from the mothers and decide whether to administer the services. The majority of the ANMs except for one reported of administering the vaccine when the children were brought with a mild fever. Most of the ANMs avoided giving the shots if the child suffered from severe diarrhoea, stomach pain or any other ailments. In such cases, a few of them instead gave first aid and referred the child to the nearest health centre or to the doctor.

4.4.6.3. Economic Reasons

Economic factors were an important deciding factor when families make the decision to access the services as using the services involved direct and indirect cost. More

than half of the families in both the districts were within the income bracket of Rs 2000-4000 per month, one-fifth from within the income bracket of less than Rs 2000 per month and only less than one-fifth of the families composed of families with income bracket Rs 10,000 and more per month. Majority of the fathers in Tamenglong were engaged in agricultural activities, both as cultivators and labours. Amongst the cultivators as all of them were marginal farmers, the produced from the land is not enough for the households. While in Imphal West most of the fathers were daily wage labours .They go to Imphal West to work and get Rs 150-200/day but the earning is dependent on the availability of work as there are many days when these fathers do not earn anything. Rest of the fathers in both the districts were drivers, carpenters, petty businessman and fisherman, and survived with the bare minimum. Majority of the mothers were charged an amount of Rs 15-20 for the cost of the card and syringes in both the districts. Most mothers expend an amount that ranges from Rs 100 to 40 in Tamenglong on the expenses that includes snacks , transport fare and gifts for relatives in case the mother-child duo stay overnight while in Imphal West the cost ranges from Rs 100 to20 and were mostly used in transportation. These indirect costs for utilizing the services act as a barrier in the utilization of the services.

4.4.6.4. Lack of Motivation and Awareness

Lack of motivation had a major impact on the decision of the mothers to access the services in both the district. A few of the mothers besides having all the information and knowledge did not consider it necessary to take the child to the camp. When probed further some of the reasons were linked to lack of motivation and knowledge to the benefit of the programme.

> *"I know about the camp in the school. I didn't go as I was lazy and nobody was at home."Mother, Tamenglong.*

Another factor that also inhibited the programme utilization was the fear of some mothers; a few of the mothers in both the districts recollected the experiences of their children getting seriously sick when two vaccines were simultaneously given on the same day. Amongst these mothers, a few thought both the vaccines were supposed to be given on that particular day. While some got worried before taking

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the child again for the next dose of vaccine as they felt the child was too small to receive two vaccine shots in a day. Such experiences made these mothers withdraw from the programme as they were worried from the experience. None of them were explained why the two vaccines were given on the same day except for one mother who was told, that the preceding vaccine was missed.

> *"The last time I took my child for vaccination, they gave him two vaccine shots, one in the thigh and another in the buttocks. After that day he was sick for almost one month with diarrhoea, fever, and vomiting. I took him to Imphal (RIMS, Lamphel). The doctor there didn't say anything but I think it is because they gave him both the injections at the same time which made my child sick for so long. I am scared now to take them anywhere in the nearby hospital."-(Imphal West , Mother)*

4.4.6.5. Information Sharing Process

Clear information triggered positive responses. However, such a crucial factor was a drawback as majority of the mothers were not given any information during the time of immunization in both the districts. The reasons cited by some of the ANMs were the inability of most mothers to remember the information. The ANMs felt that the mothers could not remember the messages even if they tell them. However, to ensure the mothers accessed the services in future most of the ANMs stressed on the overall health benefits of children amongst the information they provide to the mothers.

> *"I was told by the ASHA that these vaccines are given to the children to protect from some diseases. I can't remember but at the time of the injection the nurse doesn't tell us anything. There are children crying, people waiting for them. I guess they can't explain each and everything to us as they have to attend to everyone".-(Mother, Imphal West)*

Most interviewed ANMs counselled the mothers at some point of time to the mothers during the camp. But they do not provide information on each visit of the mothers. The mothers were given information on when the next vaccine was scheduled and in some, a few instructions were hurriedly given like giving paracetamol in case the child developed fever. A small proportion of mothers were

told not to rub or massage at the spot where the injection was given. And others were told that it was normal to get fever or some slight swelling after the vaccine.

Also, the challenges highlighted by some of the ANMs in both the districts for not being able to provide detailed information was the long queues of children, distraction of the mothers to attend the crying child and heavy load of work for her to attain in the sub-centre.

4.5. The Determinants of Immunization Coverage: A Summary

A wide range of determinants that influenced the coverage of the UIP in both the districts has been established in the findings. The determinants are inter-related and in some cases inter-dependent, and are found deeply ingrained in the way how Manipur society has been established. Minority communities like the Muslim in Imphal West; and Hmars, Chirus, Kukis in Tamenglong were amongst the population that had been highlighted as the groups, characterized with under-utilization of the immunization services in study areas.

Challenges related to factors associated with geographical conditions came out as a determinant that had a clear cut influenced on the impact of the coverage in Tamenglong and parts of Imphal West. Greater distance between villages and villages to health facilities, frequency of transport, discomfort faced by female staffs and mothers, failure from the side of health facilities to provide quality services and the associated levels of development of other health related sectors like communication lines and roads, had a strong influencing factor for the programme coverage.

Factors associated with socio-economic condition were established from the findings as a crucial factor impacting the service utilization of the UIP in both the districts. Challenges faced in everyday life situation that emerged from the low economic status, exacerbated with erratic information about the different aspects of the programme like venue, time, and the benefits of the programme, had triggered low coverage. Moreover, knowledge and understanding of the parents were found

not to be the only factor influencing the access to services until coupled with good service provisioning like strong involvement of ASHAs in the programme, the behaviour of the providers, and the social support from family and local leaders to both the providers and the beneficiaries. Social instability of the state also had a negative impact on the logistics of the programme. The provider-client power relation was also established with some providers engaged in selective information sharing with mothers and then to fathers. The frontline workers' less enthusiasm to engage the fathers during the mobilization and information sharing process were found. Health beliefs system of the people has seen to be associated with compliance of the children towards the services depending on their beliefs on the state of the health of the child. Mothers' and family members of interpretation on the health status of the child had impacted the services utilization.

CHAPTER 5

DISCUSSION

The present study analysed UIP coverage output as a marker of the health system. It examined the various dimensions in the health system that resulted in the inequities in the programme outcome. It also examined the scenario of child health in Manipur through the analysis of varied child health indicators from the national and district survey data. The heath attainment of each of the child health indicators of Manipur are compared with the best performers of each of the indicators from the rest of the country. Also, a comparison of Manipur with other states in the NER and within the districts of the state has been done.

Manipur, being diverse in terms of ethnicity, culture, topography, religion and levels of growth, the findings of the study have highlighted the inequities in the larger social system that has led to the inequities in various child health outcomes including the UIP coverage outputs in the state.

5.1. A Rationale for the Existent Child Health of Manipur

A comparison with the national level data with Manipur revealed positive child health outcomes in IMR, nutritional status and child care practices like breastfeeding, and size of the child at birth; the state is on par with the top performing states in the country and there are instances where the state itself has the best child measure in the entire nation. However, the scenario within the states of the NER and within the nine districts of Manipur show a wide gap with some states outperforming Manipur while some states revealing very grim picture. Similarly, differentials across the districts have been marked with the valley districts outperforming their hilly counterparts in most of the child health indicators.

An analysis of the differential within the NER on various child health indicators has shown that the states that occupy the top-spots in the development indices like Mizoram, Nagaland, Manipur and Sikkim show better achievements in child health. States experiencing lower development like Assam, Tripura and Arunachal Pradesh

has shown poor child health outcomes. The region as per the HDI and GDI developed by Planning Commission of India (2009) carried out for the States and the UTs of the country for 1991 revealed the HDI ranking of Assam as 26th, Arunachal Pradesh as-29th, **Manipur - 9th**, Meghalaya -24th, Mizoram - 27th, Nagaland - 11th, Sikkim -18th and Tripura stands 22nd amongst the UTs/ State rankings. Similar report shows the GDI ranking of the NER in 1991 as Assam - 30th , Arunachal Pradesh -18th , **Manipur -3rd**, Meghalaya – 12th , Mizoram -6th, Nagaland – 21st, Sikkim - 20th and Tripura - 29th

Under such circumstances when different states are at different level of development, designing and implementing development programmes, be it health or others without considering the variations and diversity of the region has become a set-back. As highlighted by Haokip (2011), "all policy measures taken for the region have been mostly a uniform policy prescription for the entire region neglecting the diversity of the region. Clubbing the region as a single entity led to the stereotyping of the problem plague in the region". Therefore, the undue neglect and non-recognization of the diversity of the region has contributed to the differential levels of performance in health which includes child health indicators, and the overall development of the region at large.

Manipur's high attainment in certain health indicators has been reasoned with higher achievement the state has established in the development indices, 3rd in the GDI and 9th in HDI as per the 1991 National Development Report amongst all the UTs/States of the country. Further, the greater variation that is found within the districts of the state has been influenced by the uneven development within the districts. The composite index of sectoral development in the state shows the valley districts outperforming the hilly districts, leading to differentials in varied indicators, which includes health outcomes (MSDR 2006). Unfortunately due to lack of reliable sources of information in most aspects of health and the huge lacunae in the number of empirical research carried out in the areas of health and its determinants , has limit the analysis of the better child health achievements of the state. The analysis that has been

drawn for good health attainments in Manipur based on the development indices ends up being an inconclusive and incomplete argument.

However, acknowledging the role of social determinants of health, one can argue in support with the thesis put forward in the National Development Report (2001), the health achievements in Manipur as being an outcome of the unique socio-cultural and economic environment of the state, of which high status of the women being one of the crucial one. As observed those health indicators that have shown more affiliation with the socio-cultural and political milieu are the ones that have attained better outcomes than those that required strong health care services provisioning. Further, the egalitarian nature of the Manipur society with a strong social system wherein the kith and kin, and tribesman ensure the protection of the most vulnerable contributed in determining the health of the people. Under such circumstances the ethos and culture intrinsic to the society gives a form of social security and support system that influences the health status and outcomes (Government of Manipur 2012). Also, the absence of a caste based rigid social construct has translated to ensure that the health care needs of the people of the state are addressed and no particular class or the section of the society falls as a victim under any rigid structure that would act against the health status and outcomes of the people. In such a social set-up characterised by the absence of a very strong hierarchical society, the health care needs gets transfer and assimilate to the prevailing social structure of the Manipur society that led to attainment of a positive child health outcomes. Moreover, health being a pre-requisite of the development indices, one cannot consider health outcomes as an isolated phenomena but to look at it as part of the larger social system that emanate and takes its form from the existing social system.

5.2 Lacuna in Empirical Evidence: A Call for Action

The study highlighted the state of child health affairs in Manipur and the vast scope of areas that need empirical studies to prop the existing state of child health. Major health related programme evaluation or qualitative research in the areas of health is confined mostly to Assam in the NER. However, the scenario of Assam cannot be representative of the whole region considering the diversity within the region. No

study in areas of child health has been documented or carried out in the state of Manipur. The literature available were limited in the form of activity reports documented by some NGOs like LWS, EHA, Don Bosco and other faith based organization in the state. Furthermore, public health activities that were carried out were mainly in the areas of HIV/AIDS and maternal health. The reported low IMR in the state of Manipur which is on par with the best performing states of the country has not been studied and documented; neither are any child health achievements in the state, like the nutritional status. Moreover, the few indicators based on which the achievements were deduced were from the survey data, programme coverage reports, and government reports and documents. Due to the lack of empirical based studies and research carried out in Manipur the analysis of good child health attainment has been limited, it lacks arguments of the different facets of the health systems and the larger social system at large that determine the child health outcomes of the Manipur society.

5.3 UIP: A Situational Check of Health Systems in Manipur

The extent to which health systems provide quality health services in an equitable and efficient manner influences the level of health outcomes of a population. The UIP coverage in the study area shows a high proportion of children who are partially immunized. The proportion of children who drop-out from BCG to DPT-3 was much lesser than the drop-out rate from BCG to measles, which constituted nearly half of the study population. The coverage outcomes of 'full immunization' in Imphal district amongst the study population show a measly 43% as compared to 75% 'full immunization' coverage of the district as per DLHS-3.The high variation in coverage outcome between the district average and the findings of this study was mainly because the data was collected from a poor coverage area of the district. Similarly, the 'full immunization' status of the sample population of this study in Tamenglong district is 43% as compared to the district average of 16.8 % as per DLHS-3.The high coverage outcome of the study population is mainly because the data was collected in the block headquarter which has better coverage outcomes amongst all other blocks in the district. The significant thing of the finding is that one needs to uncover the

disparities masked by the average and needs to look beyond the average to unravel and recognize the inequities amongst different sections and regions that get lost in the average. Furthermore, in an otherwise relatively higher coverage district of Imphal West, a lower coverage has been found in the study. While in a lowly vaccinated district of Tamenglong, a higher coverage was found in the findings of this study. It explains immunization coverage is not uniformly distributed across all population segments amongst blocks, districts and state at large in Manipur. Moreover, it further explains the inequity that has been marked within the different regions of the district that gets lost in the average.

5.4 Accessibility Factor

Accessibility factors were mainly from the dimension of geography, social factors and availability of quality care services in both the districts as indicated by the findings. The determinants of access to the services configured the factors in the system that had shaped the output and highlighted the position of the individual/s in the Manipuri society.

5.4.1. Geography and Social Accessibility

In Tamenglong, the geographical isolation of the study population due to poor road infrastructure, poor transportation facilities and coupled with the unequal spatial distribution of the health services have left many children missed or completely unimmunized. The large inter-village distance ranging from 15-25 kms have left many parents to forgo the services, leading to high drop-out and resulting in many children being unimmunized. Furthermore, the geographical barrier has made the service provisioning irregular in these areas due the constraints face to reach these places by the providers to conduct the out-reach activities like unavailability of transport, long distance to travel with the vaccine carrier and other logistics arrangements such as place of stay and escorts. Moreover, the density of the population of the villages is an important factor to ensure the access to services as the villages in the study area and villages in other blocks of Tamenglong at large are lowly populated and larger areas have to be covered by the providers since the

between the terms appearing in the linear combination vanish,

$$\langle X_i^n \cdot X_j^{*m} \rangle = 0 \qquad \forall \;\; n, m \qquad (i \neq j)\,. \tag{D.3}$$

The characteristic function method is particularly useful in arriving at the statistics of such random variables.

The characteristic function of Z_n can be shown to be the product of the characteristic function of the individual terms contributing to the linear sum,

$$\varphi_{Z_n}(t) = \varphi_{X_1}(a_1 t)\varphi_{X_2}(a_2 t).....\varphi_{X_n}(a_n t)\,. \tag{D.4}$$

If the terms involved in the linear combination are not statistically independent, then the characteristic function will not take up the simple form given in Eq. (D.4).

It is not easy to derive the full distribution of the BipoSH coefficients. Hence the aim is to derive the important moments of the distribution. To derive the moments of the distribution, it is necessary to first derive the cumulant generating function. The cumulant generating function is defined as the logarithm of the characteristic function,

$$g_Z(t) = \log[\varphi_Z(t)]\,. \tag{D.5}$$

The cumulants can be obtained by taking derivatives of the cumulant generating function and evaluating them at zero,

$$K_n = i^n g_Z^n(t)|_{t=0}\,. \tag{D.6}$$

Given the cumulants, it is straightforward to arrive at the moments of the distribution. The explicit relationships between cumulants and central moments till the

government adopted population based norms for health facility and manpower. Another, factor that needs to be highlighted here is the logistics issues of transporting the vaccines in those villages on the fringes of the three blocks of Tamei, Tausem and Nungba, wherein some of the villages takes more than half a day to reach from the nearest motorable road till the village. Furthermore, the gravity of the geographical inaccessibility needs a highlight as the programme which was envisaged to be organised once a week has been told to be made available thrice or four times a year through the out-reach camps in some parts of the districts. While in case of Imphal West many beneficiaries living in closer proximity to a particular sub-centre have to avail services in another neighbouring sub-centre and go to other health facilities in far off places like RIMS, which is 25 kms far from the villages. The findings are not only indicative of a barrier in the spatial distribution of the health services but also signify other inequities in the health system of both the districts like improve road transport and communication system, and nature of services received.

Considering the fact that health institution are in itself a direct manifestation of the social structure of the society and are in itself an institution that emboldens and promotes a hierarchy, a reorganisation of the health facilities in both the districts to check whether facilities are able to promote service utilization needs to be analysed. The findings amongst the Muslim mothers show a totally different experience as Muslims are in minority and the village in the study area where the Muslims are inhabited belonged to a peri-urban area. Though the village inhabited by the Muslims even though belongs to a peri-urban areas but it has the geographical and development features bearing closer resemblance to any village characterised with poor infrastructure development and people depending mostly on agricultural and related activities. Moreover, most of the families in the village where the Muslim were populated were largely from lower economic group with majority of them falling in the income bracket of Rs 2000-4000 per month. Furthermore, the head of the families usually the fathers are daily wage labours. They are neither entitled to any social security benefits programme like the NREGA. They stay in clusters and pockets and are socially marginalised as compared to the majority Meitei population in the area. However, in Tamenglong parents who belong to minority population

groups in the district like Kuki and Hmar found accessing services in Kangpokpi, Senapati district and other alternative facilities like the district hospital or RIMS, a more preferable option then the nearest facilities available. This questions the credential and comfort the parents experience while accessing the available services and pose the question whether physical accessibility of the services ensure social accessibility of the health facility in both the districts. For instance the experience of the minority Kuki population and other minority groups staying on the fringes of the Tausem block. The ethnic clash between the Kuki-Nagas in 1997-98 continued to have its ramification that led to the Kukis opting for services other than those available in the block. The ethnic clash still continues to echo and influences different sphere of lives including health service access. The proximity of the services was found not to make much difference to ensure service utilization until and unless coupled with factors like enhanced trust in health services, social cohesion amongst different tribes groups and the services promote and provide a more equitable service amongst all groups.

5.4.2. Quality and Nature of Services

The quality of services provided by a particular health system signifies a direct reflection of the health system. The general attitude of the health staff, such as their readiness to provide the services, their motivation, their role and behaviour, affects the willingness of mothers to vaccinate their children. In the study areas, ANMs in both districts were marked to take medical history of the children before giving the vaccine shots. Such action helps avert untoward incidences. The motivation of the frontline workers like ASHAs in accompanying the mothers to the sub-centres for utilizing the services and their strong involvement and presence has been recognized in both the districts. However, the selective service provisioning by these workers like more involvement in incentive based activities like JSY and others, and their lack of motivation or failure to enthuse their energy and work in certain activities that the community perceived beneficial for themselves had resulted in downplay of the crucial roles the ASHAs play in the UIP. Some families resisted the immunization programme as the workers didn't extent any help in other services they needed in the

study areas. In Imphal West, in some of the households where the families were found to have linked immunization with other health related activities like JSY, their access in those activities and the kind of help they received from the workers helped in their judgement to either access or boycott any programme or the provider in the health facilities.

Moreover, the 'NGOization' of the health services as seen in the Oinamlong PHC represent a crucial reflection of the nature of the service delivery system. Even though NGOs or other private stakeholder were brought in for better health delivery system but the questions of their credibility and their contribution to bring any positive impact without rectifying other structural inequities in the health system remains questionable.

5.5 Social determinant

5.5.1. A Tryst with Other Priorities

The competing priorities of the low –income families has affected the sincerity towards the services utilization in both districts with majority of the families in the study population, comprised of families in the income range of Rs 2000-5000 per month. In Tamenglong most of the parents are involved in agricultural activities, both as a cultivator and as a labor. These parents need to spend majority of their time in preparing for cultivation as 'jhum' cultivation, a more tedious and more time consuming method of cultivation is practiced in this part of the state. While in Imphal West majority of the fathers are engaged as daily wage labors. Their economic stability is solely depended only if they work. The economic marginalization of the parents undermining the benefits of the immunization services over their livelihood explains the judgements of these parents to go for selective service utilization and sometimes completely missing the services.

However, economic factors could not solely answer the issues of low coverage in the study population as other process barriers had played a complimentary role that has influenced the service utilization and had a crucial role as an inter-related determinant. Time spent, repeated visits and the discomfort of travelling a long

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distance, and the nature of the services provided, all had led to the selective service utilization explaining high proportions of partially immunised children in both the districts.

5.5.2. Differentials in Programme Acceptability

Parents' resistance to the services was marked but more in Tamenglong than in Imphal West. The parents harboured assumptions about the services of the UIP on account of lack of knowledge and information, trust and other challenges confronted during the process of utilization of services of the programme. In families like the ones in the study areas where majority seek health care only when members of the family were faced with major health issues largely due to the socio-economic circumstances, it was difficult for few parents to realize the benefits of the vaccines for improving the health of their children and even if they do it becomes a challenged in their condition to translate the knowledge into behaviour.

Moreover, families have specific information needs and level of understanding based on which benefits of the services were understood. In such situation the programmatic drawbacks of disseminating inadequate information amongst the parents on the types and nature of the vaccines and the benefits in detail has led to misinterpretation and misconception in both the districts. On such circumstances, it was hard for the parents to build their trust upon those providers with whom they hardly get to interact and get assistance in their normal health related activities. The ANMs inability to frequently visit the villages and conduct the out-reach activities more frequently in Tamenglong district and the fathers' hostility against the ASHAs for not providing assistance in programmes such as JSY and yet mobilizing them for immunization services in Imphal West, led to mistrust amongst the people. These families whose health related needs are hardly addressed are otherwise mobilized to vaccinate their children without proper explanation on the purpose of the activities of the programme. The mobilization activities rather than acting as an inciting factor for service utilization bounces back as a cause for the parents to avoid the services.

5.5.3 The Ethno-cultural Shade

The process and structural factors do not solely appear to explain the coverage of the services until other cultural and social factors worked in tandem to influence the coverage. The experiences encountered by health workers in certain sections of the society like the Muslim in Imphal West, and Hmars, Chirus and Kukis in Tamenglong as a group characterized with under-utilization of the services reflected not only differential access but emanates a social structuring that exist in the Manipur society. Mothers in Imphal West who are Muslim but belonging to the lower economic strata while accessing the services had an altogether different experience as compared to the Meitei mothers in Imphal West district. Moreover, the experiences underwent by a Zemei mother differed from a Rongmei mother in Tamneglong. The differences are largely mirrored due to the social position of the ethnic groups in the power structure of the Manipur society. Social cohesion and affiliation between providers and beneficiaries and the power distribution amongst the sub-tribes and ethnic group possessed by virtue of either being more-educated, more access to better profiled jobs, health facilities and being in majority impacted their position in the society, which had a hint in the coverage of the UIP output in the study.

Also, sub-tribe groups in Tamenglong like Zemeis and Liangmeis, which has a lower population density are mostly inhabited in the outskirts of each of the blocks. They are less educated and take less part in the affairs of the district as compared to other sub-tribe groups like Rongmies. The sub-tribes which are in the higher position of the social structuring based on indices such as education, place of stay, political representations, better profile jobs and other social benefits enjoyed better development benefits including health. This divide has carved a gap in the Zaliangrong Naga societies that translates directly to utilization of the services of the UIP amongst the various sub-tribes.

5.5.4. Gender

Gender discrimination has not been marked. The sex of the child had nothing to do with the utilization of the services as emerged from the interviews with the parents in

both the districts. Other factors had a much stronger weightage and could be credited possibly due to the reasonably high social status women in the society hold in Manipur.

5.6 Knowledge Determinant

Information about the different aspects of the programme like venue, time and the benefits of the programme had impacted coverage in the study areas as highlighted in the findings. However, knowledge and understanding of the parents were found not to be the only factor triggering access to services until the delivery system addresses to answer other barriers to bring sound service utilization like hassle free logistics and management support. The lack of staffs in health facilities, absenteeism of the staffs found in both the study areas and 'Ngoization' of the services without taking stock of the prevalent condition of the larger system do not ensure better programme outputs. However, the information sharing process did have the potentials to curb drop-outs as well as increased immunization in the study areas. Mothers who could link the vaccine shots with any health benefits of the child had accessed and fully immunized their children. Furthermore, messages some of the women received about the programme from different sources are not found to be strong enough to motivate and sustain the services access amongst women that lead to drop-outs or complete missing of the services.

To conclude, the dissertation raises a number of issues that needs further studies. Firstly, as mentioned earlier, the varied reasons for the state showing different levels of performance outcome in various child health indicators; a thorough probing is needed to find out the differentials achievements for each child indicators in the state. Secondly, an interesting issue that has come out in the differentials of the experiences amongst different sub-tribes in Tamenglong and ethnic groups in Imphal West that needs to be investigated in depth. Lastly, even though the Manipur society is casteless but other forms of hierarchy exist that needs to be documented and researched on to find out its implications on various development indicators which includes health.

REFERENCES

Books:

1. Bose, A., and Desai, P.B., *Studies in Social Dynamics of Primary Health Care*, Hindustan Publication Corporation, Delhi, India, 1983

2. Banerji, D., *Poverty, Class and Health Culture in India*, Vol.1, New Delhi: Prachi Prakashan, 1992.

3. Doyal, L., *What makes women sick: Gender and the political economy of health*, London: Macmillan Publications, 1995.

4. Fenner, F., India and the Himalaya Area, *Small Pox and Eradication*, Geneva, World Health Organization, 1988.

5. Giddins, A., *Sociology*, 5th Edition, Cambridge , Polity Press, 2006

6. Strauss, A., and Corbin,J., Basics of Qualitative Research: Grounded Theory Procedures and Techniques, Sage Publication, 1990.

Edited Books:

1. Bartely et al. Living in high unemployment economy : Understanding the health consequences in Marmot, M, and Wilkinson, R.G, (eds.) *Social Determinants of Health*, New York, Oxford University Press, 1999

2. Carstairs, G.M., Medicine and Faith in Rural Rajasthan, in Benjamin, D.P., (ed.), *Health Culture and Community: Case Studies of Public Reactions to Health Programmes,* New York, Russel Sage Foundation, Pg. 107-134, 1995

3. Harris-White, B., Gender cleansing: the paradox of development and deteriorating female lives in Tamil Nadu in Rajeshwri Sundar Rajan (ed.) *Signposts: Gender issues in post independent India*, New Delhi, Kali for women, 1999

4. Locker., D., Social determinants of health and disease, in Scamber, G., (ed.), *Sociology as applied to Medicine* , Edingburgh , 5th edition, 2003

5. Marriot, M., Western Medicine in a Village of Northern India, in Benajamin, D.P., (ed.), *Health Culture and Community: Case Studies of Public Reactions to Health Programmes*, New York, Russel Sage Foundation, Pg.239-568, 1955.

6. Morris et al. (1994) in Bartely et al. Living in high unemployment economy : Understanding the health consequences in Marmot, M, and Wilkinson, R.G, (eds.) *Social Determinants of Health*, New York, Oxford University Press, 1999

7. Maring., D., Meitei-Naga Conflict with Special Reference to the Territorial Issue in Manipur , in Jayeseelan (ed.) *Conflict Mapping and Peace Processes in North East India*, Guwahati , North Eastern Social Research Centre, 2008.

8. Qadeer , I., Gender and health: beyond numbers in Desouza, S., (ed.) *Women's health in Goa a Holistic Approach*, New Delhi :Concept Publishing House, 2006

9. Stansfeld, S.A., Social Support and Social Cohesion in Marmot, M, and Wilkinson, R.G, (eds.) *Social Determinants of Health*, New York, Oxford University Press, 1999

10. Sen, G., Class, gender and health equity: Lessons from liberalising India in Sen,G., George,A., and Ostlin, P., (eds.) , *Engendering International Health*, MIT Press, Massachusetts , 2007

4. Locker., D., Social determinants of health and disease, in Scamber, G., (ed.), *Sociology as applied to Medicine* , Edingburgh , 5th edition, 2003

5. Marriot, M., Western Medicine in a Village of Northern India, in Benajamin, D.P., (ed.), *Health Culture and Community: Case Studies of Public Reactions to Health Programmes*, New York, Russel Sage Foundation, Pg.239-568, 1955.

6. Morris et al. (1994) in Bartely et al. Living in high unemployment economy : Understanding the health consequences in Marmot, M, and Wilkinson, R.G, (eds.) *Social Determinants of Health*, New York, Oxford University Press, 1999

7. Maring., D., Meitei-Naga Conflict with Special Reference to the Territorial Issue in Manipur , in Jayeseelan (ed.) *Conflict Mapping and Peace Processes in North East India*, Guwahati , North Eastern Social Research Centre, 2008.

8. Qadeer , I., Gender and health: beyond numbers in Desouza, S., (ed.) *Women's health in Goa a Holistic Approach*, New Delhi :Concept Publishing House, 2006

9. Stansfeld, S.A., Social Support and Social Cohesion in Marmot, M, and Wilkinson, R.G, (eds.) *Social Determinants of Health*, New York, Oxford University Press, 1999

10. Sen, G., Class, gender and health equity: Lessons from liberalising India in Sen,G., George,A., and Ostlin, P., (eds.) , *Engendering International Health*, MIT Press, Massachusetts , 2007

Journals:

1. Anand, S., and Barnighausen, T., (2004). Human resources and health outcomes: cross-country econometric study, *The Lancet*, Vol. 364, Pg.1603-9.

2. Abdulraheem, I. S., (2011). Reasons for incomplete vaccination and factors for missed opportunities among rural Nigerian children, *Journal of Public Health and Epidemiology,* Vol. 3(4), Pg. 194-203.

3. Becker, S., et al. (1993).The determinants of use maternal and child health services in Mtero Cuba, the Phillipines , *Health Transition* Review, Vol. 3 , No.1, Pg.77-89

4. Bradley, R. H., and Corwyn, R.F., (2002). Socio economic status and Child Development, *Annual Review of Psychology*, Vol. 53, Pg. 371-99

5. Bonu, S., et al. (2003).The impact of the national polio immunization campaign on levels and equity in immunization coverage: Evidence from rural North Indi, *Social Science Medicine*, Vol. 57, Pg.1807-19

6. Borooah, V.K., (2004). Gender bias among children in India in their diet and immunization against disease, *Social Science & Medicine*, Vol. 58, No.9, Pg. 1719-1731

7. Baru, R.V., et al. (2010).Inequities in access to health services in India: Caste, class and Region, *Economic and Political Weekly*, Vol XLV, No 38

8. Christian, P., et al. (1988). The role of maternal literacy and nutrition knowledge in determining children's nutritional status. *Food and Nutrition Bulletin*, Vol.10, Pg.35-40.

9. Cutts, F.T., et al. (1990) .Application of multiple methods to study the immunization programme in an urban area of Guinea. *Bulletin of the World Health Organization*, Vol.58, Pg. 769-776.

10. Coutinho, L., and Banerjea, N., (2000).Social production of blame: Case study of OPV Related Deaths in West Bengal, *Economic and Political Weekly,* Vol. 35, No. 8/9 , Pg 709-717

11. Case , A., (2002) Economic Status and Health in Childhood: The Origins of the Gradient , *The American Economic Review,*Vol. 92 No. 5, Pg. 1308-1334

12. Chowdhury, A.M.R., (2003).Immunization divide: Who do get vaccinated in Bangladesh? *Health Population Nutrition*, Vol. 21, No.3, Pg 193-204

13. Corsi, D.J., et al (2009).Gender inequity and age-appropriate immunization coverage in India from 1992 to 2006, *BMC International Health and Human Rights*, Vol. 9, Supplement 1, Pg. 1472-69

14. Desai, S., and Alva, S., (1998).Reviewed Maternal Education and Child Health: Is There a Strong Causal Relationship?, *Demography*, Vol. 35, No. 1 , Pg. 71-81

15. Das, J., and Das, S., (2003) .Trust , learning and vaccination : A case study of a North Indian village, *Social Science and Medicine* , Pg 97-112

16. Dombkowski, K.J., (2004). Risk factors for delay in age appropriate vaccination, Public Health Rep., Vol. 119, No. 2, Pg.144-55.

17. Datar, A., (2007). Health infrastructure & immunization coverage in rural India, *Indian Journal of Medical Research*, Vol. 125, Pg. 31-42

18. Deb et al. (2010). Relationship of personal hygiene with nutrition and morbidity profile: A study among primary school children in South Kolkata, *Indian Journal of Community Medicine*, Vol. 35, Issue. 2, Pg. 280-284

19. Geenough, D., 1995 intimidation, coercion and resistance in the final stages of South Asian smallpox eradication campaign, *Social Science and Medicine*, Vol. 41, No.5, Pg. 633-45

20. Guite, N., and Acharya, S., (2005).Indigenous Medicinal Substances and Health Care: A Study Among Paite Tribe of Manipur, India, *Studies of Tribes and Tribals* , Pg 1-10

21. Gaudin, S., and Yazbeck, A.S., (2006). Immunization in India 1993-1999: wealth, gender, and regional inequalities revisited. *Social Science and Medicine*, Vol.62, No.3, Pg.694-706

22. Gupta, R., (2006).Smoking, educational status & health inequity in India , *Indian Journal of Medicine and Research*, Vol.124, Pg. 15-22

23. Haokip, T., (2011). Conceptualising Northeast India: A Discursive Analysis on Diversity, *Bangladesh e-Journal of Sociology*. Vol. 8, No. 2.

24. Jacob, J.T., (2007). BCG, tuberculin surveys and annual rate of tuberculosis infection in south India, Indian *Journal of Medical Research,* Correspondence, Vol. 125, Pg. 95-98.

25. Jeffery, R., and Jeffery, P., (2011). Underserved and overdosed? Muslims and the pulse Polio initiative in rural north India, *Contemporary South Asia,* Vol. 19, No.2, Pg 117-135

26. Jablonska, B., et al. (2012). A national cohort study of parental socioeconomic status and non-fatal suicidal behaviour-the mediating role of school performance, *BMC Public Health*, Vol. 12 No.17, Pg 1471-2458

27. Kaplan G.A,(1996).Inequality in income and mortality in the United States: analysis of mortality and potential pathways, *British Medical Journal* , Vol. 312, Pg.999-1003

28. Kaplan, G.A., et al., (1997).Socioeconomic factors and cardiovascular disease: A Review of the literature, *Journal of the American Heart Association*, Vol.88, No 4, Part-1, Pg 1973-1998

29. Krieger, N., (2003). Genders, sexes, and health: What are the connections and why does it matter? , *International Journal of Epidemiology*, Vol. 32, Pg. 652–657

30. Kanjilal, B., et al (2010).Nutritional status of children in India: Household socio-economic condition as the contextual determinant, *International Journal for Equity in Health* , Vol. 9, No 19, Pg 1-13

31. Langsten, R., and Hill, K., (1998). The accuracy of mothers' reports of child vaccination: evidence from rural Egypt. *Social Science and Medicine*.Vol.46, Pg 1205–1212

32. Mc Keown, T., (1972).An interpretation of the Modern Rise of Population, *Population Studies*, Vol.26, No. 3

33. Murthi, M.,et al (1995). Mortality, Fertility and Gender Bias in India. *Population and Development Review*, Vol. 21, No. 4, Pg.745-82.

34. Muthayya, S., (2009). Maternal nutrition & low birth weight - what is really important?, *Indian Journal of Medical Research*, Vol. 130, Pg. 600-08

35. Mollah, KA., and Aramaki, T., (2010). Social-epidemiological study for evaluation of water supply and sanitation systems of low-income urban community in Dhaka, Bangladesh, *Journal of Water Health*, Vol. 8, No. 1, Pg.184-91.

36. Nichter, M., (1995). Vaccinations in the third world: A consideration of community demand, *Social Science & Medicine*, Vol. 41, Issue 5, Pg 617-632

37. Nayar, K.R., (2007). Social exclusion, caste & health: A review based on the social determinants framework, *Indian Journal of Medical Research*, Vol. 126, Pg 355-363

38. Neogi, D., (2010). Disparity in Socio-Economic Development and Its Implications on Communal Conflicts: A Study on India's North-Eastern Region, *International Journal of Human and Social Sciences* ,Vol. 5, No. 5 Pg. 303-310

39. Pande, R., and Yazbeck, A.S., (2003). What's in a country average? Wealth, gender and regional inequalities in Immunization in India , *Social Science and Medicine*, Vol. 57, Pg 2075-88

40. Pande, R., (2003). Selective gender differences in childhood nutrition and immunization in rural India: The Role of Siblings, *Demography,* Vol. 40, No 3, Pg 395-418

41. Parashar, S., (2005). Moving beyond the mother-child dyad: Women's education, child immunization and the importance of context in rural India, *Social Science and Medicine*, Vol. 61, Pg 989-1000

42. Patra, N., (2008).Exploring the Determinants of Childhood Immunisation, *Economic and Political Weekly*, Vol-43, No.12 & 13, Pg. 7-104

43. Patel, A.R., and Nowalk., M.P., (2010), Expanding immunization coverage in rural India: A review of evidence for the role of community health workers. *Vaccine* ,Vol. 28 , Pg. 604–613

44. Qadeer, I., (1985). Health services system in India: An expression of socio-economic inequalities. *Social Action*, Vol. 35, Pg. 199–223

45. Reidpath,D., and Allotey, P., (2003). Infant mortality rate as an indicator of population health, *Journal of Epidemiology and Community Health* , Vol. 57, Issue 5 Pg. 344-346

46. Roy, K., and Chadhuri, A., (2008). Influence of socio-economic status, wealth, financial empowerment on gender differences in health and healthcare utilization in later life: evidence from India. *Social Science and Medicine* , No 66, Pg. 1952-1962

47. Singh, M.,..... Ethnic Conflict and inter community Relations: The Manipur Experience, *The Indian Economy Review*, Pg.13-19

48. Sivakami, M., (1997). Female Work participation and child health: An investigation in rural Tamil Nadu, India. *Health Transition Review*, Vol. 7, Pg. 21-32.

49. Streefland, P., et al., (1999). Patterns of immunization acceptance, *Social Science and Medicine*, Vol. 19, Pg 1705–1716

50. Sen, G., et al. (2000).A Methodology to Analyse the Intersectionalies of social inequalities in health , *Journal of Human Development and Capabilities*, Vol-10, No.3 , Pg.397-415

51. Sen, G., et al. (2002). Structural reforms and health equity : A comparison of NSS Surveys 1986-87 and 1995-96 , *Economic and Political Weekly*, Vol. XXXVII, No 14, Pg. 1342-1352

52. Shimray, U.A., (2004).Women's Work in Naga Society: Household Work, Workforce Participation and Division of Labour Author. *Economic and Political Weekly*, Vol.39, No. 17 , Pg. 1698-1711

53. Sen, G., et al (2007). Systematic hierarchies and systematic failure. Gender and health inequities in Koppal District, *Economic and Political Weekly*, Vol. XLII, No. 8, Pg.682–690.

54. Sharma, R., (2009). Assessment of immunization status in the slums of Surat by 15 clusters multi indicators cluster survey technique Surat Slum Study, *Indian Journal of Community Medicine* , Vol. 34, Issue 2, Pg 152-155

55. Starfield, B., (2011). The hidden inequity in health care, International *Journal for Equity in Health*, Vol. 10, Issue 15 Pg.10-15

56. Tulasidhar, V.B., (1993).Maternal education, female labour force participation and child mortality: evidence from the Indian census, *Health Transition Review*, Vol. 3, No. 2 1993

57. Uddin, M. J., et al. (2010), Child immunization coverage in urban slums of Bangladesh: Impact of an intervention package, *Health Policy and Planning*, Vol.25, No.1, Pg 50-60.

58. Vrijheid, M., (2000). Health Effects of Residence Near Hazardous Waste Landfill Sites: A Review of Epidemiologic Literature, *Environmental Health Perspectives*. Vol 108, Supplement 1, Pg.-110-12

59. Varma, G.R and Kusuma, Y.S., (2008). Immunization coverage in tribal and rural areas of Visakhapatnam district of Andhra Pradesh, India, *Journal of Public Health*, Vol. 16, No 6, Pg. 389-397

60. Watt, G., (2002).The inverse care law today, *The Lancet*, Vol. 360, Issue 9328, Pg 252-254

61. Zaidi, S.A., (1996). Gender perspectives and quality of care in underdeveloped countries: Disease, Gender and Contexuality, *Social Science and Medicine*, Vol. 43, No 5, Pg 721-730

Reports:

1. Baru, R. V., and Bisht, R., (2010).Health Service Inequities as Challenge to Health Security. Oxfam India working papers series September, OIWPS – IV, New Delhi.

2. Caldwell, J., and Caldwell, P., (1988). *Women's position and child mortality and morbidity in LDC's*. Research Paper. Canberra: Department of Demography, Research School of Social Sciences, Australian National University.

3. Child Health Indicators of Life and Development Project (CHILD) (2002). in Rigby, M., &Kohler, L., (eds.): *Report to the European Commission*:

European Union Community Health Monitoring Programme, European Commission, Luxemborg.

4. CSDH (2008). *Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health*, Geneva, World Health Organization.

5. CSE (2009). *All India Report: Coverage Evaluation Survey,*UNICEF Publication, New Delhi

6. Duggal, R., (2008). Inequities in Access to Health Care , A Report on Health Inequities in Maharashtra, SATHI, Pune

7. Gupta, J.P., and Murali, I.,(1989).National Review of Imunization Programme in India, NIHFW, New Delhi.

8. GOI. *Baseline survey of Minority concentrated districts: District Report,* Tamenglong, Ministry of Tribal Affairs, New Delhi, Accessed from: http://www.icssr.org/Tamenglong.pdf, Retrieved on: 21/04/2012

9. Govindasamy, P., and Ramesh, B.M., (1997). *Maternal Education and the Utilization of Maternal and Child Health Services in India*, National Family Health Survey Subject Reports, Number 5 , International Institute for Population Sciences Mumbai, India

10. Gwatkin, D. R., (2000).*Socio-Economic Differences in Health, Nutrition and Population in India*. HNP/Poverty Thematic Group: World Bank.

11. GoI (2001). *National Rural Health Mission (2005-2012): Mission Document*, Ministry of Health and Family Welfare, New Delhi.

12. GOI (2008).*The North Eastern Region :Vision 2020*, Volume 1, Ministry of Development of North Eastern Region & North Eastern Council. Accessed from : http://mdoner.gov.in/writereaddata/sublinkimages/Vision_2020.pdf, Retrieved on: 17/04/2012

13. Government of Manipur.....,Introduction of City Development Plan and Approach, Chapter 1: *City Development Plan* : Imphal, Accessed from: http://manipur.gov.in/IMC/CDP_Imphal.pdf, Retrieved on: 09/05/2012

14. Government of Manipur (2008). Integrate Manipur State NRHM PIP 2007-08, NRHM, MoHFW

15. GoI (2011).*National Vaccine Policy*, Ministry of Health and Family Welfare, NRHM, New Delhi.

16. Govt. of Manipur (2012). *State Program Implementation Plan 2011-12 Manipur*, State Health Society, Department of Health & Family Welfare, NRHM

17. Health Workgroup, First Things First(2007), *Child Health-Definition* , Accessed from:http://www.azftf.gov/WhoWeAre/Board/Documents/Program%20Committee/Health/January%2013,%202011%20Meeting%20%20Health/07%20Child%20Health%20Definition%20Recommendation.pdf, Retrieved on :18/05/ 2012

18. HLEG (2011). High Level Expert Group Report on Universal Health Coverage for India Health Coverage for India, *Social Determinants of Health* , Submitted to Institute Planning Commission of India, Accessed on: http://planningcommission.nic.in/reports/genrep/rep_uhc0812.pdf, Retrieved on:8/04/2012

19. IIPS (1998-99). *Reproductive and child health: District Level Household Survey-1, Manipur*, MoHFW, New Delhi,2001.

20. IIPS (2002-04). *Reproductive and child health: District Level Household Survey-2*, Manipur, MoHFW, New Delhi, 2006.

21. IIPS (2007-08).*Reproductive and child health: District Level Household Survey-3, Manipur*, MoHFW, New Delhi, 2010.

22. IIPS and Macro International (1992-93). *National Family Health Survey (NFHS-1)*, India. International Institute of Population Sciences, Mumbai, 1995.

23. IIPS and Macro International (1998-99). *National Family Health Survey (NFHS-2), 1998-99,* India. International Institute of Population Sciences, Mumbai, 2000.

24. IIPS and Macro International (2005-06). *National Family Health Survey (NFHS-3), India*, Mumbai, India, 2007.

25. INCLEN –AIIMS Programme Evaluation Report (200).Progress towards polio eradication: Service delivery, socio-cultural and communication barriers in high burden zone in India ,AIIMS, WHO SEORO Office, New Delhi.

26. Lloyd, D., et al. (2004). *Health inequity: a review of the literature, Health Promotion Unit*, Northern Rivers Area Health Service, Lismore, NSW.

27. MoHFW, GoI (2005). *Multi Year strategic Plan 2005-2010: Universal Immunization Programme*, Department of Family Welfare, New Delhi.

28. MSDR (2006). *Manipur State Development Report (Draft),* Planning Commission, GoI, Institute for Human Development, New Delhi , Accessed from: http://manipur.nic.in/planning/DraftMSDR/Default_DraftMSDR.htm, Retrieved on 23/04/2012

29. MoHFW (2009). *Report on Causes of Death in India -2001-03*, Office of Registrar General , GoI

30. Mishra, V.K., et al. 1999. *Child Nutrition in India, National Family Health Survey Subject Reports*, Number 14. IIPS and East-West Center: Mumbai and Hawaii.

31. NACO (2011). Annual Report-2010-11, Deparment of AIDS Control, MoHFW, GoI, New Delhi

32. PAHO (1999). *Principles and Basics concepts of equity and health,* Division of health and Human Development , WHO, Geneva

33. Planning Commission (2002). *National Human Development Report,* GOI, New Delhi

34. PHFI (2008).*Human Resource in Health, Technical Report 1: India's health workforce: Size , composition and distribution,* New Delhi

35. Report on Causes of Death:2001-03, Office of Registrar General, India

36. Sen, G. and P. Östlin (2007). *Unequal, Unfair, Ineffective and Inefficient: Gender Inequity in Health: Why it Exists and How We Can Change it* , Final Report to the WHO Commission on Social Determinants of Health, Women and Gender Equity Knowledge Network.

37. Statistical Abstract 2006-07, Government of Manipur, Directorate of Economics & Statistics. Accessed from: http://desmani.nic.in/Statistical%20Abstracts/Statistical%20Abstract%202006-07.pdf, Retrieved on: 12/04/2012

38. Strayhorn KAA (2006). *Women's Paid Labour Force Participation and Child Immunization,* Master of Arts Thesis submitted to the Faculty of the Graduate School of the University of Maryland.

39. Swiss TPH (2010).*Gender and Immunization.* Summary Report for Sage. Partner WHO Initiative for Vaccine Research, Switzerland

40. Spinakis, A., et al., (2011). *Expert review and proposals for measurement of health inequalities in the European Union - Full Report.* (2011) European Commission Directorate General for Health and Consumers. Luxembourg

41. Munshi, R., and S-H Lee (2000). *Child Immunization in Madhya Pradesh, National Family Health Survey Subject*, Reports, no. 15, Mumbai: Institutional Institute for Population Sciences; and Honolulu: East-West Center Program on Population and Health.

42. Mishra et al., (1999). *Child Nutrition in India, National Family Health Survey Subject Reports* , Number 14 ,1999, International Institute for Population Sciences Mumbai, India

43. UNICEF (2009).WHO, Diarrhoea: *Why children are still dying and what can be done*, WHO Publication, Geneva.

44. Wagstaff, A. and Watanabe, N., (2000). *Socioeconomic inequalities in child malnutrition in the developing world*, Washington DC: World Bank. Policy Research Working Paper #2434.

45. WHO (1978). *Primary Health Care: Report of the International Conference on Primary Health Care*, Alma Ata , USSR,6-12, September, Geneva

46. WHO (2001). *Commission on Macroeconomics and Health- Final Report.* WHO, Geneva, World Health Organization

47. WHO (2007). *Challenging Inequity through Health Systems*, Final Report Knowledge Network on Health Systems, Commission on Social Determinants of Health. World Health Organisation, U.K.

48. WHO (1998). *The Solid Facts: Social Determinants of Health. Copenhagen*: World Health Organization.

49. WB (2007).*Development and Growth in Northeast India: The Natural Resources, Water, and Environment Nexus : Strategy Report* , Washington, USA

50. WHO (2005). *Immunization coverage cluster survey-Reference Manual*, Department of Immunization, Vaccines and Biologicals, Geneva

51. Whitehead, M., and Dahlgren, G., (2006).*Concepts and principles for tackling social inequities in health: Levelling up Part 1.* WHO Regional Office for Europe, Copenhagen.

Websites

1. Gonmei, P., (2009).*Better to be the 'Liangtuang' than the 'Nruna-Nah': A Grand Strategy for the Zeliangrong Nagas*, The Souvenir of the Diamond Jubilee of Zeliangrong Students' Union, Manipur-cum the 20th General Conference of the All Zeliangrong Students' Union (Assam, Manipur & Nagaland) , Senapati, Manipur. Accessed from : http://www.zeliangrong.com/zeliangrong-scholar-articles/91-better-to-be-the-liangtuang-than-the-nruna-nah-a-grand-strategy-for-the-zeliangrong-nagas, Retrieved on :2/06/2012

2. Meitei, H.M., ..., Education or Earning and Access to Resources Determining Women's Autonomy: An Experience Among Women of Manipur, IIPS, Mumbai, India .
3. Imphal West, District Profile, Government of Manipur, Accessed from: http://imphalwest.nic.in/geography.html , Retrieved on 3/04/2012
4. Public Health Agency of Canada (2010).Housing as a Social Determinant of First Nations, Inuit and Méitis Health, National Collaborating Centre for Aboriginal Health.Accessed from: http://www.nccah-ccnsa.ca/docs/fact%20sheets/social%20determinates/NCCAH_fs_housing_EN.pdf , Retrieved on : 21/06/2012
5. Nayak, P.,....Human Development Reports on North-East India: A Bird's Eye view, Accessed from : http://dspace.nehu.ac.in/bitstream/1/2699/1/Human%20Development%20Reports%20on%20North-East%20India-%20A%20Bird's%20Eye%20View.pdf, Retrieved on :11/05/2012
6. GoI 2010, NRHM Programme Implementation Plan 2009-2010, Accessed from:

http://mohfw.nic.in/NRHM/PIP_09_10/Orissa/Immunization_Text.pdf; Retrived on 21/04/2012

7. Manipur : Data highlights : The Scheduled Caste Census of India , 2001, Accessed from: http://censusindia.gov.in/Tables_Published/SCST/dh_sc_manipur.pdf, Retrieved on 01/05/2012
8. Manipur : Data highlights : The Scheduled Tribe Census of India , 2001, Accessed from : http://censusindia.gov.in/Tables_Published/SCST/dh_st_manipur.pdf, Retrieved on: 01/05/2012
9. Muslims of Manipur - Distribution, Accessed from: http://ideasandviews.com/index.php/manipuri-muslim?showall=&start=2, Retrieved on 07/05/2012
10. Singh, L.M(.....), The heavyweight girls of Manipur By Thingnam Anjulika Samom Accessed from: http://www.dfid.gov.uk/r4d/PDF/Outputs/Panos/Manipur.pdf , Retrieved on : 25/06/2012
11. Singh, M.R (2011), Tribal in Manipur, Chapter no 2, Tribal Development in Manipur Accessed from: http://www.google.co.in/#hl=en&output=search&sclient=psy-ab&q=3.%09Tribals+in+Manipur%2C+Chapter+no+2%2C+Tribal+Development+in+Manipur+&oq=3.%09Tribals+in+Manipur%2C+Chapter+no+2%2C+Tribal+Development+in+Manipur+&gs_l=hp.12...3960.3960.0.5424.1.1.0.0.0.0.188.188.0j1.1.0...0.0.G73nRNr0JlQ&pbx=1&bav=on.2,or.r_gc.r_pw.r_qf.,cf.osb&fp=d70cb7a1447ca32b&biw=1821&bih=897&safe=active, Retrieved on: 06/06/2012
12. GoI (2011). Census of India , Provisional Population Totals, Registrar General of India, Ministry of Home Affairs, Accessed from: http://censusindia.gov.in/2011-prov-results/indiaatglance.html, Retrieved from: 12/07/2012

13. GoI (2011a).Census of India, Provisional Population Totals: Manipur, Registrar General of India, Ministry of Home Affairs, Accessed from: http://censusindia.gov.in/2011-prov-results/prov_data_products__manipur.html; Retrieved on 12/05/2012.
14. Background of the state of Manipur and the people of Manipur
15. Oinam , B., Manipur Chapter No. 4 , Accessed from: http://www.ide.go.jp/English/Publish/Download/Jrp/pdf/133_6.pdf, Retrieved on: 21/05/2012

Others

1. Gwatkin, D.R. and G. Deveshwar-Bahl (2001), *Immunization Coverage Inequalities: An Overview of Socio-economic and Gender Differentials in Developing Countries*, Washington, DC: World Bank.

2. Health Canada, Federal Provincial & Territorial Advisory Committee on Population Health for the Meeting of Ministers of Health, Toward a Healthy Future. Second Report on the Health of Canadians, Ottawa: Health Canada, 1999.

3. Nayak, P., (2005). *Human Development Approach to the Status of Development in the North East India.*, 47th Annual International Conference of Western Social, Science Association at Albuquerque, New Mexico, 13-16 April 2005.

4. Nayak, P., (2009). *Human Development Reports on North-East India: A Bird's Eye View*, Unpublished , Accessed from: http://mpra.ub.unimuenchen.de/17015/1/MPRA_paper_17015.pdf Retrieved on: 06/04/2012

5. Patra, N., (2005). *Universal Immunisation Programme in India: The Determinants of Childhood Immunisation* ,Unpublished M. Phil Dissertation, Dept. of Economics, Delhi School of Economics, University of Delhi: Delhi, India.

6. Patra, N., (2009).*When will they ever learn? The Great Indian Experience of the Universal Immunization Programme*, Paper was presented at the Third International Doctoral Theses Conference, Hyderabad, March 4-7, 2009.

7. Panda, PK (2007).*The effects of safe drinking water and sanitation on diarrhoeal diseases among children in rural Orissa*, the National Seminar on Rural Water Supply and Sanitation. The Centre for Development Studies, Thiruvananthapuram, June -20-22, 1996.

8. Sharma , S., *Immunization Coverage in India, Institute of Economic Growth* , University of Delhi, Working Paper Series, No.E/283/2007 ,

9. Accessed from : http://www.iegindia.org/workpap/wp283.pdf, Retrieved from: 03/03/2012

10. SACOSS (2008).The Social Determinants of Health, South Australian Council of Social Service, Australia, Accessed from : http://www.sacoss.org.au/online_docs/081210%20Social%20Determinants%20of%20Health%20Report.pdf, Retrieved from : 01/04/2012

11. The Hindu (2011). Pentavalent vaccine to be introduced on Wednesday, Special Correspondent, Accessed from: http://www.thehindu.com/health/article2712129.ece; Retrieved from: 12/06/2012

12. **List of Annexure**

Annexure No. 1: State and District wise SCs and STs Population distribution of Manipur

Sl. No.	State/District	Percentage of STs to total population of the State/District	District wise percentage of total ST population	Percentage of SCs to total population of the State/ District	District wise percentage of total SC population
1	Senapati	78.5	16.6	0.2	0.4
2	Tamenglong	95.4	14.3	0.0	0.0
3	Churachandpur	93.2	28.7	0.1	0.3
4	Bishnupur	2.9	0.8	0.8	2.9
5	Thuobal	1.2	0.6	9.3	56.6
6	Imphal East	6.3	3.3	2.6	22.1
7	Imphal West	4.8	2.8	3.0	17.3
8	Chandel	91.2	0.8	0.2	0.0
9	Ukhurl	95.5	18.1	0.0	0.3
	Manipur*	34.2	100	2.8	100

*excludes three sub-divisions (Paomata, Mao-Maram and Purul of Senapati District), Source: Census-2001

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Annexure No. 2: Population Distribution and Geographical Area in Four Subdivisions of Imphal West District

Name of Blocks	Population (2001)	Area (in Sq Km)	No of Villages	No of Towns
Lamsang	57589	198	61	2
Patsoi	71,115	83	33	2
Lamphelpat	1,95,380	60	10	2
Wangoi	120, 298	178	30	5

Source: Statistical Abstract of Manipur, 2007

Annexure No. 3: Population Distribution and Geographical Area in Four Subdivisions of Tamenglong District

Name of Blocks	Population (2001)	Area (in Sq Km)	No of Villages
Tamenglong	37,189	874	61
Tamei	21,829	1314	33
Tousem	21,805	1125	10
Nungba	30,670	1078	30

Source: Census 2001

Annexure No. 4: Facility mapping of Manipur

Item	Required	In Position	Shortfall	
			No.	%
Sub-centre	412	420	Nil	-
Primary Health Centre	64	72	Nil	-
Community Health Centre	16	16	0	-
Multi -purpose worker(Female)/ANM	492	990	Nil	-
Health Worker (Male)/MPW(M)	420	420	0	-
Health Assistants (Female)/LHV	72	55	17	23%
Health Assistants (Male)	72	52	20	27%
Doctors at PHC	72	115	Nil	-
Surgeons	16	0	16	100%
Obstetricians & Gynaecologists	16	0	16	100%
Physicians	16	0	16	100%
Paediatricians	16	0	16	100%
Total specialists at CHCs	64	0	64	100%
Radiographers	16	12	4	25%
Pharmacist	88	96	Nil	-
Laboratory Technicians	88	46	24	27%
Nurse Midwife	184	172	12	6.5%

Source: RHS Bulletin, March 2008, M/O Health & F.W., GOI

ANNEXURE NO: 5

Interview Schedule for Mothers/care givers

Section I

General Information	
Name of the Village:	
Type of village: Small/Middle/ Large: Motorable/ Non-motorable:	
Block:	
Type of family(Nuclear/ Joint) :	Religion:
Caste:	Ethnicity:
Profile of the child	
Age of the child	Date of Birth:
Sex : Male/Female	No of Siblings:
Birth order:	Sibling composition:
Delivery (Home/ Institute)	
Profile of the parents of the child	
Marital status of the parents: Widowed/ Married/Divorced	
Age of the father	Age of the mother

Can the parents of the child read and write any language with understanding? (Yes/No) Father: Yes/ No Mother: Yes/No	
How many years of schooling the mother of the child have completed?	
How many years of schooling the father of the child have completed?	
Monthly income of the family: Father's income : Mother's income:	
Father's occupation:	Mother's occupation:
Type of housing : (Kuccha/Pucca/ Semi pucca)	Source of Drinking water:
Type of sanitation facilities:	

Immunization profile

Do you know what vaccines an infant should received before he/she attains the age of one year? (Yes/No)
Give the names of all the vaccines.
BCG
Have your child received an injection which leaves a scar? When did s/he receive it?

No of doses required	Age at which dose required
DPT (Diphtheria, Whooping Cough and Tetanus)	
How many times have your child been administered DPT vaccines? [Injection usually given at thigh or buttocks]	
No of doses required	Age at which dose required Dose 1 Dose 2 Dose 3
OPV (Polio drops)	
How many oral drops or rounds have your chid received?	
No of doses required	Age at which doses required
Measles	
No of doses required	Age at which dose required
Was your child administered a vaccine for protection against measles? [Injection usually given at the shoulder /left hand)	
Do you have any document /Immunization card in which the immunization information are given? Yes/ No	
If, yes and card is blank or partially filled, ask why it is so?	

Only for those who have completed 18 months:
Has your child received any booster dose for DPT (given after DPT 3)? Yes/No Names of the vaccines and when:
Has your child received any booster dose for OPV (given after OPV 3)? No of doses received during pulse polio campaign: No of doses received during Routine immunization:
From where did your child receive most of his/her vaccinations?
Did you get your child vaccinated at the first time you took him/her to the immunization camp? If, no how many times did you visit the place before getting your child before finally getting immunized?
How far the place is from your house?
How long does it take to travel to the place?
How long did you have to wait for your child to get immunized?

Section II: Qualitative enquiries

1.	Is your child healthy? Reasons for why she thinks so.
2.	Where do you take your child when he/she gets sick? Reasons for taking in that place.
3.	What is the purpose of vaccination?
4.	Do you think vaccination is important for protecting your child from certain specific childhood diseases or protects against only specific diseases? Reasons for that.(skip this question for children who are not immunized)
5.	Your child has not received any or some of the vaccinations, what are the reasons?
6.	Have you ever in the past immunized your other children who are older than X? If yes, then why did you decide not to immunized X?
7.	Did you have to pay some money for immunizing your child? If yes, how much , why and to whom?
8.	Did anybody from household supported / stopped you from taking your child for immunization? If yes, what kind of support did you received or reasons for them for stopping you.
9.	Did the child faced any health problem after he/she was immunized? What did you do at that time?

10.	What are the problems you or any other family member faced at the time of the child's last vaccination?
11.	Do you get any information about time and venue where the immunization camp is going to be held? From whom and how?
12.	Why could not you take your child for immunization besides knowing about the immunization camp?
13.	Is routine immunization session held in your village/area? Where it is held? Is this place convenient for you to take services?
14.	Were you provided proper information what vaccines are needed and when and who provides you the message?
15.	Did you receive any antenatal check up when you were pregnant with your child? If yes, what did they tell you (medical personnel) regarding immunization of your child?
16.	How was your experience with the medical personnel who immunized your child?

ANNEXURE NO. 6

Interview Schedule for Fathers

1	Have you heard ever about vaccination? Any idea when at what age, how many doses or how many vaccines your child had to receive to protect your child from immunization.
2.	Do you think vaccination is important for your child? Reasons for that.
3	Do you keep a track or share responsibility with your wife for immunizing the child? Why or why not?
3	Do you think you are provided enough information about your child health from various mediums? Reasons for that.
4	Do you think fathers can also play a role in child immunization? What roles can father play to improve immunization coverage?
5	Have you ever taken your child for immunization? If yes, share your experience.

ANNEXURE NO 7

Interview Schedule for ASHAs/AWWs

1	How often do you go to the village/area for vaccination related activities?
2	What are the steps you took up to ensure a child gets immunized in your designated village/area?
3	What are the obstacles you faced while carrying out activities related to child immunization?
4	What according to you in the reasons behind why people are not getting their children immunized?
5.	Do you provide information related to child immunization to only mothers or other care givers when you contact them? What kind of messages do you provide?
6.	Can you share from your experience the different issues which you faced among the different ethnic groups which has led to inter-sectional differential in the coverage?

ANNEXURE NO. 8

Interview Schedule for Key Informants

1	How is the state of coverage of Universal immunization programme (UIP) in your designated district?
2.	What are the major challenges you faced in carrying out the activities of UIP?
3.	What according to you are major obstacles to increase the coverage levels of the UIP in the district?
4.	Why according to you are the main reasons behind the differentials in the inter-sectionality in the programme coverage?
5	What according to you will help to increase the coverage levels for childhood immunization?

ANNEXURE NO 9

Interview Schedule of Nurses/ANMs

1	What are the responsibilities you play in carrying out the activities of the UIP?
2	What are your experiences with the community while implementing the child immunization programme?
3	What are the challenges you faced in carrying out the activities of UIP?
3	What according to you will increase the coverage levels for childhood immunization?
4	What according to you are the reasons why parents are not getting their child immunized?
5.	Why according to you are the main reasons behind the inter-sectional differentials in the programme coverage?