Role of Household Factors in Determining the Potential of the National Health Policy-II Initiatives to Influence Individual Health in India: A Retrospective Study

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DECLARATION

The thesis: *Role of Household Factors in Determining the Potential of the National Health Policy-II Initiatives to Influence Individual Health in India: A Retrospective Study,* is my own work.

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CONTENTS

TABLE OF FIGURES

LIST OF TABLES

ABBREVIATIONS

BMI	Body Mass Index
CHE	Catastrophic Health Expenditures
CGHS	Central Government Health Scheme
CSDOH	Commission for Social Determinants of Health
CME	Continued Medical Education
ESIC	Employees State Insurance Scheme
FDI	Foreign Direct Investment
FTA	Free Trade Agreements
GDP	Gross Domestic Product
GoI	Government of India
HDI	Human Development Index
HE	Household Environment
ICDS	Integrated Child Development Scheme
IMR	Infant Mortality Rate
ISI	Import Substitution Industrialization
ISMH	Indian Systems of Medicine and Homeopathy
LE	Life Expectancy
MoHFW	Ministry of Health and Family Welfare
MPI	Multidimensional Poverty Index
MDR-TB	Multi-Drug Resistant Tuberculosis
MP	Madhya Pradesh
NCD	Non-communicable Diseases
NCMH	National Commission on Macroeconomics and Health
NFHS	National Family Health Scheme
NHA	National Health Accounts
NSSO	National Sample Survey
OOPE	Out of Pocket Expenditure
PDS	Public Distribution System
RCH	Reproductive and Child Healthcare
SEARO	South East Asian Regional Office
SWAp	Sector Wide Approach
SDOH	Social Determinants of Health
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children Fund

ABSTRACT

Problem Statement: India is a rapidly evolving economy faced with various transitions in health and demography. Despite an economic boom and growth in various sectors, the Indian health scene is riddled with health inequalities and inequities. Very few Indian States are likely to succeed meeting the health-related Millennium Development Goals before 2016.

Despite wide socioeconomic and sociocultural disparities the Indian household and several common factors therein closely influence individual health and well-being. For National health policy initiatives to influence individual health and well-being, it is essential to determine how the policy considers and influences these common household factors.

Objectives were: to describe the NHP-II prescriptions that can potentially impact household factors in India, to highlight inter-relatedness of common household-factors, their influence on individual health and well-being and the importance of considering them in policy prescriptions, to analyze possible implications of policy prescriptions for these household factors and to develop recommendations for future policy makers. A conceptual framework that combines both: quality in healthcare and the Lalonde Health Fields was designed to achieve the objectives. Findings suggest that although indirectly, National health policy initiatives can potentially influence individual health provided properly implemented. Also that considering the role of household-factors provides added insight to the healthcare quality in India.

Conclusions: Considering household factors provide a solution for approaching context-specificity issues in India. A framework considering common, household factors can help policy planners incorporate their contributory aspects to health and well-being when approaching regulatory, inter-sectoral and health intervention issues affecting the Indian healthcare system. Considering household factors also highlights the undefined approaches adapted by the National Health Policy when addressing healthcare quality. It further provides insight by raising questions for further studies. This paper attempts to help National Policy makers to assess the potential impact of their decisions on individual health.

Key words: Health care quality, Health Policy, Household factors, conceptual framework, Healthcare in India, Deming's Points.

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CHAPTER 1: BACKGROUND

Indian health today results from dynamic inter-relations between various socioeconomic processes and sociocultural factors that have effaced rapidly from 1990 onwards.

Figure 1: India and her States & Capitals [72]

Since 1990s, changing trade policies and socioeconomic trends (APPENDIX V), have witnessed increased Gross Domestic Product (GDPs), increases in per capita incomes, rapid urbanization, and increased internal-migration of the population. Migration studies from 1990s show an upsurge in internal-migration and urbanization with presently, 30% of Indians residing in urban zones. Moreover, India has *a third* of the global population living below the *international poverty line.* According to the Multidimensional Poverty Index (MPI) introduced in 2011, poverty in India exceeds that in all of sub-Saharan Africa [1-7]. The 10 indicators used for measuring the MPI all relate to the MDG indicators [2].

Table 1: India at a glance -I

India at a glance – I
28 States and 7 Union Territories; 7th largest country in the world; 10th largest economy.
Population (2011): 1.21 billion (2nd to China in world population).
Life Expectancy Rate: 65.8 years (Males); 68.1 years (Females) in the period 2006-2011.
Crude Birth Rate: 18.3 in 2009
Crude Death Rate: 7.3 in 2009
Sex Ratio: 940 (2011 census)
Literacy: 74.04 per cent (82.14% for males; 65.46% for females). Religions: Hindus constituted the majority with 80.5%, Muslims came second at 13.4%, followed by Christians, Sikhs, Buddhists, Jains, and others.
Source: [22,73]

1.1 Trends in Indian Health

Apart from the socioeconomic changes, since the 1990s, Indian health has undergone dynamic transitions (APPENDIX I).

Albeit economic growth, the National Family Health Survey – 3 (NFHS-3), found India to have the highest number of malnourished (stunted) children in the world, a fifty-two million children under-five-years [6]. The prevalence of underweight children in the preschool age groups is higher in India than in sub-Saharan Africa. Yet, the under-five mortality rates (U5MR) in India is much lower than that in Sub-

Saharan Africa. About eleven-percent of the Indian population is over-nourished and presents the farther end of the *nutrition transition spectrum*. Non-communicable Diseases (NCDs), account for approximately forty-two percent of deaths among adults (Figure 2).

Apart from lifestyle related NCDs, micronutrient deficiency in maternal and child health are in need of urgent address. Over forty percent of children under five and thirty-six percent of adult women are found to be undernourished. In 2008, the infant mortality rate (IMR) in India was 53 per 1000 live births, while the Millennium Development Goals (MDGs) recommend lowering of the rates to 38 per 1000 live births by year 2015.

Additionally, India has the highest number of Low Birth Weight (LBW) infants born every year (approximately a third of all infants born each year; Table 2), which makes the country account for twenty-six percent of the global burden. The Ministry of Health and Family Welfare (MoHFW) initiated Integrated Child Development Scheme (ICDS) and Reproductive and Child Healthcare (RCH) programmes, have failed to emancipate childhood malnutrition [9,10,29]. The states of Kerala and Goa are exceptional for faring better than other States with IMR lower than 30 per 1000 live births. Other states likely to do well in this respect by 2015 are Maharashtra, West Bengal and Tamil Nadu (Figure 3) [11-14].

Table 2: India at a glance - II

India At A Glance -II
Highest number of LBW infants as well as malnourished in the world. 1/3rd of all infants born in India weigh less than 2.5 kg (are LBW)
Total Per capita expenditure on health: US$ 45
Percentage of National GDP spent on health: 4.2
Private Health Expenditure (Out-Of-Pocket (OOP) Expenditures): 80% of Total Health Expenditure.
General Government contributions as a percentage of total medical spending: 32.4
Every third woman in India is undernourished (35.6% have a low BMI) Girls marrying before the legal age of marriage: 2-46% Currently married women who usually participate in household decisions: 36.7%
Source: [7,22,73]

According to the National Commission on Macroeconomics and Health (NCMH), even if India could achieve an IMR of 26 per 1000 live births (twice the present rate in Kerala), it would allow avoidance of 100 thousand infant deaths per year and a huge decline in disease burden. Furthermore, NCMH estimates that reductions in child mortality rates can raise life expectancy at birth of an Indian by 3.1 years and raise India's GDP from four to twelve percent [13].

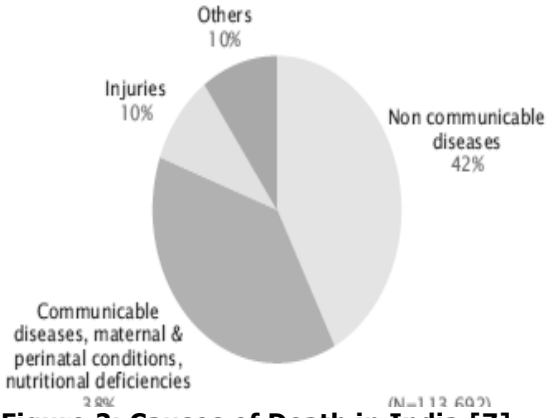

Figure 2: Causes of Death in India [7].

India also faces a rapid, demographical transition. Life-expectancy is over seventy-five years. Number of people over sixty years of age is expected to exceed 200 million in twenty-five years [15]. States of Madhya Pradesh, Uttar Pradesh, Rajasthan and Bihar are predicted as unable to lower their Total Fertility Rates (TFR) to replacement levels. Apart from Kerala and Tamil Nadu who lowered the TFR to a replacement level of 2.1 in 1998, the remainder of the states are unlikely to reach this level before 2060 (Figure 3)[15].

1.2 Burden of healthcare expenditure

As a proportion of *per capita income,* the healthcare spending has doubled (from 2.7% in 1961 to 5.5% in 2001-2003). The poor are 2.6 times more likely to forego medical treatment owing to financial reasons. Despite free or nearly free services at government healthcare facilities for poor households, significant parts of incomes are spent on transport and informal charges (Figure 4).

Sector	Population BPL (%)	IMR/ Per 1000 Live Births (1999-SRS)	<5Mort-ality per 1000 (NFHS II)	Weight For Age- % of Children Under 3 years (<-2SD)	MMR/ Lakh (Annual Report 2000)	Leprosy cases per 10000 popula-tion	Malaria +ve Cases in year 2000 (in thousands)
India	26.1	70	94.9	47	408	3.7	2200
Rural	27.09	75	103.7	49.6	-	-	-
Urban	23.62	44	63.1	38.4	-	-	-
Better Performing States:							
Kerala	12.72	14	18.8	27	87	0.9	5.1
Maharashtra	25.02	48	58.1	50	135	3.1	138
TN	21.12	52	63.3	37	79	4.1	56
Low Performing States							
Orissa	47.15	97	104.4	54	498	7.05	483
Bihar	42.60	63	105.1	54	707	11.83	132
Rajasthan	15.28	81	114.9	51	607	0.8	53
UP	31.15	84	122.5	52	707	4.3	99
MP	37.43	90	137.6	55	498	3.83	528

Figure 3: Differentials in health status among States (NHP-II) [23]

Further, an accessible and working healthcare system seems unimaginable for majority (around 70%) of the rural population[1] [16,17].
In socioeconomically poor states (Madhya Pradesh and Rajasthan), ill health and spending on treatments are cited as main reasons for households slipping under the poverty line. In these states, in the past decade, the number of households escaping poverty was nearly the same as those becoming impoverished[2] [5,19,53].

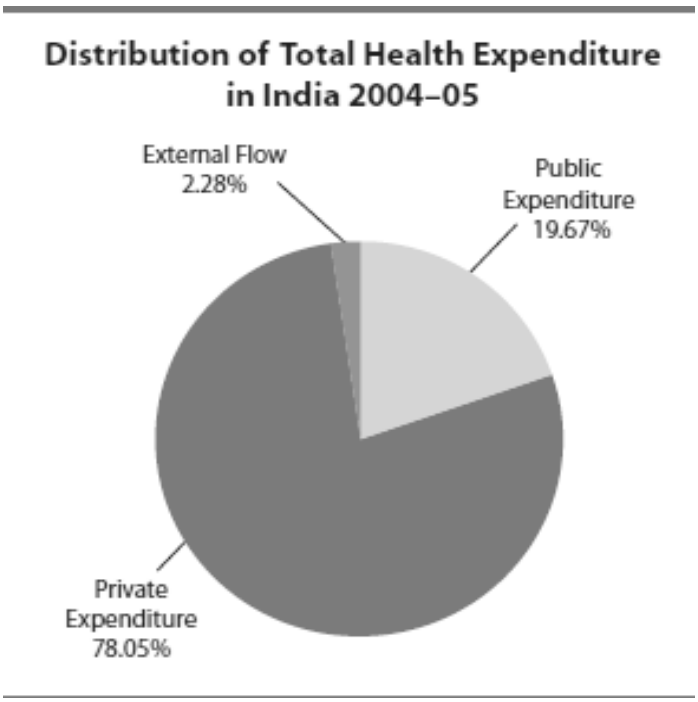

Figure 4: NHA [7]

The World Health Organization's (WHO) definition of health[3] conveys the importance of a holistic approach to understanding health. It means understanding an individual's health from a social, psychological and physical standpoint. Further introduction of the Millennium Development Goals (MDGs) by the United Nations (UN) in 2000, reinforce an understanding that better health – is a reflection of improving socioeconomic and sociocultural conditions. This requires understanding the inter-relatedness of these processes to learn their scope and impact on health. These impacts are often multidimensional because effects on the environment and systems, are reflected on individuals and *vice versa* [20,21].

1.3 The Indian National Health Policies

The Indian Ministry of Health and Family Welfare (MoH&FW) initiated the National Health Policy (NHP) in 1983. The NHP-1983 focused more on Comprehensive Primary Health Care and Family Planning to achieve "Health for All" by 2000. It stressed on the creating an infrastructure for primary healthcare, close co-ordination with health-related services and activities (like nutrition, drinking water supply and sanitation), active involvement and participation of voluntary organisations, provision of essential drugs and vaccines, qualitative improvement in health and family planning services, provision of adequate training, and medical research aimed at the common health problems of the people [22].

The 2nd National Health Policy of India (NHP-2002) has the objective of achieving acceptable standards of good health among the general population of the country; on health system strengthening; and has set goals to be achieved by the year

[1] For every 1% rise in state per capita income, per capita public health expenditure has increased only about 0.68%; for every 1% rise in real per capita income, real per capita expenditure on private health services increase by 1.95% [6,37].
[2] Further data in Findings section 4.5 and footnote 12.
[3] WHO Definition: "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."

2015 (Table 3) [11,23]. Further description of the NHP-II and its' key policy prescriptions are presented in chapter of Findings.

CHAPTER 2: PROBLEM STATEMENT

The Indian economic boom consists of rising employment rates (in service industry), increasing Foreign Direct Investments (FDI), rapid urbanization and prospering healthcare, information technology, and banking sectors to name a few. Despite the economic boom, healthwise – India bears 21 percent of the global burden of diseases. India has the highest number of stunted children in the world. Although infectious diseases and undernutrition continually cause considerable morbidity and mortality, Indians are forced to handle the growing burden of non-communicable diseases (NCDs) in both urban and rural populations. Over the last decade, NCDs have affected not only the urban rich but also, the poor and disadvantaged sections [1,23-28].

Currently, of Total Health Expenditure in India, the share of Public Expenditure on Health (both Central and State governments combined) accounts for less than 1% (Figure 5) of GDP. Private Expenditure in Health makes up for 80% of Total Health Expenditure, with *households* forming the primary source of funding for healthcare (over 70%) [7].

India has implemented countrywide Central and State, government-run health programs in the past 20 years. However, achieving the MDGs has become a daunting task for India with many States not likely to reach any goals by 2015.

Type of Expenditure	Expenditure	Distribution of total Health Expenditure (%) Share of GDP (%)	Share of GDP (%)
Public Expenditure	263,132,133	19.67	0.84
Private Expenditure	1,044,135,932	78.05	3.32
External Flow	30,495,141	2.28	0.10
Total Health Expenditure	1,337,763,206	100	4.25
Gross Domestic Product	31,494,120,000		

Figure 5: Health Expenditure in India [7]

Although health-indicators like Maternal Mortality Rates (MMR), Infant Mortality Rates (IMR) and Total Fertility Rates (TFR) in states like Kerala, Tamil Nadu and Punjab are comparable with those of high-income countries, states of Madhya Pradesh, Uttar Pradesh, Bihar and Rajasthan have health statistics below country-averages [1,8,23-29].

The household-factors in India

Despite being a multicultural nation of wide socioeconomic disparities, certain factors affecting individual health appear to be prominently common. *The household plays a central role in the lives of Indians.*

Factors in an individual's household *apparently impact directly* the health-qualities therein. These factors influence the *immediate environment* in which the individual lives, thereby significantly affecting health.

Literature search (Appendix II) for studies on health programs in India, malnutrition, nutrition transition, NCDs, government health programs and health policy debates indicate that common, household factors affect individual health. The most common amongst them are:

1. Household-income and food-basket.
2. Mother's status in the family, i.e. her levels of education plus autonomy.
3. Gender and birth-order of children.
4. Individual habits like sedentary life-style, alcohol consumption and smoking.
5. Social *'Caste'* to which the family belongs.

Literature review of papers addressing childhood malnutrition, maternal health, immunization, repeatedly stresses the importance of mother's autonomy, household income and gender and birth-order of children as factors determining the health outcomes. Whereas, literature on general malnutrition, NCDs, nutrition transition etc. present changing household-incomes, the individual habits and the social 'caste' of the household as influencing health outcomes (APPENDIX II).

In Indian States, these factors apparently affect health within households and simultaneously interact with larger factors that surround the household (the community and health-systems) [20,28,30,31,81].

Household-factors are common influencers despite the regional differences in health outcomes in India. However, none of the studies reviewed (APPENDIX II), have collectively considered the abovementioned household factors, altogether, in a single study. Hence, there is the need to consider their combined impact while elaborating their inter-relatedness. This can demonstrate their collective importance for planning health policy initiatives.

It's possible to apply the above understanding to health programs' designed to reduce childhood malnutrition in India. The ICDS and RCH programs have shown different outcomes in different States. Household factors as a common denominator can provide an insight as to which factors contribute to greater or lesser extends within specific geographical or socioeconomic regions.

For example, malnutrition can primarily result from low autonomy of mother or because the social norms are preferential towards the male child. In each condition, it can be further advantageous to learn whether situations like low-household-income further compounds gender-discrimination or mother's autonomy.

In certain parts of the country, although women are employed in labour, malnutrition persists despite small increases in household-incomes. However, in urban areas of high-income States, malnutrition can also result from gender-discrimination and habits despite adequate women's autonomy and household-income. Thus, household factors, when considered while planning and implementing programs can emphasize which factors within households directly contribute to poor health and which factors contribute to aggravating the primary factors.

Therefore, within the same program, whereas in one Indian socioeconomic scenario, gender-discrimination can require more focus, another scenario might require a different approach that considers poor household-incomes and mother's education with added emphasis.

Factors like education and income are broadly seen as socioeconomic factors. However, they work together and affect the environments in households and influence individuals living therein. Hence, they are considered as household factors for this paper.

As mentioned in the Background, socioeconomic processes of internal trade-liberalization, internal-migration and rapid urbanization have moulded the Indian

landscapes. These processes closely affect the abovementioned, common household-factors. Although these processes affect different regions of the country differently, they still influence individual health as they interact with the above-mentioned household factors [81].

Therefore, policies made for healthcare and health-systems, must consider their potential to effect the abovementioned factors within households that contribute to individual health [31,75]. For beneficial health outcomes, the changes made must 'hit-home'.

Further, having common household-factors affecting health for consideration while preparing policy prescriptions at a broad, national level, would maintain a constant, bottom-up perspective- additionally making it easier to assess the *potential* impact of policy initiatives on overall health [75].

The 2nd Indian National Health Policy-2002 (NHP-II) is a document formulated by the Central Government. The NHP-II focuses on: achieving acceptable standards of good health among the general population of the country, health system strengthening and has set goals to be achieved by the year 2015 [11,23]. The various State Governments are required to apply its prescriptions for better health outcomes by adapting them to their sociocultural and socioeconomic contexts.

Thus, it's worthwhile to understand how the abovementioned household factors are considered in the policy's top-down-bottom-up approach. To learn whether the NHP-II can incorporate their contributory aspects to health and well-being when approaching regulatory, inter-sectoral and health intervention issues affecting the healthcare system. This knowledge will assist policy-makers adopt a holistic approach to achieving desired health quality.

OBJECTIVES

The general objective of this paper is to explore the role of household factors in determining the potential of the NHP-II initiatives to influence individual health in India. To highlight the prescriptions of NHP-II that can potentially influence the most common household factors affecting individual health and for developing recommendations that will assist the process of policy making at a broad level to assess the *potential impact* of decisions on overall health.

Specific Objectives

The specific objectives are:

1. To describe the NHP-II prescriptions that can potentially influence household factors in India.
2. To highlight the inter-relatedness of the common household-factors, their influence on individual health and well-being and the importance of considering them in policy prescriptions.
3. To analyze possible implications of policy prescriptions for these household factors.
4. To develop recommendations for future policy makers that helps them at a broad level to assess the *potential impact* of their decisions on individual health.

CHAPTER 3: METHODOLOGY

This is a literature review.

3.1 Literature Search

Databases frequently accessed for the literatures and the key words are SCOPUS; PUBMED, BIOMED CENTRAL and the WHO online library. Google scholar was the main search engine accessed. The official websites of the WHO-India, South East Asian Regional Office (SEARO), the World Bank, UNICEF, UNESCO, MoHFW (India) and the Planning Commission of India also provided valuable data. Main search terms in databases were: nutrition AND India; India AND household income AND social determinants of health; health policy AND India; globalization AND India AND gender and policy framework.

Search-terms, inclusion and exclusion criteria for literature reviewed and results are in APPENDIX II. It also contains a more in-depth data on search methodology for prioritizing the household factors.

Prioritizing articles which include the household factors

Further, literatures on government run as well as non-governmental, health promotion programs with their overall outcomes have been included as sources for this paper. The National Family Health Survey (NFHS), is a MoHFW initiative by the Government of India (GoI), based on studies of large representative populations within the country (over 90000 women and children over 26 states), thus providing a unique picture of the levels of malnutrition and its determinants within India [6]. Literature that adds valuable interpretations to the findings of the NFHS and provide a sound picture of the socio-economic inequities and their unequal distribution within the country, along with works that appraise the consequences of trade liberalization in India have been used for data. In this regard, works that are independent of interpreting the NFHS-3 are also included. Literatures published in English and in the past decade have been prioritized. Also included is literature regarding the nutrition transition and increasing prevalence of Non-Communicable Diseases (NCDs).

Literature relating nutrition in India with any of the individual components of the household factors and published in the past decade, appearing in common with other databases and in English have been reviewed and used as references.

Also accessed were the Indian National Health Accounts, the NHP-2002 policy paper, the National Health Report-2010 and papers that have used the data available therein for their research. The NHA is freely available in the public domain for data regarding public and private health expenditures in India. For details on insurance coverage in the country, the websites of the Central Government Health Scheme (CGHS) and the Employee State Insurance Scheme (ESIS) alongside papers with literature on public and private insurance coverage were prioritized.

3.2 Conceptual Framework

Lalonde Health Fields Model

Elaboration of the inter-relatedness of the household factors, individual health and the larger socio-economic processes, is based on the *Lalonde Framework of Health*

Fields. Lalonde introduced the Health Field Concepts in 1974, acknowledging the environmental and behavioural dimensions of health. Biology & Genetic factors; Lifestyle; Environment and Organization of health-services were the basic four fields that affected health and illness.

Based on the framework (Figure 6), within the Lalonde model, various health fields interact with each other while affecting the individual health. The framework further shows the same health field simultaneously affecting different household factors. The health field Environment includes the larger socioeconomic processes as well as sociocultural factors like Castes. Environmental factors like urban or rural regions interact with Lifestyle Health Field factors like income and foodbasket. Organization of healthcare can also influence Lifestyle factors like incomes and eventually health, which further differs in rural and urban regions in different Indian states. These inter-relations are described in following sections.

The *Framework of Health Fields* is about using socio-economic factors to explain the inequalities and inequities in health. Therefore it also deals with quality. Additionally, the Framework highlights the inter-related, multi-dimensional nature of factors that influence health (Figure 6). The Lalonde Model implies incorporating qualities of health and healthcare for policy considerations and not about studying them as isolated entities. It allows elaborating on how the same factor can influence health directly as well as through interaction with the other factors within the health field [32].

The conceptual framework (figure 6) connects the NHP to the household factors which lie within the *Framework of Health Fields*.

Household factors influence the immediate environment in which the individual lives, functions and grows. They influence health and well-being. In effect, these factors have a qualitative impact on health. Hence, to explore if the NHP-II policy prescriptions address these factors, there is a need to firstly elaborate on *how* the policy prescriptions address the processes of improving quality.

Deming's 14 Points for reading through the policy

Deming's 14 Points (APPENDIX VI) are used, not as a complete and established framework, but as a part of this framework -as a tool- to help formulate questions that enquire into various processes adapted for achieving a desired outcome. Originally the points are intended for addressing the processes adopted by manufacturing industries to produce goods of high quality, on a long-term basis. However, Deming states in his works how the points can be used in any field that involves 'people' and networks to build processes. They assess the *'how' of the process* rather than the end-result alone [33]. Achieving quality health is also a process and health policies can provide vital guidelines on *how to* achieve it.

Further, to use Deming's Points as a tool key-questions based on them, were formulated (Figure 6). The tool helps ask the right questions to understand and elaborate how the NHP-II addresses the processes of improving health. These questions are formulated to address the field of public health and included in the conceptual framework. For example, while reading through NHP-II prescriptions that encourage mobilization of community health workers and community leaders, or providing continuous training to health workers, applying the key-questions to

each of the prescriptions made it easier to understand whether the prescription addressed capacity building, or addressed a top-down-bottom-up approach.

The NHP-II, through its various prescriptions, addresses Indian health and healthcare. Applying Deming's points can give better understanding of how it addresses the same. According to Deming's Points, 'capacity-building', 'removal of barriers of communication,' 'having a long-term outlook,' etc. are all processes that encourage better quality outcomes. Hence, NHP-II prescriptions which relate to such processes (Figure 6, APPENDIX III) also address the process of achieving better health quality.

The key-questions based on Deming's Points allow separation of various aspects of quality, when considering health and health policies.

Connecting the policy prescriptions that relate to the Deming's 14 points with the household factors within the Lalonde Health Fields within the conceptual framework

Hence, once the policy prescriptions do address the processes for achieving quality (Figure 6), how does it address the household factors that influence health and well-being so closely? In the framework diagram below (Figure 6), key-questions developed from Deming's points are tabulated in left. The numbers at the end of each key-question denote the Deming's Point underlying the question (APPENDIX VI).

The bidirectional arrows (in the right), indicate the dynamic relation between health and the various health-fields. Health-fields also influence one another as well as health. The curved lines represent the relation between household-factors and the health-fields. The same household factors are inter-related to more than one health-field and hence shown as a loop-structure.

Conceptual framework adapting Lalonde Model and Deming's Key Processes for Achieving Quality

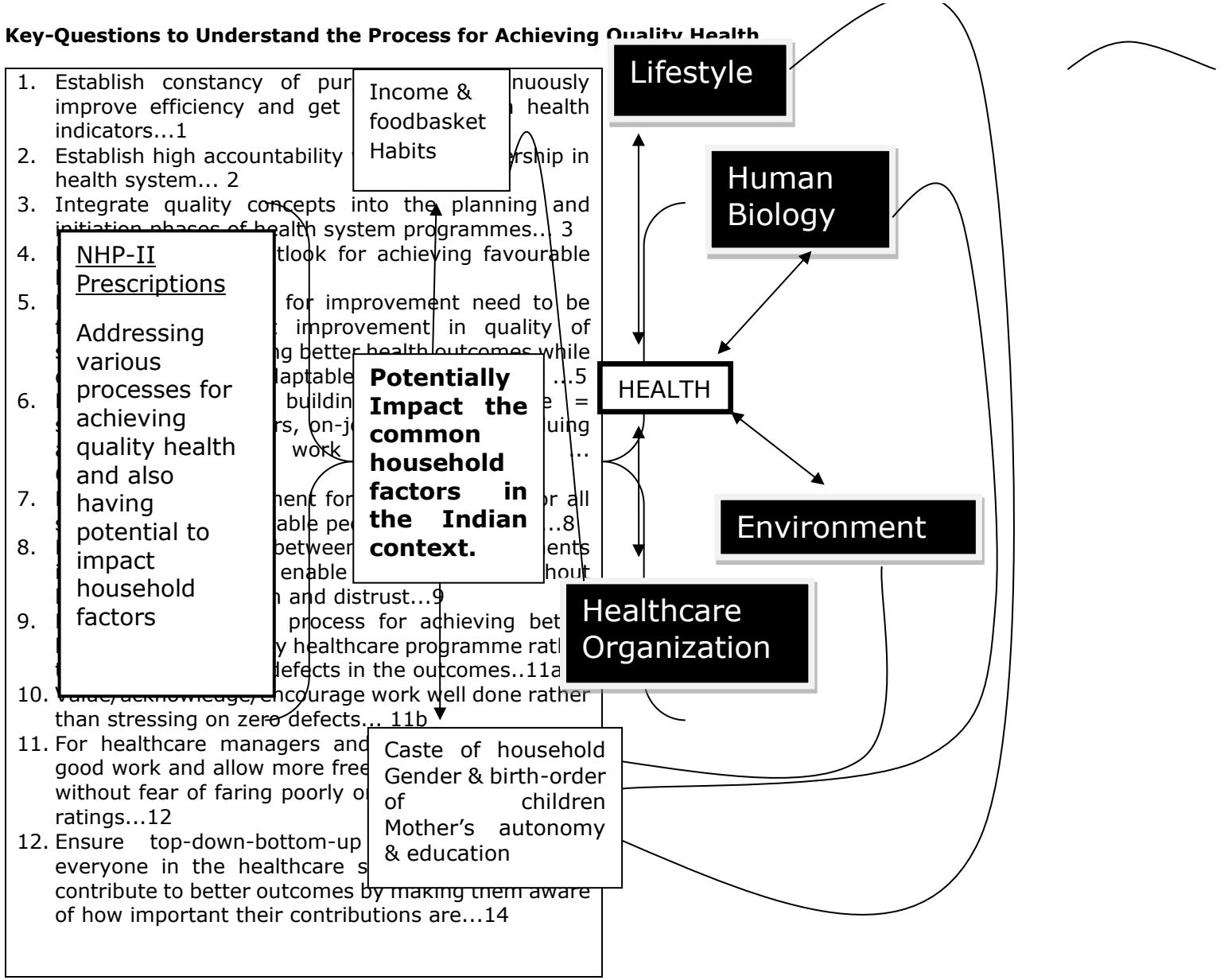

Figure 6: Conceptual Framework

CHAPTER 4: FINDINGS

This chapter describes the findings corresponding to the objectives being assisted by the conceptual framework. First is a description of the Indian NHP-II document followed by the prescriptions which potentially affect household factors in India.

4.1 Describing the NHP-II

The NHP-II objectives are: to achieve acceptable standards of good health among the country's general population by adopting an approach of increased decentralization of the public health system and to increase accessibility in deficient areas and by increasing the total public health investment by increasing the Central Government contributions, with extreme importance given to making the health system equitable [23]. Figure 7 shows how social inequities caused variations in health indicators in India (at the time when the NHP-II was formulated).

Indicator	Infant Mortality/1000	Under 5 Mortality/1000	% Children Underweight
India	70	94.9	47
Social Inequity			
Scheduled Castes	83	119.3	53.5
Scheduled Tribes	84.2	126.6	55.9
Disadvantaged			
Others	61.8	82.6	41.1

Figure 7: Differentials in Health Status among Socioeconomic Groups in India (NHP-II) [23]

The 41-page long document is presented in 5 major chapters: Introduction, Current Scenario, Objectives, NHP-II Policy Prescriptions, and Summation. Various sections and sub-sections exist within chapters.

On review, the document lacks a definite structure. Beginning with re-assessing the initiatives of the previous NHP-1983, the objectives of the present policy appear only in page 18. Furthermore, neither chapters nor subsections mention the approaches, methods or models applied for making the NHP-II document. Some information mentioned in the chapter: 'Current Scenario' overlaps with those presented in the chapter on 'Policy Prescriptions'. Although the prescriptions mention prioritizing school-based health programmes and funding women's health programs, there is no clear list of priorities within the document.

The Introduction – acknowledges the previous policy initiatives that yielded good results as well as ones that did not. Initiatives to provide trained 'health volunteers', a referral system, encouraging public-private partnerships and to eradicate smallpox and Guinea Worm Disease yielded positive results.

Chapter: 'Current Scenario' outlines the main problems plaguing healthcare in India. It acknowledges that achieving higher qualities of health is a process requiring attention at both central and peripheral levels in the decentralized system in India. Poor allocation of finances for health in public sector, increasing demands on existing infrastructures due to vertical approach of health programmes (e.g. Family Planning Program), out-of-pocket-expenditures (OOPEs) leading to impoverishment, large differences between states performing better

and poorer health-wise, poor outreach of Primary Healthcare Centres (PHCs), increasing burden of communicable and NCDs, increasing inequity in health among the poor and marginalized and increasing micro and macro-nutrient deficiencies in women and children have been highlighted as problems requiring attention by the NHP-II prescriptions.

The three-tier Indian public health system has the State Governments financing the primary and secondary health-systems. The NHP-II prescribes a gradual integration of all health programs. Table 3 shows the goals set by the NHP-II to be achieved by 2015. The 'Delivery of National Public Health' and the 'State of the public health infrastructure' are presented as separate sections within 'Current Scenario'.

GOALS	ACHIEVE BY
Eradicate polio and Yaws	2005
Eliminate Leprosy	2005
Eliminate Kala Azar	2010
Eliminate Lymphatic Filariasis	2015
Achieve zero level growth of HIV/AIDS	2007
Reduce Mortality from TB, Malaria and Waterborne diseases by50%	2010
Reduce prevalence of Blindness to 0.5%	2010
Reduce IMR to 30/1000 & MMR to 100/Lakh	2010
Increase utilization of public health facilities from current level of <20% to >75%	2010
Establish integrated system of surveillance, National Health Accounts and Statistics	2005
Increase Government health expenditure as a % of GDP from existing 0.9% to 2%	2010
Increase share of Central Grants to constitute at least 25% of total health spending	2010
Increase State sector health spending from 5.5% to 7% of the budget	2005
and further increase to 8%	2010

Table 3: Goals to be achieved by 200-2015 (NHP-II) [23]

Chapter: 'Policy Prescriptions' consists of 26 sections. Namely: Financial Resources, Equity, Delivery of National Health Programmes, the state of the Public Health Infrastructure, Extending public health services, Role of local self-government institutions, Norms for healthcare personnel, Education of healthcare professionals, Need for specialists in public health and family medicine, Urban health, Mental health, Information, education & communication, Health research, Role of private sector, Role of civil societies, National disease surveillance network, Health statistics, Women's health, Medical ethics, Regulation of standards in paramedical disciplines, Environmental and occupational health, Provision of medical facilities to users from overseas, Impact of globalization on the health-sector.

Chapter: 'Summation' has 6 subsections highlighting the major topics and aims covered by the entire document.

In the following sections, policy prescriptions are further reviewed from the perspective of *how* they address the *processes* of achieving quality[4]. Prescriptions are reviewed against the key-questions from the conceptual framework to learn whether they relate to them. The policy prescriptions selected are in *italics.*

The following sections, using the framework, highlight the inter-relations of the common household-factors and describe the NHP-II prescriptions that can potentially influence these factors.

4.2 NHP-II prescriptions and potential impact on household factors

Reviewing chapter 'Policy Prescriptions' using the Key-Questions from the conceptual framework shows: subchapters of financial resources & role of private sector have prescriptions which when implemented properly, can impact household factors like income.
The prescriptions are: *Increase health sector expenditure to six percent of GDP, with two percent contributed as public health investment by year 2010 and Increase commitment from state governments (to seven percent in 1st phase by 2005 and to eight percent in 2nd phase by 2010), Increase central government spending from 15% to 25% by 2010* respectively.

Sections on State & public health infrastructure, Family medicine, Nursing personnel, and information prescribe: *Decrease Out-Of-Pocket-Expenditures by increasing social insurance coverage; Creation of a beneficiary interest in the public health system – to ensure a more effective supervision of public health personnel through community monitoring (than through regular administrative lines); Encouraging participation of medical doctors as well as non-medical graduates in 'public health'; Increasing ratio of degree-holding nurses vis-a-vis diploma-holding nurses. Plus increase ratio of nursing personnel vis-á-vis doctors/beds; and Priority to preventive health education at school-levels.*

The above-prescriptions suggest decrease in OOPE while improving the quality of governmental healthcare and allow poor households to access the same. Thus, prevent them from approaching expensive and private healthcare facilities. These prescriptions, while relating to the *first* Key-question (conceptual framework; APPENDIX III), potentially affect the Health Fields of Lifestyle and Healthcare Organization and thus household incomes.

How household incomes in India are affecting health quality, is elaborated in the next section, by using the health fields from the conceptual framework.

4.3 The Health Fields and Household Factors

This section, considering the larger socioeconomic processes (from background and problem statement), elaborates on the inter-relatedness between the household-factors and Lalonde Health Fields.

4.4 Inter-action of Health Fields Environment and Lifestyle changes with household incomes and foodbasket.

[4] With help of the Key-Questions tool shown in the conceptual framework.

From 1980s, large masses of rural populations emigrated to urban centres in pursuit of higher incomes. About 30% of Indians now live in cities and is estimated to increase to 40% by 2026 [34,35]. About 53% of the urban populations belong to the self-employed and casual-labour households.

Unskilled workers from rural India migrate to the urban cities and form the lowest levels of the social ladder working as self-employed vendors and casual labourers. Temporary work and high prices in food force these households to cut-down their calorie intakes. Despite the evidence of daily income of US$ 1-2, for about forty-four kinds of employments (there are huge variations across the many States) evidence suggests that most of families living on US $ 1-2 per day face a minimum of three months of starvation every year [36-38,53].

Although per capita income has increased alongside per capita expenditure on food, internal trade-liberalization increased overall prices in *preferred foods*[5] in a given region, causing declined caloric intake of households (especially in rural India and among the urban poor) [25,34-5].

Recent National Sample Survey (NSSO) estimates that proportional spending on the household food-basket has declined in both urban and rural settings[6] [39,40]. This finding has be interpreted as, families – after initial phase in elevated spending on food-basket (with initial rise in incomes), tend to spend more on other services and commodities as time passes [34].

Initial increases in family incomes elevate household-spending on food products and a major part of the household food basket is consisting of refined, fatty and energy-rich foods [25]. Before the trade-liberalization, Indian calorie consumption was close to adequate. However, post-1990s, the nature of calorie consumption changed – less of cereal-grains and more of milk / milk-products and animal-flesh foods. The food consumption pattern has wide disparities amongst urban and rural as well as different socioeconomic groups [26,41-2].

The rural sector saw rising prices of coarse cereals and local crops. Removal of import restrictions plus internal-trade liberalization further made cheap-quality oils and fatty foods more affordable.

Household incomes are related to the household food-basket structures. Rural households are increasingly reducing their consumption of cereals, especially coarse cereals and green leafy vegetables while showing a tendency to spend more on cheap, low quality oils, refined rice and wheat based products. The rural zones also show a marked expenditure on consuming milk, milk-products, non-vegetarian foods and beverages. Hence, the rural consumption boom[7] is showing

[5] Agriculture by local farmers consisting of coarse cereals and pulses.

[6] Consumers consistently opt for cheaper foodstuffs. The previous study by the NSSO estimated the share of food in consumer expenditure in urban and rural settings as 44.4% and 57% respectively. Presently, the proportional spending on food in total consumption has declined since the last two decades by around ten percent points to 53.6% in the rural down by sixteen percent points to 40.7% in the urban sector.

[7] In both, the urban as well as rural sectors, there is marked increase in spending on non-food products like education, consumer durables and recreation inter alia with the drop in expenditures on food products [1,39].

trends in the household food basket similar to that witnessed in urban areas[8] [4-6,41-3].

CATEGORY	INDIA 1995	INDIA 2025
Overweight	9%	24%
Saturated fat, % of total energy	4.7%	9%
Low birth weight (30 years ago)	44%	28%
Stunting (30 years ago)	57%	53%
Hypertension	16.3%	19.4%
Diabetes (% of whole population)	2.1%	3%
Population size (millions)	929	1330
Percentage rural	73%	48%
GDP/capita	$340	$875
Annual wage (US$)	$170	
Source: Popkin et al. (2001)		

Figure 8: Predicted Burden of Disease (problems in addition to present ones) [2].

Most States in India have been food-deficient. Before trade-liberalization, the accountability of the public distribution system (PDS) was high. PDS provisions of ration shops, midday school meals, and pensions to agricultural households provided a back-up system. However, post-liberalization, increases in prices of essential goods and services in the PDS have aggravated malnutrition within the poor and marginalized populations[9] resulting in wide inequities in health as well [12,44-5].

Increasing sedentary lifestyles with decline in physical activities; consumption of refined wheat and rice instead of coarse cereals and millets together with high amounts of oils and fats and the western-type of fast-foods, leads to levels of obesity in the urban population drawing a parallel with levels of malnutrition in the rural parts (Figure 8, Figure 9).

Urban India has a marked tendency to spend more on highly saturated fatty foods and refined sugars[10] [16,22,46] (Figure 9). The foodbasket changes show increasing demands for bread and temperate zone fruits and vegetables. In urban zones, 29% of school-children were found to be overweight with BMIs exceeding 25 and of these, 6% were obese. Amongst adults (15 to 49 years of age), the percentage of men and women having BMIs exceeding 25 were 9.3 and 12.6 respectively and more common within the urban settings [16,46].

[8] The 66th survey conducted by the NSSO has estimated that the urban per capita expenditure exceeds the rural counterpart by ninety-one percent [39]. The 61st survey in 2004 by the NSSO had estimated this widening disparity at eighty percent.

[9] Major gaps in incomes between the urban and rural sectors have compounds the problem for the state governments [45].

[10] FDIs in India have grown over the past decade [from $100 million in 1990s to about $5.5 billion]. A major proportion of the FDI received goes into food-processing and retailing. FDIs from Transnational Food Companies (TFCs) have flooded the markets with low priced and low quality oils [4,18,19]. Major trends accompanying the growth in the Indian food industry are: increasing trends of urbanization; upshot of large numbers of super-markets and malls (mostly within the urban zones); increasing employment of women labourers and consequent increase in family incomes and thus increased spending on foods [27,38,48,60].

The problem of chronic NCDs in burgeoning middle-class populations in urban areas, suggest that moderate increases in *per capita* incomes don't result in a corresponding increase in nutritional status [27,36-8,43,48]. Obesity and related metabolic diseases were more prevalent in higher socioeconomic groups while low consumption of fruits and vegetables, increased tobacco and alcohol abuse alongside underweight and stunting (a sign of chronic, under-nutrition) were common in lower socioeconomic groups [6,34].

Connecting policy prescriptions with the household incomes and foodbaskets

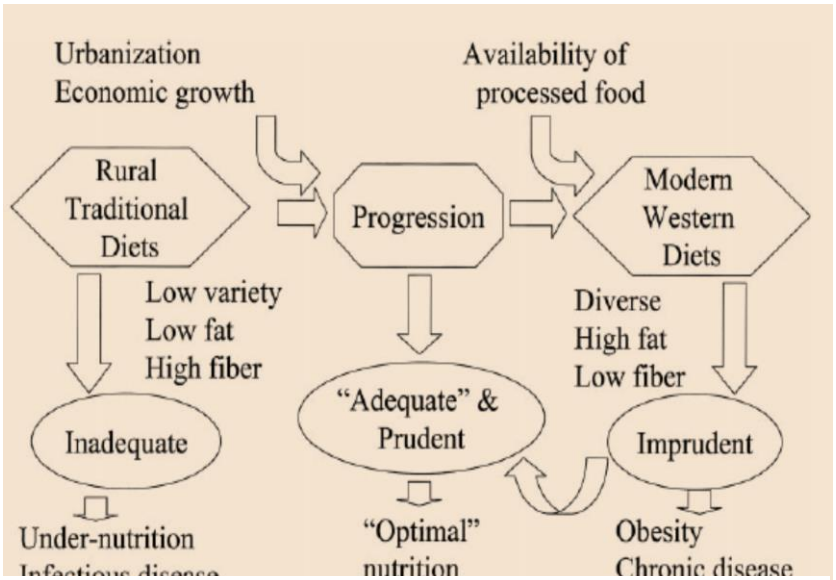

Figure 9: Urbanization, Migration & Changing Nature of Diet Source [66].

On review, the NHP-II prescriptions do not directly address issues regarding foodbasket and income. However, many of its prescriptions mentioned in the following paragraph have the potential to indirectly address the abovementioned situation by influencing Health Fields of Lifestyle and Healthcare Organization in India.

Policy subchapters of Equity, Public Health Infrastructure, Urban health, Role of local self government and Information prescribe: *Increase sectoral outlay in the primary health sector (cost effective way of reducing intersectoral/rural-urban divide inequities); Decrease prices of essential drugs; Decentralization and financial incentives over and above the resources normatively allocated for disease control programs provided by the Central Government; Priority to preventive health education at school-levels; and Complete baseline estimates in health statistics for communicable and NCDs.*

The abovementioned prescriptions though indirectly, can potentially address household-incomes while aiming at cost-effective ways of reducing inequities. These also address the Key-question of having a long-term outlook because they suggest measures that are beneficial on a long-term basis[11] (APPENDIX III).

Further, prescriptions – *Encourage treatments regimens (private/public sector) based on a limited number of essential drugs of a generic nature; Encourage use of only essential drugs in the private sector with imposition of fiscal disincentives; Prohibit production and sale of irrational combinations of drugs through drug standard statutes; and Envisage a contemporary code of ethics to be rigorously implemented by the Medical Council of India,*-potentially address the key-question of establishing an environment allowing for quality health. They aim to improve confidence in the system and address malpractice and corruption at levels of service delivery and address the OOPEs. These prescriptions, when correctly

[11] Provided implemented properly.

implemented, affect the health Fields Lifestyle and Healthcare Organization, and through them – household factors. This is further explained, using the conceptual framework.

4.5 Impact of Health Field 'Organization of Healthcare', on household incomes and health quality

Alongside trade-liberalization, urbanization and increased internal-migration, private expenditure on health has dramatically increased than *per capita income.* The OOPEs on health during 1991-2003 increased at a rate of 10.9% per annum in real terms whereas per capita income grew at 3.8% during the same period. *The poorest 20% in the country use only 10% of the net public subsidy and the richest quintile benefits 3-times more than the poorest.* Over 70% of healthcare expenditure in India is an OOPE [5,76,78].

As mentioned in the background, the poor are 2.6 times more likely to forego medical treatment when ill due to financial reasons. Poor households spend significant part of incomes on transport and informal charges. For 70% of the rural population, an accessible and working healthcare system appears improbable [16,17].

In Madhya Pradesh and Rajasthan, (Figure 3), health-related OOPE caused households to slide under the poverty line. In these States, in the last decade, the number of households escaping poverty was nearly the same as those becoming impoverished.[12]

Apart from poor governmental-healthcare quality, over eighty-percent of healthcare services are available only via the privatized sector where informal charges drain household finances [5,18,19].

Another factor contributing to catastrophic OOPE among rich and poor is the widespread notion that every malady or feeling of unwell being can be rectified by using antibiotics and tonics. Amongst both the rich and poor, is an increasing tendency to believe in general, that health is a state that can be achieved by consuming pharmaceutical commodities, namely medicines – a belief endorsed by private healthcare practitioners, especially ones who overprescribe medications [49,50]. From a policy point-of-view, this can be tackled by increasing awareness and access to information. However, the highly unregulated private healthcare-sector handles over 80% of the disease burden in India – and is simultaneously aggravating the illness-poverty trap for Indians [19,49-52].

In the previous section, the NHP-II prescribes reducing prices of Essential Drugs and encouraging only their use by private practitioners, which even when correctly implemented might still pose many challenges[13].

Besides aforementioned prescriptions (including ones to reduce OOPE) which potentially impact household incomes, prescriptions addressing processes of providing adaptable and context specific health programs (APPENDIX III) would also potentially address the household-incomes via effects on healthcare organization, provided implemented properly.

[12] Other causes of severe impoverishment are: cultural factors (marriage and death-feasts) and borrowing money to meet expenses from private individuals at high interest rates. Family size in a household could not be established as a definite determinant.
[13] Further described in the Discussions Chapter.

Subsections from chapter on Prescriptions address these issues with initiatives such as: *Minimal statutory norms for doctors and nurses in medical institutions to be urgently introduced under provisions of the Indian Medical Council Act and Indian Nursing Council Act respectively; Revise existing medical and paramedical curriculum, alongside periodic skill-updating of working health professionals through CMEs; Involve undergraduate trainings in geriatric care as well as medical research; Involve community leaders (religious leaders) for spreading knowledge to initiate behavioural changes; Prioritize preventive health education at school-levels; Complete baseline estimates in health statistics for communicable and non-communicable diseases; and Establish National Health Accounts (estimates of health costs on a continual basis).*[14]

Religious and community leaders directly influence behavioural changes and thus influence household factors. Issues regarding women's education, their autonomy within households and even corruption within the healthcare-sector can possibly be addressed more effectively through community-leaders. NHP-II prescriptions on community monitoring of health programs and health education at school levels will go a long way in involving the girls and women in health-related decisions, in habits and health-seeking behaviours within households.

Findings on these inter-relations are presented in the following sections.

4.6 Effects of Environment and Lifestyle Changes on household factors like Mother's Autonomy and Education which affect individual health

Indian trade-liberalization has caused a 'feminization' of poverty. More women (in urban poor and rural zones) are employed in cheap agricultural labour and in micro-financed industries[15].

These contribute to long working-hours away from home, poor maternal-health and possibly heighten the degree of malnutrition in children under-five years of age. Households solely headed by women apparently have more poverty and poorer health outcomes for the adults and children. Although it is progressive to have more women earning in households, major proportions of women are employed in low-earning-long-hours of micro-financed industries: a result of declining incomes from agriculture; migration and urbanization. In urban areas, the growing employment of women, the increasing relative instability of marriages[16] cause more families and households run by single parent [15,27,31,34,53-57].

[14] These prescriptions are mentioned in different subchapters of Norms for healthcare personnel; Education of healthcare Professionals; Information, education & communication; and Health Statistics in the NHP-II.
[15] A big impact from trade policies aiming to increase FDIs.
[16] Traditional, Indian patriarchal systems where husbands are seen as sole bread-earners for the family, are still to adapt to employment of women.

Culturally women have a low social status within individual households. Being married-off at very young ages (see box for national statistics), inadequate division of household resources including food and workloads ensue. In many families, women are expected to live on left-over foods and eat lesser amounts than the men. This prevails even during her pregnancy and lactation allowing for maternal-foetal malnutrition. Early marriages also imply more pregnancy complications; less chances of institutional delivery; less timely care; and more exposure to domestic violence within households and increased susceptibility to infectious conditions through the husbands [9].

In contrast, better nutritional status of mother before, during and after the pregnancy relates to better nutritional outcomes for children [58-59] (APPENDIX I).

Households where the mother enjoyed more autonomy showed less malnutrition among the children but in most households (Table 2) men retain autonomy for decisions regarding immunization and education of family members [66,70-72]. Also with better educational status of the mother, lesser malnutrition is observed in children.[17]

Connecting Policy Prescriptions to Mother's Autonomy

Although NHP-II prescriptions don't mention 'gender' specifically, subchapter: 'Women's Health', mentions the initiative to increase access of women to basic healthcare without stating *how* to do so.

Whether through increasing media awareness, or via training of healthcare workers or through political will, the policy fails to mention any clear approach. However, this positively emphasizes the importance of considering this household factor in implementing this initiative with added context-specificity.

> Early marriage means early pregnancies. "Women in India continue to get married at a young age: 18% of women aged 20–24 years were married by the time they were 15 years old and almost 47% before the minimum legal age (18 years) for marriage. Early marriage is followed by early pregnancy. The National Family Health Survey3 reports that 28% of women aged 20–49 years had given birth by the time they were 18 years old, and 24% of those aged 18 years had already begun childbearing (had a live-birth or were pregnant with their first child)," [6,9].

Apart from the policy-prescriptions mentioned in the subsections before, NHP-II prescriptions (section 4.7) addressing behaviour changes , information and health education can potentially impact mother's autonomy as a household-factor, positively.

[17] The NFHS-3 survey estimated that in 2005-2006, infant mortality in the poorest quintile was 82 per 1000 live births and 34 per 1000 live births in the wealthiest quintile. The U5MR in children born to mothers with over five years of education was 49 per 1000 live births while the same rates in children born to mothers with no education was estimated at a 106 per 1000 live births [6].

4.7 Health field – Human Biology and impact of factors like gender and birth order of children within household on health

Even before the 1980s, preference for the male child (on account of the patriarchal system and inheritance laws) was highly prevalent in India causing neglect of the female child resulting in higher levels of malnutrition among women and girls compared to their male counterparts. However, the present imbalance in the sex ratio (Table 1) highlights deterioration in attitudes towards the girl-child. Women and female children show greater evidence of malnutrition as compared to their male counterparts [53]. Figure 10 shows increased susceptibility to poor health of Indian women compared to men.

Social notions regarding the male child having more economical, social as well as religious usefulness contributes to this inequity. The predominant patriarchal family structure in India allots lower social status as well as poor autonomy for women and the female child. It encourages communities to favour the male child causing neglect of the female children [1,16,58-60]. Abortion of the girl-child is particularly increasing in India and the most populated States have very high numbers of such practices[18] [61]. The present sex-ratio imbalance in India is the worst since 1960s. The sex-ratio among children under 6 decreased from 906 girls/1000 boys to 836 girls/1000 boys between 1990 and 2005. Selective abortions also occur in households with higher incomes and education. Socioeconomic situations rather than geography influence these choices [74]. Girls also confront lower rates of immunization and less prompt access to health care facilities and are ten percent more likely to be stunted than boys the same age alongside less immunization than boys [16,36,58,59].

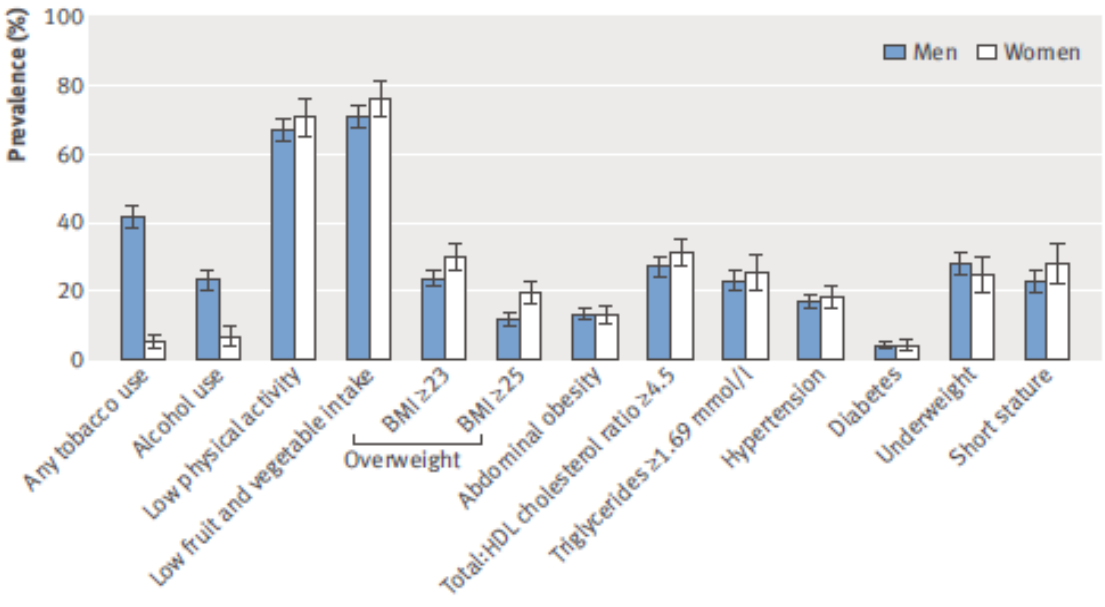

Figure 10: Standardized prevalence of risk factors for non-communicable diseases in rural participants of the Indian Migration Study [7].

[18] Because State population increases on account of internal-migration and urbanization. IMS shows that poorer people form the bulk of immigrants to cities. They cannot afford a girl-child on account of prevalent social norms, which contribute to increased infanticide apart from other reasons.

Birth-order of a child within the family has crucial significance on nutritional outcomes. The first born irrespective of its gender is expected to have better long-term nutritional status as compared to the third or fourth born. Children with same sex older siblings are more prone to malnutrition than children with opposite-sex older siblings [13,14,36,53].

Although NHP-II fails mentioning Birth-order directly, initiatives implemented to tackle the sex-imbalance will indirectly influence this household-factor.

Gender preponderance for malnourishment also varies between different states and within districts in the same state. Among adults in rural India, 37.4% of males and 39.4% of females suffer from chronic energy deficiency (CED). Rural women are more in danger of being underweight than women in cities. However, there is no evidence that the same relation can be applied to women living in small or large cities and towns [29,53].

As mentioned before, policy-initiatives on increasing awareness of prevalent problems via the media, encouraging active participation of doctors and nurses in public health, can all affect health-seeking behaviours and via them the individual health in households. Further, initiatives of training health-staffs, decentralization of health-sector governance, involving local governing bodies, social activists/NGOs, and traditional medicine practitioners, to create better services and outreach, educating the rural health staffs, all increase context-specificity.

These potentially address household factors of mother's autonomy and gender-based discrimination in households, although indirectly. Further, sociocultural attitudes towards women and the resulting health-seeking behaviours can only be addressed through implementing properly, these various initiatives at appropriate levels in the decentralized system.

Sections[19] from Chapter 'Prescriptions', potentially address above issues. Prescriptions like: *Creation of a beneficiary interest in the public health system – to ensure a more effective supervision of public health personnel through community monitoring (than through regular administrative lines); Encouraging participation of medical doctors as well as non-medical graduates in 'public health'; Increasing ratio of degree-holding nurses vis-a-vis diploma-holding nurses and increase ratio of nursing personnel vis-á-vis doctors/bed; Priority to preventive health education at school-levels; Encourage involvement of State Government officials, social activists, private health professionals, MLAs/MPs on management boards of autonomous bodies for well-informed decision making; Encourage handing over public health service outlets to NGOs & other institutions of civil society; Urging the State Governments to consider decentralization of program implementation to local self-government institutions by 2005; Implement disease control programs through NGOs and other civil service societies; Priority to preventive health education at school-levels; Frequent in-service training of medical officers as well as paramedics; Decentralization and financial incentives over and above the resources normatively allocated for disease control programs provided by the Central Government; Encourage involvement of State Government officials, social activists, private health professionals, MLAs/MPs on*

[19] Sections from Chapter on Prescriptions are the State of the Public health Infrastructure; Role of Local self-government institutions; Norms for healthcare personnel; Education of healthcare professionals; Financial Resources.

management boards of autonomous bodies for well-informed decision making; Involvement of community leaders (religious leaders) in spreading knowledge to initiate behavioural changes; and Revision of the existing medical and paramedical curriculum alongside periodic skill-updating of working health professionals through CMEs.

With proper implementation, the above initiatives can increase community sense of ownership in health, increase awareness of health professionals through context-specificity, educate children about factors in homes affecting health, inspire political will to enhance healthcare initiatives through more involvement and thus can potentially influence household-factors.

4.8 Impact of Changing Environment and Lifestyles on Household-factor of habits influencing individual's health

Increasing migration and urbanization, rapid growth of the middle-class parallel to rapid socioeconomic growths have resulted in an overall initial adoption of harmful behaviours amongst people[20].

In cities, the upper-income quintiles and the geriatric populations have increased sedentary life-styles, coupled with physical inactivity and obesity. Though socioeconomic development has a strong relation to healthy behaviours, the rapidly evolving socio-economic status evinced in India has a positive co-relation with increases in overall obesity and diabetes (Figure 8, Figure 9). Behaviours with direct consequences to the health of the population include physical inactivity, increased consumption of high-energy (refined) foods, increasing risks of road traffic injuries from driving under the influence of alcohol and without seat-belts above safe speed limits. This is evidently true for both urban and rural rich [36,54].

The Indian Migration Study (IMS) found that, although urban men are twice as *less* likely to indulge in healthy physical activity than their rural counterparts[21], the proportion of persons involved in healthy physical activities, is declining in both urban and rural areas. This means that both groups are adopting unhealthy habits.

Estimates suggest nearly 35 percent of the rural population and up to 56 percent of the urban populations have insufficient, healthy, physical activities. Another risk behaviour contributing to the upsurge of lung cancers, chronic obstructive pulmonary disorders and cardiovascular diseases is the consumption of bidis and smokeless tobacco. These two products account for eighty-one percent of the Indian tobacco market[22] [25,35,37,54].

An additional, habit-related disease-trend between socioeconomic classes exists.

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[20] Literature reviewed suggested that the harmful tendencies to health even out from the 2nd generation onwards [34,36,54].

[21] Despite more awareness in urban areas regarding health-hazards related to sedentary lifestyles as well as better facilities.

[22] Bidis are hand-rolled cigarettes with a leaf-wrapper produced in India. Nearly all bidi manufacturing in the country is by women working from their homes and in the absence of both employment rights as well as any health and safety regulations. In spite of the high health risks associated with tobacco (and more so with bidi) use, manufacturing and regulatory policies seem to favour bidi productions. Persons producing less than two-million bidis a year are exempt from paying excise tax though taxes levied on those exceeding this production are negligible [54].

The higher socioeconomic groups tend to suffer from NCDs like type-2 diabetes, obesity, dyslipidaemias and alcohol consumption while the lower socioeconomic groups show increasing consumption of alcohol, tobacco and decreased intake of vegetables and fruits, causing stunting in children, short stature in adults and underweight problems[23] [13,25,54,63].

NHP-II initiatives of spreading awareness through media and education through schools and community/religious leaders, as aforementioned, have the potential to address habits within households. More of related prescriptions are presented after the following section.

[23] With regional differences within and amongst states.

4.9 Impact of health field Environment on household factor 'Caste' and individual health

Amongst socially disadvantaged groups (APPENDIX IV), Schedule Castes (SCs) and Scheduled Tribes (STs) have a definite preponderance for undernutrition as compared to persons belonging to Other Backward Castes (OBC).

The SCs (sixteen percent) and the STs (eight percent) are a most deprived group in India (Figure 7). The SCs and STs had a higher proportion of underweight and stunting in children under-five, while the adults suffer from the long-term effects of chronic undernutrition. Lack of essential information on healthy diets; poverty; poor accessibility to healthcare services; further aggravate the poor health in already marginalized populations. The higher castes show relative preponderance to suffer from NCD-related health problems [19,35,64-5].

Majority of the internal-migrant, unorganized workforce in India, belong to the SC, ST, and OBC categories. Education levels among them are minimal, and they end-up with very low social and political status even after migrating. Employed in the informal sector, exploited for labour, poor access to healthcare facilities and lack of information compound their poor health qualities [36].

On review, NHP-II prescriptions fail to directly address the issues of caste-based-discrimination. However, it highlights the health-inequities prevalent therein (Figure 7).

However, many policy-prescriptions aiming at reducing OOPE, increasing awareness of health-professionals, including the local practitioners in community healthcare, decentralizing healthcare and including regional NGOs to increase facilities and outreach, spread of information through inter-personal as well as folk and traditional media, are likely to impact the lives of the marginalized people through indirect means and only when implemented properly.

NHP-II prescriptions of: *Mobilization of all rural health staff for public health activities at the decentralized levels; State Governments: extend the pool of medical practitioners to include persons qualified in fields of Indian Systems of Medicine and Homoeopathy. Let these practitioners provide simple services/procedures outside their disciplines (especially in under-served areas); Encouraging participation of medical doctors as well as non-medical graduates in 'public health'; Encourage private entrepreneurship in fields of medical research; Implement disease control programs through NGOs and other civil service societies; Quality of public health services, as reflected in the attainment of improved public health indices; Standards of health are more a function of the accurate targeting of expenditure on the decentralized primary sector than a function of aggregate health expenditure; Include general duty medical staff to provide mental health services (diagnosis/prescriptions for common disorders) on a decentralized level; Implement disease control programs through NGOs and other civil service societies; Involve undergraduate trainings in geriatric care as well as medical research; Urging the State Governments to consider decentralization of program implementation to local self-government institutions by 2005; State Governments: extend the pool of medical practitioners to include persons qualified in fields of Indian Systems of Medicine and Homoeopathy. Let these practitioners provide simple services/procedures outside their disciplines (especially in under-served areas); Maximize dissemination of information through*

inter-personal communication of information & folk & other traditional media,[24] - can *potentially* affect multiple household-factors, caste included.

Above-initiatives of NGOs working locally can facilitate customized, region specific healthcare needs through their networks [80].

Educated rural health staffs are more aware of their local health problems and contributing factors. They are thus better equipped to address the issues that dominantly affect the household-factors within a specific region. Better trained staff equals customer satisfaction and improved health-seeking behaviour and faith in the system. This leads to improved quality of healthcare which further reinforces faith in the system. For most people, this can promote better health-seeking behaviours at household levels.

Further relevance of abovementioned prescriptions are reflected upon in Discussions.

[24] From Subsections: Delivery on National Public Health Programmes; the State of the public health Infrastructure; Extension of Public Health Services; Education of Healthcare Professionals; Financial Resources; Role of Local Self-government Institutions; and Information, education & Communication.

CHAPTER 5: DISCUSSIONS

This chapter, considering the framework, reviews the important lessons from information presented in the Background and Findings.

5.1 On reviewing the NHP-II using the Conceptual Framework

Findings show, although the NHP-II document lacks a definite structure, it is possible to focus on prescriptions that potentially relate to quality of healthcare and well-being by applying the conceptual framework.

The framework links the understanding of the broader-level NHP-II document with factors closer to individual health in India. Findings further show that while addressing various approaches for better healthcare quality, many prescriptions can potentially affect common, household-factors too.

Often, the same prescription relates to multiple key-questions (Findings and APPENDIX III) while showing a potential to impact multiple household-factors. This signifies a number of inferences.

1. That NHP-II initiatives can influence the same household-factors affecting health, through addressing various processes of achieving quality health.

2. When the same prescription potentially affects quality in multiple ways, i.e. by addressing more than one household-factor, likely, its initiatives have more potential to yield beneficial, and longstanding results, – provided, implemented properly. For instance, findings show: prescription to target preventive health education at school-levels can possibly address issues of gender-discrimination as well as mother's autonomy and caste-based discriminations. Hence, this initiative promises to yield positive results in the long-term provided implemented wisely.

3. Future studies based on above inferences are likely to provide valuable insights to public health in India.

5.2 On the NHP-II Approach to positively impact household factors

Findings also show that prescriptions advising decentralization to the level of the local self governments allow for a sense of ownership and responsibility within various States implementing its initiatives.

This helps introduce context-specific behavioural changes necessary to affect ultimately, the household-factors, as prevalent gender-based discrimination and caste-based marginalization can be addressed with more focus. The key-questions from the framework helped identify the prescriptions that address context-specificity.

Involving religious and community leaders alongside health-volunteers can directly influence behavioural changes in households. Though policy initiatives don't directly address household-factors, findings show that proper implementation of many initiatives can affect issues regarding women's education, their autonomy within households and even corruptions (mentioned in 2.1.1 and 2.1.2) more effectively.

5.3 On elaborating the importance of household-factors using the Conceptual Framework

Findings emphasize that Indian health is a dynamic interplay between the socioeconomic processes[25] and factors within the households. However, the natures in which household-factors influence individual health quality vary widely: between States and between urban and rural areas within the same and different States.

For this paper, considering the socioeconomic processes gave a broad understanding about their indirect effects on households and well-being therein.

Applying the framework made it possible to elaborate inter-relatedness of household-factors to both: changing socioeconomic conditions in India and health fields. The framework also enabled linking these with NHP-II prescriptions.

Notwithstanding the disparities in health already perpetuated by the existing caste-based or gender-based social-stratification, the socioeconomic processes aggravate the problem, -by creating a wider breach between the rich and poor. The four Health Fields highlight consistent inter-relations between different household-factors even in changing urban and rural scenes. Keeping the factors as common denominator, elaborates how rural households have lowered affordability and accessibility to healthcare facilities[26]. Similar considerations are due for the urban poor as well.

Household spending on food and healthcare (combined with the sociocultural attitudes towards women and children) relate directly to the nutritional status within Indian homes. Findings elaborate the nature in which household incomes and foodbasket have changed in rural India and for the urban poor. Considering the growing burden of NCDs in these populations, it's important to analyze the policy from a household-factors aspect, to assess the changing nature of health quality.

5.4 On inter-relations of household-factors and socioeconomic processes

Literature reviewed, also highlight positive influences of the socioeconomic processes described in this paper. They highlight the principles of free-trade, migration and urbanization as opportunities to a better quality of life by providing more choices. They further cite examples where households have positively improved the quality of living by adjusting to effects of migration, internal-trade-liberalization and urbanization[27] [18,19].

However, growing concern over the poor health conditions amongst larger proportions of Indians and learning that these conditions directly or indirectly relate to these socioeconomic processes, imply that they are imperfectly adapted to within the Indian context. Apparently, a better income alone, does not imply better health for most Indians [22,39,43,55]. The framework allows elaborating these dynamic influences. States performing poorly in context of income and health-indicators (Madhya Pradesh, Uttar Pradesh, Uttaranchal, Chhattisgarh,

[25] Internal-migration, trade-liberalization and urbanization.
[26] Owing to poor outreach and increased privatizations of healthcare.
[27] Especially in the wealthier states.

Bihar and Rajasthan) also have a uniform distribution of health inequities when compared to states with higher and more rapid economic growth (Chandigarh, Kerala, Maharashtra, Tamil Nadu).

Having the household-factors as a constant, findings show it's possible to analyse how individual health in these States, flexes and adapts to the stresses from the socioeconomic processes.

5.5 On the importance of considering the inter-relations between household factors

Further from Findings: elaborating the inter-relatedness between household factors show that simple consideration of individual factors for malnutrition in Indians cannot entirely explain the wide inequities in health quality i.e. considering just the household foodbasket or income or mother's status or gender of children in isolation, doesn't provide a holistic understanding of malnutrition.

Often malnutrition in urban rich is evidenced because, even if household incomes are adequate, the mother's autonomous powers are curtailed. For in many rural parts of wealthier States (e.g. Kerala), despite low incomes, increased autonomy of mother allows for better health status of children and family. Hence, although each of the household factors can be considered a major determinant of malnutrition in their own right, in order to explain prevalent inequalities and inequities of malnutrition, it is better to consider the household-factors as a group. Likely, this provides better context specificity as well as enables policy makers to compare and contrast between the States doing well (in health-indicators) and ones performing poorly, below the country-averages [79].

5.6 On the NHP-II prescriptions shown to potentially impact household factors and thus individuals health

Using the framework shows that the NHP-II initiatives are intent on improving healthcare quality in India. However, its initiatives can potentially influence individual health only indirectly, even if the challenge of successfully implementing them is overcome.

The NHP-II prescribes a gradual integration of all health programs without stating *how* the States can do so. As most health programs and interventions in the country are still administered, funded and implemented Centrally, suggestions from the Centre on *how to* integrate various programs can add more depth to policy-initiatives. Particularly, with regard to devolution of powers to the local and civil institutes regarding funding, allocation of funds and decision-making, the policy appears to have a dominantly top-down approach.

Reviewing the health policy with special focus on household factors helps learn why programmes and interventions evidence different outcomes in various contexts even when the larger socioeconomic influences remain the same. Doing so allows inclusion of individual health quality (with context-specificity), in planning preventive and control measures in healthcare. Therefore, although the different transitions in Indian health will call for different strategies; this framework enables analyzing the policy's approach to healthcare quality.

The NHP-II prescribes increasing the sectoral outlay. However, historical facts show that simply increasing financial inputs don't translate into better health outcomes. Also, essential transparency and accountability between various stake-holders[28] isn't addressed by the NHP-II. However, considering household-factors, policy-makers can prioritize issues while implementing this initiative. As in, invest more in Gender-education where households (rich/poor) practice discrimination.

Further, for measures to cut-down OOPE and provide equitable healthcare, NHP-II commendably prescribes to decrease prices for Essential Drugs alongside

[28] These are essential quality-related processes for any initiative to take effect.

encouraging use of only essential drugs in the private sector with imposition of fiscal disincentives.

Yet, an important concern is whether it could be done to an extent to make drugs affordable for those most affected in rural areas. In the absence of universal insurance-coverage, *how does* this provide a safety-net for the poor and marginalized people? Does it mean more accessibility to medicines? Will it result in better maternal and child-health? Moreover, can the pharmaceutical industry[29] afford it?

Hence, rather than reduce prices of essential drugs[30] would not treatment according to 'capacity to benefit'[31] be a fairer option? Also, given the vastness of India, this approach too can be a challenge. Further, as mentioned in Findings, another challenge faced by the State in overcoming hazards of poor health perpetuated by the growing privatization of healthcare is the prevalent notion that quality healthcare is only obtained from private healthcare providers.[32]

These concerns call for future studies on these policy-initiatives. Additionally, policy prescriptions fail to address regulation of the pharmaceutical companies. An important consideration is how Essential Drugs can be made the norm of practice within public and private sectors. Indian pharmaceutical industry lies outside the purview of the MoH&FW (footnote 27). Hence, unless there is sufficient political

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[29] Curiously enough the pharmaceutical regulation in India falls under the Ministry of Petroleum, Chemicals and Fertilizers and not under the MoHFW. This calls for an inter-sectoral approach (not addressed in the NHP-II).

[30] Notwithstanding possible resistance from the pharmaceutical industry.

[31] Capacity to benefit: Provide treatment to people depending on how well the treatment can benefit the individual and not based on whether they have the resources to afford it or not.

[32] It is possible that the post-globalization era and increasing spread of capitalism, contribute to this phenomena. India is the largest producer of generic drugs in the world and the Indian Pharmaceutical industry represents nearly eight percent of the global total industry in terms of volume and nearly thirteen percent by volume. Commodification of disease plus pharmaceuticalization tends to advance the idea that every malady or feeling of unwell being can be rectified by the use of pharmaceutical goods like antibiotics and tonics. Amongst both the rich and poor, is an increasing tendency to believe in general, that health is a state that can be achieved by consuming pharmaceutical commodities, namely medicines. Physical conditions which in the past would be attributed as a common, expected change in physiology might now be categorized as a medical ailment. The drug now named Viagra and marketed by Pfizer is one such example. Though introduced as a drug to treat cardio-vascular conditions, the RCTs suggested that many patients in the clinical trials were experiencing side-effects they thought favourable. Erectile dysfunction which was largely considered a natural part of aging suddenly became a treatable entity without much consideration to the possible adverse effects of making the drug available over the counter. This is a fine example of commodification plus medicalization plus pharmaceuticalization of health [49,50]. The discoveries of statins have also made a similar impact on health assessment. The idea that high levels of blood cholesterol can be simply contained by popping a pill (statin) has contributed to the extensive prescription of these drugs though adverse events and long-term sequels are still to be ascertained. Further, RCTs of these drugs fail to highlight the contributions of food-culture and healthy habits on individual and community levels and health policies on a wider national level that contribute to the availability and consumption of unhealthy processed foods. Obesity treatments and RCTs that measure the health interventions to tackle obesity fail to highlight the social contributory agents when stating the interventional mediators and outcomes.

will for enhanced inter-sectoral approach, even implementing rigorous code of ethics by the Medical Council of India, doesn't assure that pharmaceutical companies will honor the same. Hence, some suggestions by the policy might require tremendous inter-sectoral cooperation for their implementations to impact household-factors.

As mentioned in the Background and Findings (section 4.5), transport & informal charges alone contribute to impoverishment of poor households when seeking medical care. However, the policy suggests (in subchapter: Role of Private Sector) States and Central governments promote private medical practice. But doesn't mention just how that's possible without aggravating already prevalent poverty-illness trap due to OOPEs in an unregulated private health-sector [37,76,78].

The policy bears no evidence of strict, regulatory initiative to control malpractices within a rapidly growing private sector although this has very direct implications for households and individual health. There is also scarce data on private hospitals and their governance in India. The NHP-II also fails to mention a *clear standard* with respect to licensing, certification and accreditations in the healthcare sector. Regulation of their activities to ensure a more equitable distribution of their services, are issues the NHP-II fails to address.

In the Findings (section 4.5), the NHP-II prescribes inducting more health-professionals into public health. The above framework allows such professionals to integrate wider socio-economic perspectives with their medical knowledge of diseases, its causes and prevention. Further capacity building policy initiatives suggest training health personnel in underserved areas close to home, making rural-posts obligatory. However there is no explicit mention of the approach to do so.

It's important to analyze whether such prolonged durations of education is economically sustainable by the poor/rural students without providing them sufficient payments (stipends) [59,77,78]. The policy doesn't mention revising their wages. Though the initiative relates to the Key-Question of long-term outlook for achieving quality healthcare and shows potential to influence various household-factors, proper implementation alone assures sustainability.

As mentioned in Findings, though the NHP-II initiatives include recruiting of qualified health personnel trained in the Indian Systems of Medicine and Homeopathy (ISMH), to reinforce the Primary Healthcare Services, there is not sufficient literature evidence suggesting that the same has been achieved.

Although NHP-II suggests involving qualified health workers and accredited social workers in vertical interventions in Primary Health Care, data on any successful implementation of the initiative is scarce. The initiative to incorporate ISMH practitioners in underserved areas is commendable as it can potentially affect household-factors (increasing outreach and accessibility alongside lesser dependence on private healthcare-sector) but possibly endangers major shifting of the burden of community health services onto these practitioners while freeing the community of Modern-Medicine practitioners of this responsibility. This may raise issues of equitable division of labour amongst qualified health professionals and thus undermine long-term sustainability of such initiatives.

In Findings, the NHP-II initiative to mobilize all the rural health staff is commendable. This initiative aims partly at increasing outreach of health-programs as well as for spreading information and education. It has potential to impact a number of household factors. Yet, without adequate incentives, retention of staff is an issue – given the lure of career opportunities within urban and private

sectors. Furthermore, this initiative emphasizes primarily on inter-sectoral approaches: for educating rural health workers. An added initiative could be-increased public health awareness incorporated into the initial training syllabus of health professionals.

Incentives for career growth, recognition of their efficiencies may help in retaining professionals who serve the underserviced areas [77]. A rotational approach wherein the personnel are required to work in a certain rural area just for a definite measure of time can ensure the constant presence of qualified persons in the underserved regions and assure professionals of changes that would add value to their work. All this could improve both: working conditions for healthcare professionals and also customers' faith in the public healthcare. This influences health seeking behaviours and patient compliance to advice and counsel given at health-centres[33]. However, the NHP-II fails specifying any such approach.

Further, subchapter on Mental Health fails defining the term *'general-duty medical staff.'* It mentions including mental-health in their purview. It is likely that empowering them with prescription-writing can cause over-prescribing of medications, especially in light of prevalent pharmaceuticalization and commodification (footnote 30). Over-prescription hazards can be avoided if instead, they are empowered to sufficiently screen and provide timely counsel to susceptible individuals. Additionally, enlisting NGOs may help in addressing the causative factors of poor mental health especially at household-levels[34].

As shown in Background, the growing geriatric population needs more focused healthcare. The policy-initiative of instituting geriatric care is commendable. However, specialized geriatric-care in India is still in nascent stages, an aspect not highlighted in the NHP-II. With households playing central roles in Indian society, considering household-factors in such initiatives can address the dynamics of geriatric illnesses. For instance, the unhealthy household foodbasket structure might cause obesity and stunting in children but cardiovascular diseases in the elderly. Hence, addressing the causes of unhealthy foodbasket (poor awareness; poor income; low Caste etc.) in urban and rural regions helps prioritize issues with context-specificity. In addition, besides addressing issues on equity between the rich and the poor, it is important that equity between different age groups is also given due consideration[35].

Further from findings, subchapter on Health Statistics prescribes *to hasten and emphasize the completion of baseline statistics on diseases.* This presents the danger of making health programs focus on achieving numerical health-results without sufficient emphasis on quality, or processes.

It's possible that considering the potential impact on common, household-factors while making policy-initiatives can possibly provide a better approach to healthcare quality in India. One that includes both: health of the individual and health of the society. Improvements in health-indicators like life-expectancy relate to a decline in IMR, which further relate to poverty-levels and availability of proper nutrition, alongside multiple social, economical and cultural factors [20,21].

[33] When they know their healthcare providers are consistently accessible.
[34] As local NGOs are able to employ healthcare workers who are aware of prevalent sociocultural notions impacting household-factors.
[35] Meaning, an equitable healthcare addressing the needs of the stunted / malnourished children as well as for the geriatric populations increasingly suffering from chronic NCDs.

Considering household-factors while planning initiatives for health statistics would help incorporating the abovementioned inter-relations in the planning process.

CHAPTER 6: CONCLUSION

1. Reflection on the previous sections show that applying the conceptual framework helps understanding the NHP-II prescriptions which affect quality in healthcare and thus, individual health and well-being. Proper implementation of its prescriptions can potentially affect some household-factors directly and others indirectly. Since the NHP-II prescribes a gradual integration of all health programs, it will be more helpful to have a common denominator such as household-factors in policy considerations. This knowledge can also help policy-makers when vertical health-programs are increasingly changed to horizontal, sector-wide approaches.

2. Initiatives aimed at reducing the OOPE and increasing quality of healthcare for women, are likely to influence most forcefully the household-factors and individual health, when implemented properly. Considering the household-factors as a cluster could provide more insight into the dynamic reasons for poor health amongst Indians.

3. The framework further helped to read the document, in spite of its ill-defined structure and to find prescriptions that clearly allude to healthcare quality.

   Many of the initiatives that address a particular aspect of healthcare quality like capacity building or continuous training and education were found within various subchapters. However, applying the conceptual framework eased the process of sorting them out for this paper.

4. Previous sections show that, although only a few NHP-II prescriptions directly address household factors, many prescriptions are found to have the potential to indirectly impact a number of household factors (like: income, mother's status, and Gender related discrimination between children) at the same time. Prescriptions potentially influencing behaviour and attitudes of people can also potentially affect factors like foodbasket structures, health seeking behaviours and habits (sedentary lifestyles, smoking & alcohol consumption) which harm health. In spite of the close inter-relatedness of these household-factors to individual health and well-being, very few NHP-II prescriptions directly address them. However, proper implementation can positively influence most household-factors.

5. Findings show the objective of the NHP-II is to achieve acceptable standards of good health among the general population of the country. It envisages achieving this by strengthening the prevailing health-system with special focus on increasing equity. By approaching the prescriptions with the Key Questions from the framework, it was easier to understand the NHP-II prescriptions which adopted this approach. The framework also helps to approach the policy prescriptions in order to learn their possible influence on the household factors.

6. The conceptual framework aimed to explore *how* the prescriptions address the household factors influencing health and well-being. It does this

exploration with the combination of the Lalonde Model of Health Fields and the tool of key-questions derived from Deming's Points. By grouping the various household factors within the Health Fields, it became easier to elaborate their dynamic inter-relatedness while affecting health and to establish their importance for consideration when policy changes need to 'hit-home'. However, the findings showed frequent overlap between the household factors when viewed with the larger socioeconomic processes in the background. Yet the framework allows maintaining a flow without undermining the lessons from Findings.

7. Findings and Discussion also show that: even as the NHP-II urges the States to follow its initiatives, it mentions some initiatives with clarity while some others are mentioned in vague and in no certain terms. It may be concluded that the NHP-II prescriptions, though aimed to guide the States, can due to its vagueness also cause a fair measure of confusion regarding the optimal processes to be adopted for achieving the desired results. However, the Findings and Discussions emphasized the prescriptions which address quality-processes.

8. Though this paper does not look into the implementation of initiatives, the household-factors can serve as a potential guide to developing the steps for detailed implementation of the initiatives. The Findings and Discussions elaborate the importance of household-factors in relation to individual health quality. For example, various problems mentioned in the NHP-II Current Scenario Chapter have varying intensities region-wise. Applying the conceptual framework while having household-factors as a common denominator, allows assessing the potential impact of policy initiatives in the long-term.

9. Special focus on household-factors provides better understanding of why health interventions evidence different outcomes in various contexts, even when the larger socioeconomic influences (like urbanization, internal-migration and internal trade-liberalization), remain the same.

CHAPTER 7: RECOMMENDATIONS

Based on the review of previous sections, following recommendations are possible:

I. For Indian policy makers: The NHP can provide a valuable guideline for the States when they draw further planning and implementation policies while adapting the NHP Prescriptions. Planners and implementers at State levels can receive valuable guidelines in terms of approach and presentation through the NHP structure.
   a. Applying specific, easy-to-use structures that include clearly stated Aims & Objectives, mention of Priorities and Strategies that can be adapted – all can help one to easily read through the document.
   b. Further mention of the tools, models and approach used when formulating the paper, would definitely add to an easy, in-depth understanding of the policy-making process.

II. For Government conducted studies and for academic research: Areas for further research include the multi-dynamic inter-relations between: -

   a. The various household factors within various public health contexts. Having household factors as a baseline for studies of health problems in different regions allows approaching issues with context-specificity. Especially in studying why the same health program can have different health outcomes in the Indian States.
   b. The socioeconomic processes and household factors. Many policy prescriptions were found to potentially impact multiple household factors given the socioeconomic processes in the background.
   c. Further, interesting research by students in public health as well as social sciences can be to investigate the outcome of implementing those prescriptions. The influence of the policy prescriptions on household factors after they have been adapted to context-specifics and implemented.

III. For policy makers in the socio-economic fields in rapidly evolving economies: It is likely that keeping the common, household factors as a common denominator, they can assess the potential impact of their decisions (made at a broad, general level) on general household-levels:

   a. Both, while planning the policy as well as when considering inter-sectoral approaches. For example, while formulating policy prescriptions that can potentially influence the socioeconomic processes like internal-migration or increased prices of preferred foods. These factors eventually influence the household factors and thus health therein.
   b. Also in order to address the impact of policies on FTAs and FDIs which influence malnutrition as well as internal-migration and urbanization within rapidly evolving economies like India.

India apparently, has all potential to provide an equitable, dependable and accessible healthcare for Indians. Planning and implementing quality healthcare with considerations that influence individual health might enable her leaders to achieve health standards parallel to improvements seen in other sectors.

REFERENCES

1. RAO, S., (2001): "Nutritional Status of the Indian Population," *Journal of Bioscience, 26:4,* pp. 481-489.
2. ALKIRE, S., SANTOS, ME., (2010): "Multidimensional Poverty Index," Oxford Poverty and Human Development Initiative, Oxford University Press, 2010.
3. DESHINGKAR, P., AKTER, S., (2009): "Migration and Human Development in India," *Human Developments Report, Research Paper 2009/13, United Nations Development Programme,* pp. 90.
4. HAWKES, C., (2006): "Uneven Dietary Development: Linking the Policies and Processes of globalization with Nutrition Transition, Obesity and Diet-related Chronic Diseases," *Globalization and Health, 2(4),* [http://www.globalizationandhealth.com/content/2/1/4].
5. DURAN, A., (2012): "Country Cooperation Strategy India: 2012-2017," *The World Health Organization, Country Office India, WHO India Publishers,* pp. 80.
6. ARNOLD, F., PARASURAMAN, S., AROKIASWAMY, P., KOTHARI, M., (2009): "Nutrition in India: National Family Health Survey (NFHS-3) India 2005-6," *International Institute for Population Sciences, Ministry of Health and Family Welfare, Government of India, 2009.*
7. MURTHY, G., ROUT, S.K., NANDRAJ, S., (2009): "National Health Accounts India, 2005-05 (With Provisional Estimates From 2005-06 to 2008-09)," *Ministry of Health and Family Welfare, Government of India, the WHO India, Country Office, 2009.*
8. PLANNING COMMISSION, (2011): "Faster, Sustainable and More Inclusive Growth: An Approach to the Twelfth Five Year Plan (2012-2017)," Government of India, Planning Commission, pp. 67-95.
9. PAUL, V.K., *et.al* (2011): "Reproductive Health, and Child Health and Nutrition in India: Meeting the Challenge," *Lancet, 377,* pp. 332-49.
10. FARZANA, A., (2009): "Child Welfare Programs and child nutrition: Evidence from a mandated school meal program in India," *Journal of Development Economics, 92,* pp. 152-165
11. MINISTRY OF HEALTH AND FAMILY WELFARE, GOVERNMENT OF INDIA, (2010): "Annual report on Health," *MoHFW, GOI, 2010.* http://mohfw.nic.in/ (last accessed May, 2011).
12. THANKAPPAN, K.R., (2001): "Some Health Implications of Globalization in Kerala, India," *Bulletin of the World Health Organization, 79(9),* pp.889-893.
13. MINISTRY OF HEALTH AND FAMILY WELFARE, GOVERNMENT OF INDIA, (2005): "Report of the National Commission on Macroeconomics and Health," *MoHFW, GOI, (2005)* http://www.whoindia.org/LinkFiles/Commision_on_Macroeconomic_and_Health_01-Report_of_the_National_Commission.pdf (last accessed May, 2011).
14. MINISTRY OF HEALTH AND FAMILY WELFARE, GOVERNMENT OF INDIA, "National Rural Health Mission," http://mohfw.nic.in/NRHM.htm (accessed May, 2011).
15. ENGLE, L.P., (2002): "Infant Feeding Styles: Barriers and Opportunities for Good Nutrition in India," *Nutrition Reviews, 60: 05,* pp. 109-114.

16. JOE, W., MISHRA, U.S. AND NAVANEETHAM, K., (2010): "Socio-economic inequalities in child health: Recent evidence from India," Global *Public Health, 5: 5,* pp. 493-508.
17. SINHA, K., (2012): "Free Medicines for All from October," *The Times of India,* http://articles.timesofindia.indiatimes.com/2012-06-23/india/32381413_1_health-centres-essential-drugs-list-free-medicines, [Last Accessed: June 2012].
18. KRISHNA, A., (2004): "Escaping Poverty and Becoming Poor: Who Gains, Who Loses, and Why?" *World Development, 32(1),* pp. 121-136.
19. DE COSTA, A., DIWAN, V., (2007): "Where is the Public Health Sector? Public and Private Sector Healthcare Provision in Madhya Pradesh, India," *Health Policy, 84,* pp. 269-276.
20. CAPRA, F., (1983): "The Turning Point: Science, Society and the Rising Culture," *8th Impression, Great Britain: Fontana Paperbacks; 1990.*
21. MCKEOWN, T., (1979): "The Role of Medicine," *Oxford: Blackwell Publishers,* pp. 91-113.
22. WORLD HEALTH ORGANIZATION, SEARO, (2011): "Country Health System Profile: Health policy and strategy," *Regional Office for South-East Asia, WHO,* http://www.searo.who.int/en/Section313/Section1519_10853.htm (accesses June, 2011).
23. MINISTRY OF HEALTH AND FAMILY WELFARE, GOVERNMENT OF INDIA, (2002): "National Health Policy (India) 2002," National Rural Health Mission, *Ministry of Health and Family Welfare, 2002,* pp.41 http://www.mohfw.nic.in/NRHM/Documents/National_Health_policy_2002.pdf [last assessed and downloaded in May 2011].
24. UNITED NATIONS DEVELOPMENT PROGRAM, (2009): "Human development report," *UNDP*, *New York.*
25. KINRA, S., *et. al.,* (2010): "Socioeconomic Patterning of Non-communicable Disease Risk Factors in Rural India: A Cross-sectional Study," *Brit. Med. J.,* [BMJ 2010;341:c4974].
26. SHETTY, P.S., (2002): "Nutrition Transition in India," *Public Health Nutrition, 5(1A),* pp. 175-182.
27. CHATTERJEE, P., (2002): "India Sees Parallel Rise in Malnutrition and Obesity," *The Lancet; 360: 9349;* pp. 1948.
28. FRIEL, S., BELL, R., HOUWELING, T.A.J., TAYLOR, S., (2007): "A Social Determinants Approach to Health Equity," *Equitable Access: Research Challenges for Health in Developing Countries, Global Forum for Health Research, 4,* pp. 50-53.
29. RAMCHANDRAN, P., (2010): "Nutrition and Child Survival in India," *Indian Journal of Paediatrics, 77,* pp. 301-305.
30. WHITEIS, D.G., (1998): "Third World Medicine in First World Cities: Capital Accumulation, Uneven Development, and Public Health," *Soc. Sci. Med., 47(6),* pp. 795-808.
31. BERMAN, P., KENDALL, C., BATTACHARYYA, K., (1994): "The Household Production of Health: Integrating Social Science Perspectives on Micro-level Health Determinants," *Soc. Sci. Med., 38(2),* pp. 201-15.
32. ARAH, A.O., WESTERT, G.P., DELNOIJ, D.A., KLAZINGA, N.S., HURST, J., (2006): "A Conceptual Framework for the OECD Health Care Quality Indicators Project" *International Journal of Quality in Health Care, (18)1,* pp. 5-13.
33. DEMING, W. E., (1986): "Out of the Crisis," MIT *Press,* pp. 23-24.

34. ATKIN, D., (2009): "Trade, Tastes and Nutrition in India," Job *Market Paper, Princeton University Press.* Princeton University.
35. HEYWOOD, V.H., (2011): "Ethnopharmacology, Food Production, Nutrition and Biodiversity Conservation: Towards a Sustainable Future for Indigenous Peoples," *J. Ethnopharmacol., doi:10.1016/j.jep.2011.05.027*
36. PANDE, R., (2000): "Family Composition Effects on Gender Differentials in Nutrition and Immunization in Rural India," *John Hopkins Population Centre,* pp. 29.
37. PATNAIK, U., (2007): "The republic of hunger and other essays," *Three Essays Collective, ISBN: 81-88789-33-XX, New Delhi*, pp. 232.
38. PINGALI, P., KHWAJA, Y., (2004): "Globalization of Indian Diets and the Transformation of Food Supply Systems," *The Food and Agriculture Organization of the United Nations; Agricultural and Development Economics Division;* ESA Working Paper no. 04-05.
39. GOVERNMENT OF INDIA, NATIONAL SAMPLE SURVEY ORGANIZATION, (2007): "Household consumption of various goods and services in India 2004-05. Vol I: major states and all India," http://mospi.nic.in/rept%20_%20pubn/ftest.asp?rept_id=404&type=NSSO (accessed May, 2011).
40. RAO, S., (2001): "Nutritional Status of the Indian Population," *Journal of Bioscience, 26:4,* pp. 481-489.
41. SUBRAMANIAN, S.V., SMITH, G.D., (2006): "Patterns, Distribution and Determinants of Under- and Overnutrition: A Population-based study of Women in India," *The American Journal of Clinical Nutrition, American Society for Nutrition, 84,* pp. 633-40.
42. SUBRAMANIAN, S.V., PERKINS, J.M., KHAN, K.T., (2009): "Do Burdens of Underweight and Overweight Coexist Among Lower Socioeconomic Groups in India?" *The Am J Clin Nutr, American Public Health Association,* 90, *pp. 369-76.*
43. POPKIN, M. B., HORTON, S., KIM, S., MAHAL, A., SHUIGAO, J., (2001): "Trends in Diet, nutritional Status, and Diet-related Non-communicable Diseases in China and India: The Economic Costs of the Nutrition Transition," *Lead Review article, Nutrition Reviews, 59: 12,* pp. 379 – 390.
44. BHAT, R (1996): "Regulating the private health care sector: The case of the Indian consumer protection act," *Health Policy and Planning, 11(3)*, pp. 265-279.
45. GWATKIN, D.R., (2007): "Recent Trends in Research in Health Equity," *Equitable Access: Research Challenges for Health in Developing Countries, Global Forum for Health Research, 4,* pp. 24-26.
46. GAFFAR, A., REDDY, KS., SINGHI, M., (2004): "Burden of non-communicable diseases in South Asia," *British Medical Journal, 328*, pp. 807-10.
47. ALWAN,A., (2011): " Global Status Report on Noncommunicable Diseases 2010," *The World Health Organization, Reprinted 2011,* pp.176.
48. WORLD HEALTH ORGANIZATION, (2002): "Noncommunicable Diseases in South-East Asia Region: A Profile," *The WHO, New Delhi, India.*
49. KAMAT, V.R., NICHTER, M., (1998): "Pharmacies, Self-medication and Pharmaceutical Marketing in Bombay, India," *Soc. Sci. Med., 47(6),* pp. 779-794.
50. NICHTER, M (1991): "Anthropology and International Health: Asian case studies": *Gordon and Breach publishers.*
51. SEN, A., (1999): "Economics and Health," *Lancet, 354,* pp. SIV20.

52. SHETTY, P., (2010): "Medical Tourism Booms in India, but at What Cost?" *Lancet,* 376:9742, pp. 671-672.
53. PAL, S., (1999):"An Analysis of Childhood Malnutrition in Rural India," *World Development, 27(7),* pp. 1151-71.
54. PATEL, V., CHATTERJI, S., EBRAHIM, S., GOPALKRISHNA, G., REDDY, K., (2011): "Chronic diseases and injuries in India," *Lancet, 377,* pp. 413-428.
55. DEATON, A., DREZE, (2008): "Nutrition in India: Facts and Interpretations," RPDS *Working Papers, Princeton University.*
56. GILL, A., SINGH, L., (2006): "Farmers' suicides and response of public policy: evidence, diagnosis and alternatives from Punjab," *Economical Political Weekly, 26,* pp. 27662-68.
57. WORLD HEALTH ORGANIZATION, (2008): "World Health Statistics," http://www.who.int/whosis/whostat/EN_WHS08_Full.pdf (accessed May, 2011).
58. RAMCHANDRAN, P., (2010): "Nutrition and Child Survival in India," *Indian Journal of Paediatrics, 77,* pp. 301-305.
59. NEOGY, SUNITI (2010): "Gender Inequality, mother's Health, and Unequal distribution of food: experience from a CARE project in India," Gender *and Development, 18:3,* pp. 479-489.
60. RADHAKRISHNA, R., (2006): "Food Consumption and Nutritional Status in India," *Indira Gandhi Institute of Development Research, Mumbai; November 2006.*
61. JHA, P., *et. al.,* (2011): "Trends in Selective Abortion of Girls in India: Analysis of Nationally Representative Birth Histories from 1990 to 2005 and Census Data from 1991 to 2011," *The Lancet, 377(9781),* pp. 1921-1928.
62. Ebrahim S, Kinra S, Bowen L, Andersen E, Ben-Shlomo Y, et al. (2010): The Effect of Rural-to-Urban Migration on Obesity and Diabetes in India: A Cross-Sectional Study. PLoS Med 7(4): e1000268. doi:10.1371/journal.pmed.1000268
63. SUBRAMANIAN, S.V., NANDY, S., IRVING, M., GORDON, D., SMITH, G.D., (2005): "Role of Socioeconomic Markers and State Prohibition Policy in Predicting Alcohol Consumption Among Men and Women in India: A Multilevel Statistical Analysis," *Bulletin of the World Health Organization, (2005), 83(11),* pp. 829-834.
64. SUNDER, M., (1999): "Suicide in Farmers in India," *Brit. J of Psych., 175,* pp. 585-586.
65. DREZE, J., SEN, A., (1995): "India: Economic Development and Social Opportunity." *Clarendon,* Oxford.
66. TUCKER, K.L., BURANAPIN, S., (2001): "Nutrition and Aging in Developing Countries," *The Journal of Nutrition, American Society for Nutritional Sciences, Supplement paper,* pp.2417S-2423S.
67. FRANKISH, C.J., MILLIGAN, C.D., REID, C., (1998): "A Review of Relationships between Active Living and Determinants of Health," *Soc. Sci. Med. 44(3),* pp.287-301.
68. REDDY, V., CHARYULU, Y.M., (2008): "Indian Agriculture: Challenges of Globalization," *New Century Publications, New Delhi, India; Hardback; ISBN: 978-81-7708-171-8.*
69. HUYNEN, M.M.T.E., MARTENS, P., HILDERINK, H.B.M., (2007): "The Diverse Pathways from Globalization to Health," *Equitable Access: Research Challenges for Health in Developing Countries, Global Forum for Health Research, 4,* pp. 67-74.

70. MUKERJI, R., AGGARWAL, V,. (2008): "India's shifting trade policy: South Asia and beyond," *The Political Economy of the Asia Pacific,* pp. 215-258.
71. MUKHERJI, R., (2008): "The political economy of India's economic reforms," *Asian Economic Policy Review, 3(2),* pp. 315-331.
72. India, States and Union Territories; http://www.globalsecurity.org/jhtml/jframe.html#http://www.globalsecurity.org/military/world/india/images/india-states-map1.gif||| [Last accessed May 2012].
73. GOVERNMENT OF INDIA (2012): http://www.india.gov.in/knowindia/profile.php?id=2 [Last accessed May 2012].
74. SUBRAMANIAN, S.V., CORSI, D.J., (2011): "Can India Achieve a Balance of Sexes at Birth?" *Lancet, 377,* pp. 1893-94.
75. SIDDIQI, S., *et.al.* (2009): "Framework for Assessing the Governance of Health Systems in Developing Countries: Gateway to Good Governance," *Health Policy, 90,* pp. 13-25.
76. BHAT, R (1996): "Regulating the private health care sector: The case of the Indian consumer protection act," *Health Policy and Planning, 11(3)*, pp. 265-279. .. 44
77. WORLD HEALTH ORGANIZATION, (2010): "Increasing Access to Health Workers in Remote and Rural Areas Through Improved Retention," *Global Policy Recommendations, The WHO, Geneva 2010.*
78. KANTOR, P., NAPONEN, H., (2004): "Crises, Setbacks and Chronic Problems – The Determinants of Economic Stress Events among Poor Households in India," *Journal of International Development, (16)4,* pp. 529-545.
79. MATLIN, S.A., (2007): "Research Contributions to Improving Equitable Access to Health in Developing Countries," *Equitable Access: Research Challenges for Health in Developing Countries, Global Forum for Health Research, 4,* pp. 10-17.
80. BHAT, R., HUNTINGTON, D., MAHESWARI, S., (2007): "Public–Private Partnerships: Managing contracting arrangements to strengthen the Reproductive and Child Health Programme in India: Lessons and implications from three case studies," *WHO Publications, Geneva, 2007.*
81. ARAH, A.O., WESTERT, G.P., DELNOIJ, D.A., KLAZINGA, N.S., (2005): "Health System Outcomes and Determinants Amenable to Public Health in Industrialized Countries: A Pooled, Cross-sectional Time Series Analysis," *BMC Public Health, 5(81),* *http://www.biomedcentral.com/content/pdf/1471-2458-5-81.pdf* [Last Accessed: May 2011].

APPENDIX I

Nutritional Transitions and Malnutrition

Nutrition transition denotes the rapid shifts in the diet and activities of Indians causing a surge in obesity and non-communicable diseases even among populations that previously displayed a tendency to under-nutrition [19,46,67,68]. The last decade shows a clear increase in NCDs amongst the poor and disadvantaged groups [15] and NCDs account for forty-two percent of deaths amongst adults.

Malnutrition is a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients. It can further be divided into four forms: undernutrition, over-nutrition, imbalance and specific deficiency. Undernutrition in children is generally ascertained by measuring their height, weight and skin-fold thickness. Over-nutrition is caused by excessive consumption of saturated trans-fats and highly refined sugars that lead to obesity and other metabolic disorders. The non-communicable diseases are mostly a product of this dietary trend.

Stunting means short height for age and sex of the child. It is a sign of prolonged undernutrition.

Long-term Effects of Malnutrition

Undernutrition in early life has damaging effects on attainments of adult height; education; income and the birth-weights of the ensuing generations. Further, evidence suggests a positive correlation between determinants of early life (adequate prenatal and infant food supplementation) and health outcomes in adult life. Childhood malnutrition increases the preponderance of chronic diseases like diabetes, hypertension and other chronic diseases [2,24,67,69].

APPENDIX II

Search terms

SEARCH TERMS	DATABASES	SEARCH METHODOLOGY
'nutrition AND India'	SCOPUS	From 22,287 articles to 52 articles after selecting publications since 2000, India and from journals: The Lancet, Journal of Ethnopharmacology, Social Science & Medicine, World Development and Nutrition. Articles on maternal and child health and relating to household characteristics and globalization were selected as references for the paper.
	BIOMED CENTRAL	54 articles selecting publications since 2005.
globalization AND India AND gender	SCOPUS	12 articles found after limiting to topics from India; 2005 onwards; FROM World Development, International Encyclopaedia of the Social &, Social Science & Medicine, International Encyclopaedia of Public Health, Ecological Economics, International Business Review, Human Resource Management Review.
	BIOMED CENTRAL	103 articles found after limiting to topics from India; 2005 onwards.
Nutrition transition AND India	SCOPUS	14 articles found after limiting topic to India, 2005 onwards from The Lancet, Social Science & Medicine, World Development.

SEARCH TERMS	DATABASES	SEARCH METHODOLOGY
India AND household income AND social determinants of health	SCOPUS	47 articles found after limiting to topics from India; 2005 onwards; Social Science & Medicine, World Development, The Lancet, Handbook of Agricultural Economics, Journal of Asian Economics, International Encyclopaedia of Public Health, Preventive Medicine, Women's Health Issues.
	BIOMED CENTRAL	1 article found
health policy AND India	SCOPUS	74 articles found after limiting to topics from India; 2005 onwards; The Lancet, Social Science & Medicine, World Development.
	BIOMED CENTRAL	131 articles found after limiting to topics from India
health policy AND framework	SCOPUS	19 articles found after limiting to topics from India; 2009 onwards from The Lancet, Health Policy, World Development.
	BIOMED CENTRAL	39 articles on refining search to articles in English, from 2009 onwards.

APPENDIX III

NHP-II Prescriptions which relate to processes for achieving better quality in healthcare

Key Processes for achieving Quality Health	NHP-II Prescriptions that potentially relate to the Key Processes
Establish constancy of purpose: to continuously improve efficiency and get good results in health indicators...1	1. Increase health sector expenditure to six percent of GDP, with two percent contributed as public health investment by year 2010. 2. Increase commitment from state governments (to seven percent in 1st phase by 2005 and to eight percent in 2nd phase by 2010). Increase central government spending from 15% to 25% by 2010. 3. Decrease OOP expenditure by increasing social insurance coverage. 4. Creation of a beneficiary interest in the public health system – to ensure a more effective supervision of public health personnel through community monitoring (than through regular administrative lines). 5. Encouraging participation of medical doctors as well as non-medical graduates in 'public health'. 6. Increasing ratio of degree-holding nurses vis-a-vis diploma-holding nurses. Plus increase ratio of nursing personnel vis-á-vis doctors/beds. 7. Priority to preventive health education at school-levels.

Key Processes for achieving Quality Health	NHP-II Prescriptions that potentially relate to the Key Processes
Have a long-term outlook for achieving favourable health outcomes...4	1. Increase sectoral outlay in the primary health sector (cost effective way of reducing intersectoral/rural-urban divide inequities). 2. Decrease prices of essential drugs. 3. Decentralization and financial incentives over and above the resources normatively allocated for disease control programs provided by the Central Government. 4. Priority to preventive health education at school-levels. 5. Complete baseline estimates in health statistics for communicable and NCDs.
Key Processes for achieving Quality Health	NHP-II Prescriptions that potentially relate to the Key Processes
Building mechanisms for improvement need to be flexible for constant improvement in quality of services, thus providing better health outcomes while decreasing costs = Adaptable and context specific ...5	1. Minimal statutory norms for doctors and nurses in medical institutions to be urgently introduced under provisions of the Indian Medical Council Act and Indian Nursing Council Act respectively. 2. Revise existing medical and paramedical curriculum, alongside periodic skill-updating of working health professionals through CMEs. 3. Involve undergraduate trainings in geriatric care as well as medical research. 4. Involve community leaders (religious leaders) for spreading knowledge to initiate behavioural changes. 5. Prioritize preventive health education at school-levels. 6. Complete baseline estimates in health statistics for communicable and non-communicable diseases. 7. Establish National Health Accounts (estimates of health costs on a continual basis).

Key Processes for achieving Quality Health	NHP-II Prescriptions that potentially relate to the Key Processes
Establish constancy of purpose: to continuously improve efficiency and get good results in health indicators...1	4. Creation of a beneficiary interest in the public health system – to ensure a more effective supervision of public health personnel through community monitoring (than through regular administrative lines). 5. Encouraging participation of medical doctors as well as non-medical graduates in 'public health'. 6. Increasing ratio of degree-holding nurses vis-a-vis diploma-holding nurses. Plus increase ratio of nursing personnel vis-á-vis doctors/beds. 7. Priority to preventive health education at school-levels.
Establish high accountability within the leadership in health system... 2	1. Encourage involvement of State Government officials, social activists, private health professionals, MLAs/MPs on management boards of autonomous bodies for well-informed decision making. 2. Encourage handing over public health service outlets to NGOs & other institutions of civil society. 3. Urging the State Governments to consider decentralization of program implementation to local self-government institutions by 2005. 4. Implement disease control programs through NGOs and other civil service societies.
Have a long-term outlook for achieving favourable health outcomes...4	1. Priority to preventive health education at school-levels.
Encourage capacity building in health care = supplying good leaders, on-job training and valuing and acknowledging work well performed. ... 6,7,10,13	1. Frequent in-service training of medical officers as well as paramedics. 2. Decentralization and financial incentives over and above the resources normatively allocated for disease control programs provided by the Central Government. 3. Encourage involvement of State Government officials, social activists, private health professionals, MLAs/MPs on management boards of autonomous bodies for well-informed decision making. 4. Involvement of community leaders (religious leaders) in spreading knowledge to initiate 50 behavioural changes. 5. Revision of the existing medical and paramedical curriculum alongside periodic skill-updating of working health professionals through CMEs.

Key Processes for achieving Quality Health	NHP-II Prescriptions that potentially relate to the Key Processes
Establish an environment for positive growth for all stake-holders, and enable people to work freely...8	1. Encourage treatments regimens (private/public sector) based on a limited number of essential drugs of a generic nature. 2. Encourage use of only essential drugs in the private sector with imposition of fiscal disincentives. 3. Prohibit production and sale of irrational combinations of drugs through drug standard statutes. 4. Envisage a contemporary code of ethics to be rigorously implemented by the Medical Council of India.

Key Processes for achieving Quality Health	NHP-II Prescriptions that potentially relate to the Key Processes
Break down barriers between different departments in the health sector = enable communication without build-ups, competition and distrust...9	1. Urging the State Governments to consider decentralization of program implementation to local self-government institutions by 2005. 2. State Governments: extend the pool of medical practitioners to include persons qualified in fields of Indian Systems of Medicine and Homoeopathy. Let these practitioners provide simple services/procedures outside their disciplines (especially in under-served areas). 3. Maximize dissemination of information through inter-personal communication of information & folk & other traditional media.
Encourage a healthy process for achieving better health outcomes in any healthcare programme rather than aiming for zero defects in the outcomes...11a	1. Mobilization of all rural health staff for public health activities at the decentralized levels. 2. Involve undergraduate trainings in geriatric care as well as medical research.
Value/acknowledge/encourage work well done rather than stressing on zero defects... 11b	1. Quality of public health services, as reflected in the attainment of improved public health indices. 2. Standards of health are more a function of the accurate targeting of expenditure on the decentralized primary sector than a function of aggregate health expenditure. 3. Include general duty medical staff to provide mental health services (diagnosis/prescriptions for common disorders) on a decentralized level. 4. Implement disease control programs through NGOs and other civil service societies.
Ensure top-down-bottom-up approach: Involve everyone in the healthcare system/programme to contribute to better outcomes by making them aware of how important their contributions are...14	1. Mobilization of all rural health staff for public health activities at the decentralized levels. 2. State Governments: extend the pool of medical practitioners to include persons qualified in fields of Indian Systems of Medicine and Homoeopathy. Let these practitioners provide simple services/procedures outside their disciplines (especially in under-served areas). 3. Encouraging participation of medical doctors as well as non-medical graduates in 'public health'. 4. Encourage private entrepreneurship in fields of medical research. 5. Implement disease control programs through NGOs and other civil service societies.

APPENDIX IV

The Caste System in India

The Caste System and Electoral Volatility in India

The Centre for Study of Developing Societies (CSDS; www.csds.in) classifies the prevalent jatis into four social blocks; the Muslims in another block and all smaller religions in another group. For instance, the upper caste jatis (Brahmins, Banias, Rajputs) are collectively referred to as 'upper caste' category. The shudra jatis (Yadavs, Jats, Kurmis) form the 'Other backward Class (OBC)' Category. The chamars who belonged to the ex-untouchable categories form the Schedule Castes (SC) and aboriginals constitute the Schedule Tribe (ST). In India, the OBCs, SC/STs all have the special 'reservation statuses providing their members quotas in universities, schools and government employment. Outside of the Hindu Caste system, the index for caste-community also includes Muslims and Other Religions (Sikhs in Punjab; Christians in Kerala). In other states however, this is just a residual category of all non-Hindu and non-Muslim religions [60].

The caste-religion divide also influences quality of health indirectly. States in which the caste-religion divide is highly politicized suffer from lesser electoral and political volatility. Multiparty states (Uttar Pradesh) which reflect these political cleavages show more electoral stability when compared with states which have caste-religion based cleavages which are less strongly politicized (Bihar). One can argue that this has a bearing on the attitudes of stewardship adapted by the states and in turn on the various health sector related programs that cater to health policy prescriptions. Higher electoral volatility in states of Uttarakhand, Chhattisgargh, Rajasthan and Bihar have led to 6, 7, 5, 4 and 4 secretaries of health for managing the National Rural Health Mission therein. Changing political regimes result in new administrators who disrupt or discard health initiatives adopted by the previous political parties. For health programmes, this disrupts continuity and dispirits the downstream implementers, eventually leading to poor health outcomes in these states [16,43].

There is a positive correlation between good governance and least amount of electoral and political volatility (e.g. Kerala) and the health outcome of the people therein [12,60].

APPENDIX V

The shocks faced by the Indian Economy

Trade-liberalization policies initiated in the 1990s lead the country to an average economic growth of 6-7% per year. The economic shift from the Import Substitution Industrialization (ISI) policies to a more liberal model promoting export competitiveness was hastened because of a number of shocks.

Post independence, changes in the Indian economy are most dramatic in the past two decades. Up until the latter part of 1980s, the economic situation was stagnant based on control by the government and a market that was centrally operated. The wave of decentralization in the latter 1980s to early 1990s initiated the process of increasing the country's GDP and standard of living.

The economic shift from the Import Substitution Industrialization (ISI) policies to a more liberal model promoting export competitiveness was hastened because of a number of shocks. In 1991, alongside the fall of the Soviet Union, the Indian economy faced a balance of payments crisis. The country thus resorted to remedy the situation by internal (domestic) trade-liberalization and adopting the 'Look East Policy' (LEP) which promoted Free Trade Agreements (FTAs) between India and neighbouring countries like Sri Lanka, Thailand, Singapore and Malaysia. Other shocks that furthered internal trade-liberalization and free-trade were the Asian Financial Crisis in 1997; the bilateral trade policies with the Unites States post the attacks of September 11, 2001 and the passage of the Trade Promotion Act (by the U.S. House of Representatives in December 2001). Increasing bilateral trade agreements with the U.S and the OECD countries have forced Indian industry to lower agriculture and manufacturing tariffs.

The ISI was characterized by import restrictions, exchange rates overvalued to ease capital goods importation, policies promoting heavy industries alongside selective financial incentives to the private sector, and a large state sector. Absence of real competitiveness resulted in strong coalitions between the business and labour interests, not overcome by the state during the Cold War years. The organized business sector was reluctant to risk exposure to foreign markets and chose the freedom to work within the protected home-market. Whilst the organized labour which formed a mere ten percent was covered by labour laws and job security, the unorganized majority were largely ignored. The government in 1970s admitted to poor levels of productivity, and a paucity of development finance and a growing need for promoting exports [36,37,70,71].

Though trade-liberalization and Free Trade Agreements (FTAs) have led to growth in trade, transport, commerce and communication (tertiary sector grew at a rate of 8.2%)[36], investments in the primary sector (education, employment, sanitation

[36] The service sector in India today, contributes up to forty-six percent of the country's GDP when before reforms, this was forty percent. Apart from the IT-sector, growth of the pharmaceutical industry makes India the only capitalist developing country capably satisfying its pharmaceutical demands [70,71].

in rural areas and agriculture) have been acutely ignored [8,36-7]. This has indirectly affected health and nutrition.[37]

Presently, according to the National Commission for Enterprises in the Unorganized Sector, over seventy-seven percent of India's population classify as poor and vulnerable. Its' estimates suggest that around seventy-seven percent of the rural population live on less than US $ 1 (INR 30) while the NSSO (66th survey) estimates this proportion to be fifty percent [39].

Though trade-liberalization and Free Trade Agreements (FTAs) have led to growth in trade, transport, commerce and communication (tertiary sector grew at a rate of 8.2%)[38], investments in the primary sector (education, employment, sanitation in rural areas and agriculture) have been acutely ignored [8,36-7]. This has indirectly affected health and nutrition.[39]

[37] An example of the positive correlation with increased macroeconomic focus on the tertiary sector, neglecting the primary sector is the estimation that over eighty percent of households use solid fuels for cooking purposes. 99.7% and 29.6% of the poorest and richest quintiles use solid fuels correspondingly. Ninety percent of the rural and a quarter of the urban households are affected by indoor air pollution. Health conditions like chronic obstructive pulmonary disease (COPD) and asthma are evidently increasing and slated to become major causes for deaths due to non-communicable diseases by 2030 [54].

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APPENDIX VI

Deming's points as a tool.
Deming's 14 points and the understanding based on them helped formulate the Key-questions which are in the conceptual framework and address the processes for achieving improved quality in public health.

DEMING'S FOURTEEN POINTS		UNDERSTANDING BASED ON THE POINTS
1	Create constancy of purpose toward improvement of product and service, with the aim to become competitive & stay in business, and to provide jobs.	Is the organization constantly seeking improvement in activities – to increase efficiency and productivity?
2	Western management must awaken to the challenge, learn their responsibilities and take on leadership for change.	Are organization managers alert to the challenge of being responsible for helping their workers?
3	Cease dependence on inspection to achieve quality. Eliminate need for inspection on a mass basis by building quality into the product in the first place.	Is the organization/project expecting that monitoring final outcomes and results will achieve quality? *OR* does it instill quality into the *inputs* and *processes*?
4	End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move towards a single supplier for any one item, on a long-term relationship of loyalty and trust.	When the organization/project procures something, is the decision primarily made on immediate & obvious costs, or on the long-term costs & consistency provided by long term relationships with suppliers?
5	Improve constantly & forever *the system of production and service, to improve quality & productivity* & thus constantly decrease cost.	Is the organization/project aiming only to fulfil certain standards/requirements/results? *OR DOES* it aim to constant improvement of the services provided to improve quality and productivity, & thus constantly decrease cost?
6	Institute training on the job.	Is training on the job a priority? Who teaches & are they given time for it?
7	Institute leadership (supervision should be aimed at helping people, gadgets and machines perform better).	Are leaders aiming first and foremost, to show their power and dominate their workers through setting goals (usually linked to bonuses & punishments), *or instead* do they prioritize helping people and machines perform better?
8	Drive out fear so that everyone may work effectively.	Do workers fear voicing their concerns, their ideas for improvements? This fear could result from fear of danger of punishment from seniors/leaders unwilling to hear criticisms; or from fear of helping others do better who might then earn more or be promoted higher.

DEMING'S FOURTEEN POINTS		UNDERSTANDINGS BASED ON THE POINTS
9	Break down barriers between departments.	Is there competition and distrust between different parts of the organization?
10	Eliminate slogans, exhortations and targets for the work force asking for zero defects & new levels of productivity.	Does the organization/project put pressure on the staff to perform better using slogans & goals for more results & zero errors?
11a	Eliminate work standards (quotas) on the factory floor. Substitute leadership.	Is the organization/project results oriented, setting goals according to certain numerical requirements? E.g. Number of people trained, medicines delivered vaccines given.
11b	Eliminate management by objective (numbers/numerical goals). Substitute workmanship.	Do managers only take into account the quantity of products/numbers of results, *or instead do they value most what has been done well?*
12a	Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of superiors must be changed from sheer numbers to quality.	Are workers encouraged to work & achieve the best quality and products, or are they simply pushed to produce certain quantities?
12b	Remove barriers that rob people in management & in engineering of their right to pride of workmanship (i.e. Abolish annual merit rating and management by objective).	Are managers awarded for achieving certain objectives, according to annual performance reviews? *Is that wise??*
13	Institute a vigorous program of education & self-improvement.	Is education and self-improvement, self-motivation encouraged?
14	Put everyone in the company to work to accomplish the transformation.	Is everyone involved in improvements, or is this something only certain people are involved in (e.g. Leaders, quality managers etc.?)