INDEPTH Training and Research Centres of Excellence (INTREC)

India Country Report

October 2012

Diana Kekan [1, 2]

Sanjay Juvekar [1, 2]

Beidi Wu [3]

Siwi Padmawati [4]

John Kinsman [3]

[1]Vadu Rural Health Program- KEM Hospital Research Centre, Pune, India
[2]INDEPTH Network, Accra, Ghana
[3]Umeå Centre for Global Health Research, Epidemiology and Global Health Unit, Department of Public Health and Clinical Medicine, Umeå University, Sweden
[4]Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta, Indonesia

Correspondence to: dkekan@yahoo.co.in and john.kinsman@epiph.umu.se

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Glossary

Anganwadi- Centers that provides basic health services in Villages

ASHA- Accredited Social Health Activist (Village health Nurse)

CBM- Community Based Monitoring

Cor DECT wireless- Wireless technology

CVD- Cardiovascular disease

GDP- Gross Domestic Product

ICDS- Integrated Child Development Scheme

IMR- Infant Mortality Rate

INDEPTH- International Network for the Demographic Evaluation of Populations and their Health

INTREC- INDEPTH Training and Research Centres of Excellence

Jan Sunwai- Public hearing (platform wherein the community and health professionals discuss issues pertaining to health services)

Kasturba Gandhi Balika Vidyalaya- Scheme started by the Government of India that provides educational facilities to girls belonging to the backward castes

KEMHRC- King Edward Memorial Hospital Research Centre

LokSabha (House of people)- Members selected through elections by the Indian citizens

Matrusuraksha Vahini Scheme- Scheme that facilitates referral services in rural areas

Municipal Corporation- Local governing bodies at village level

NGO- Non Governmental Organizations

NHP- National Health Policy

NRHM- National Rural Health Mission

PAHO- Pan American Health Organization

Panchayat- Local self-government in Villages

PHC- Primary Health Center (functional unit for public health services)

PHFI- Public Health Foundation of India

Rashtriya Swasthya Bima Yogana- Government-run Health Insurance Scheme for the poor

Rajeev Gandhi Jeevandayi Yogana-Scheme under which the family with an annual income of Rs 1 lakh can get free medical services

RCH- Reproductive and child health program (programs for maternal and child health)

Sarva Shiksha Abhiyan- Education-for-all scheme

SDH- Social Determinants of Health

Simputer- A portable device used in rural areas, as an alternative to computer

Sub centres- centre that caters to the need of 5000 population in rural areas

UHC- Universal Health Coverage

Videsh Sanchar Nigam Limited- Internet and telecommunication provider in India

WHO- World Health Organization

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Acknowledgements

1. Executive Summary

Introduction

The WHO's Commission on Social Determinants of Health argued in 2008 that the dramatic differences in health status that exist between and within countries are intimately linked with degrees of social disadvantage. These differences are unjust and avoidable, and it is the responsibility of governments, researchers, and civil society to work to reduce them. Part of this work requires the production of setting-specific, timely, and relevant evidence on the relationship between social determinants of health and health outcomes, and yet this information is limited, especially in low- and middle-income countries (LMICs). Thus there is a strong need for the development capacity-building activities to enable such research.

INTREC has been established with this concern in mind. Its dual aims include (i) providing SDH-related training for INDEPTH researchers (including from Vadu Health and Demographic Surveillance System in Pune, Maharashtra, India, a member of INDEPTH network), thereby allowing the production of evidence on associations between SDH and health outcomes; and (ii) enabling the sharing of this information through facilitating links between researchers and decision makers, and by ensuring that research findings are presented to decision makers in an actionable, policy-relevant manner.

This India country report provides the baseline situation analysis for the Indian component of INTREC, with a particular focus on Maharashtra State. Specifically, the report addresses three primary areas of concern:
1. SDH-related training in Maharashtra, as a baseline for INTREC to build on
2. The core SDH issues of concern in the country and in the State
3. Ongoing SDH-related work in Maharashtra and in India as a whole, both in terms of government policies and in terms of the efforts made non-governmental organizations

The report ends with a series of recommendations for action, directed at governments (both national and State) and NGOs, as well as at INTREC itself.

Methods

The search for the Indian contextual and curricular reviews was conducted through Google search engine. The courses related to SDH were identified by visiting the websites of the public health schools in Maharashtra. The curricula were analyzed to retrieve data on courses related to SDH.

The articles for the literature review were identified through Google Scholar search engine. The articles selected were confined to articles beyond the year 2006. The information on non-governmental organizations (NGOs) and policies were retrieved through their respective websites.

Approval of the Ethics Committee of KEM Hospital Research Centre was obtained for the study, and for conducting a series of stakeholder interviews in Maharashtra. A list of respondents was prepared based on their expertise in different sectors. Of these, ten respondents were short-listed, and contacted through email or phone. Those who responded positively were then sent the information sheet and interview guide via email. Appointments were confirmed according to the convenience of the respondents. Consent to record the interviews was obtained from all respondents, and the respondents signed an informed consent form prior to the interviews. All the interviews were conducted in English language. The recorded Interviews were then transcribed, and analyzed using the Open Code software.

Results

Curricular review

Most aspects of SDH are covered in courses offered by the public health schools in Maharashtra state, but they are provided only as a part of other courses. An exclusive course on SDH is not available in Maharashtra state. There are also no online courses offered by the public health schools on SDH in Maharashtra. Related courses such as social epidemiology are offered in a few public health schools in Maharashtra, but topics covering the persistence of health inequities and how to deal with them are not available. It is necessary to train future researchers on tackling issues on health inequity, and these topics may best be dealt with by introducing a SDH-specific course into the curricula of public health schools in Maharashtra State.

Literature review

Poverty was previously considered to be the most important SDH in India and Maharashtra. However, while still a significant challenge, recent statistics show that poverty is on the decline, both in India and Maharashtra. Illiteracy and caste contribute to ill health among many under-privileged populations both in India and Maharashtra. Health inequities in Maharashtra and India are caused by an amalgamation of multiple factors, and these are broadly similar for both India and Maharashtra State. A series of policies has been brought in over the last decade or so to address various aspects of SDH, but implementation has often been weak, and health inequities have consequently persisted throughout the country.

Stakeholder interviews

Poverty was seen by most of the respondents as the most important social determinant of health, both in India and Maharashtra. The term 'social determinant of health' has gained importance since 2005 in India. The collaboration between researchers and policy makers is limited in India, as there is no formal platform to discuss the issues. The facilitating factors that influence policies are the initiatives taken by NGOs and international agencies. If specific interests are threatened, there is strong opposition to SDH-related policies. A comprehensive approach towards social determinants of health, including the redistribution of resources and the integration of activities conducted by different sectors is highly recommended. The dearth of courses on SDH in Maharashtra State demonstrates the importance of adequate training on SDH in the State.

Recommendations

Social determinants of health such as access to health care, literacy, and environmental conditions, are dependent on the financial status or income of households. Hence, enhanced, evidence-based efforts by the government are needed to improve the financial status of households. More importantly, health should not just be the priority or responsibility of the health department, but rather, it should be looked upon as a multi-sectoral concern. SDH-related policies that are already in place need to be properly implemented. Further, the cultural and household practices in Maharashtra that result in ill health can be somewhat alleviated by the means of health education. Health education must be increased to improve health-related behavior in Maharashtra.

The public health schools in Maharashtra do not offer training specifically on the social determinants of health. Hence INTREC can play an important role by developing and providing a comprehensive educational programme on SDH, which could include both classroom-based and online courses. For the effective implementation of the programme, INTREC should establish links with existing SDH training Institutions in India. It is also important to focus on enhancing collaboration between SDH researchers and policy makers.

2. Introduction

The WHO's Commission on Social Determinants of Health was concerned with the dramatic differences in health status that exist between and within countries (CSDH, 2008). It compared, for example, the lifetime risk of maternal death in Afghanistan (1 in 8), to the lifetime risk in Sweden (1 in 17,400) (WHO et al., 2007). It also highlighted the fact that maternal mortality is three to four times higher among the poor compared to the rich in Indonesia (Graham et al., 2004). The Commission argued that these disparities, and innumerable similar ones across the globe, are intimately linked with social disadvantage, and that they are both unjust and preventable.

Addressing health inequities is therefore a moral imperative, but is also essential for reasons of global self-interest: a more inequitable society is inherently a less stable one. But the Commission recognized the challenges that face steps to strengthen health equity, and, critically, that it requires going beyond the current prevailing focus on the immediate causes of disease. Rather, it is necessary to identify and act upon the 'causes of the causes': "*the fundamental global and national structures of social hierarchy and the socially determined conditions that these create, and in which people grow, live, work, and age*" (CSDH, 2008:42).

To this end, three broad Principles of Action on these social determinants of health (SDH) were identified in the Commission Report, that together could, it was argued, 'close the gap' of health inequities within a generation(CSDH, 2008:2). These Principles of Action were:

1. Improve the conditions of daily life – the circumstances in which people are born, grow, live, work, and age.
2. Tackle the inequitable distribution of power, money, and resources – the structural drivers of those conditions of daily life – globally, nationally, and locally.
3. Measure the problem, evaluate action, expand the knowledge base, develop a workforce that is trained in the social determinants of health, and raise public awareness about the social determinants of health.

A wide range of actors is required if these Principles are to be effectively implemented. The Commission identified the core actors as the multi-lateral agencies (especially WHO), national and local governments, civil society, the private sector, and research institutions.

This report is concerned with the third of the three Principles of Action – the production of a strong SDH evidence base – and also with the people who are going to produce and then use that evidence base: those working in research institutions, and those with decision-making

authority in governments. Current capacity to produce setting-specific, timely, and actionable evidence on the relationship between SDH and health outcomes is limited, and especially so in low- and middle-income countries (LMICs). Likewise, with limited awareness of SDH among decision makers, and a general global culture that under-utilizes evidence within the policy process, there is an urgent need for capacity-building activities to promote informed decision-making that aims at reducing health inequities. As the Report points out, "*Knowledge – of what the health situation is, globally, regionally, nationally, and locally; of what can be done about that situation; and of what works effectively to alter health inequity through the social determinants of health – is at the heart of the Commission and underpins all its recommendations*" (CSDH, 2008:45).

INTREC (INDEPTH Training and Research Centres of Excellence) was established with precisely this concern in mind. INTREC's two main aims are (i) providing SDH-related training for INDEPTH researchers in Africa and Asia, thereby allowing the production of evidence on associations between SDH and health outcomes; and (ii) enabling the sharing of this information through facilitating links between researchers and decision makers in these countries, and by ensuring that research findings are presented to decision makers in an actionable, policy-relevant manner.

The INTREC consortium consists of six institutions. The one around which most of the work revolves is INDEPTH – the International Network for the Demographic Evaluation of Populations and Their Health in Low- and Middle-Income Countries. With its secretariat in Accra, Ghana, INDEPTH is an expanding global network, currently with 44 Health and Demographic Surveillance Systems (HDSSs) from 20 countries in Africa, Asia and Oceania. Each HDSS conducts longitudinal health and demographic evaluation of rural and/or urban populations. INDEPTH aims to strengthen the capacity of HDSSs, and to mount multi-site research to guide health priorities and policies in LMICs, based on up-to-date evidence (Sankoh and Byass, 2012). The other five members of the INTREC consortium are all universities, which bring their own respective technical expertise to particular components of the work. These universities are Umeå University in Sweden; Gadjah Mada University in Indonesia; Heidelberg University in Germany; the University of Amsterdam in the Netherlands; and Harvard University in the USA.

The work of INTREC will build on the pre-existing INDEPTH network, and is primarily focused on seven countries. In Africa, these include Ghana, Tanzania, and South Africa; and in Asia, Indonesia, India, Vietnam, and Bangladesh are taking part. Starting in 2013, each continent will be served respectively by regional training centres in Ghana and Indonesia. These centres will act as focal points for research and training on SDH for the INTREC countries and, in due course, other low- and middle-income countries. See www.intrec.info for more details.

This report constitutes the very first step in the work of INTREC in India, by providing a situation analysis, conducted by an in-country social scientist and with the support of members of the consortium, that addresses three areas of concern:

1. Current SDH-related training in India, especially in Maharashtra, and gaps identified, as a baseline for INTREC to build on
2. The core SDH issues of concern in Maharashtra State
3. Ongoing SDH-related work in Maharashtra, India, both in terms of government policies and programmes, and in terms of efforts made by non-governmental organizations.

The report ends with a series of recommendations for action, directed at decision makers, programme implementers, as well as at INTREC itself. Based on the comprehensive, empirical background material included in the report, these recommendations will prove to be an invaluable guide for the future development of INTREC, as the programme works towards reducing health inequities in India, and also in other low- and middle-income countries.

3. Methods

The methods for conducting the reviews of the Indian context, the curricula, and the literature, as well as the stakeholder interviews are explained in this section.

a) The Indian context

Relevant databases pertaining to India were identified via the internet. Criteria for selection included the likely reliability of a given database (e.g. WHO was considered as highly reliable), and the degree to which the information given was up to date. Databases such as Wikipedia, and unofficial or private websites were not referenced in this report.

The internet search for data and material included keywords or acronyms, such as "India", "fact sheet", "country information", "World Bank", "WHO" (World Health Organization). More specific key words or acronyms were employed for different sub-sections, including "demography", "geography", "MDGs" (Millennium Development Goals), "NCDs" (non-communicable diseases), "HIV/AIDS", "tobacco", etc.

Cross-references were made where more than one database was available, to synthesize a comprehensive description of the situation. In some instances, WHO databases were the primary sources of information; in others, relevant journal articles were sought to give greater depth to an issue. The data were then presented along with a commentary on the statistical patterns and public health challenges that the country faces.

b) Curricular Review

One of the objectives of INTREC's India country report is to assess the current post-graduate courses available on SDH in Maharashtra State, as well as the gaps in training. To achieve this objective, a search was conducted with the aid of Google search engine. The information collected for the curricular review was purely based on this internet search.

Information on schools providing public health courses in Maharashtra State was collected using keywords such as "public health schools in Maharashtra", "public health colleges in Maharashtra", "public health schools in India", "public health colleges in India" and "Universities or Institutes providing public health courses in Maharashtra State". With a list of the public health schools in Maharashtra in hand, their respective websites were then visited to assess the curriculum, specifically with an eye to identifying the courses related to SDH offered by these schools. The selection of courses was based on the topics taught. If the topic was related to social determinants of health then it was selected. The relationship between the

topic and social determinant of health was identified. If the topic had some influence on social determinant of health then it was selected. Information on the number of seats available on courses for the students was also sought.

In order to investigate the availability of online courses on SDH in Maharashtra State, key words such as "online course on social determinants of health", "schools in Maharashtra providing online course in Social determinants of Health", "online social determinant of health course in Maharashtra", and "distance education social determinant of health course in Maharashtra" were used. An online search was also conducted to obtain information on courses or training offered in social determinants of health elsewhere in India and abroad.

The data on affiliation, establishment of the Institute, courses offered, duration of course, credits, and topics obtained from the public health school websites were then entered into a matrix. Any additional observations were also noted.

To assess the quality of the courses, a search was conducted in the public health school websites for student feedback, alumni feedback etc. Information on the general education system in Maharashtra was also collected from the internet.

c) Literature Review
i) Main SDH in India and Maharashtra

To obtain an insight into the prevailing SDH in India and Maharashtra, articles were searched through the Google scholar search engine. The search was restricted to articles from the year 2006 onwards. Key words used in the search included: "social determinants of health in India", "social determinants of health in Maharashtra", "poverty in India", "poverty in Maharashtra", "literacy in India", "literacy in Maharashtra", "Health expenditure in India", "Impact of Nutrition on health in India", "Impact of nutrition on health in Maharashtra", "Water and sanitation impact on health in India", "Water and sanitation impact on health in Maharashtra", "Access to health care in India", "Access to health care in Maharashtra", "Health inequity in India", Health inequity in Maharashtra", "Impact of caste on health in India", "Impact of caste on health in Maharashtra", "Impact of environment on health in India", "Impact of environment on health in Maharashtra", and "Health seeking Behavior in Maharashtra".

Data retrieved from the articles were entered into a specially constructed table. Additional information was also obtained on the author of the article, objectives of the study, methods, results and recommendation. This is given in Annex 2. A discussion or narrative was then produced, based on the recommendations and results. For additional contextual information, statistical data from 2011 the census report was also obtained.

ii) Ongoing work on SDH in Maharashtra

With regards to ongoing work on SDH, nongovernmental organizations (NGOs) were identified through the Google search engine. The search was confined to NGOs in Maharashtra State. The key words used for this search were "NGOs in Maharashtra State", "Health organizations in Maharashtra", and "Organizations working on Social determinants of health in Maharashtra State".

The websites of the NGOs identified through this as working in Maharashtra State were then visited in order to assess their SDH-related work: the NGOs working on issues related to SDH were selected for the review, while those whose work was deemed to be unrelated to SDH were excluded. Through their websites, the data on the mission of the organization, core areas of their work, and their accomplishments was retrieved and entered into a tabular form. A detailed narrative on ongoing SDH work in Maharashtra State was then written based on the information in the table.

iii) SDH policies and policy reviews in Maharashtra and India

The policies and forthcoming policies related to SDH in both Maharashtra and India were searched through the Google search engine. The websites of the government of the Maharashtra Public Health Department Directorate of Health Services, the Ministry of Health and Family welfare, and the Department of Education of the Government of India were visited in order to obtain information on policies in India and Maharashtra.

For more information on policies in India, key words such as "national health policy", "national environmental policy", "national water policy", "national urban sanitation policy", "national employment policy", "national health bill", "food security bill", "Five year plan", "Integrated child development scheme", and "Universal Health Coverage" were used. Data about all the policies identified as having SDH-related components were then retrieved and entered into a matrix. These data comprised the SDH component of the policy, as well as the date, if known, of any forthcoming policy review. The data were then used as the basis for building a narrative text about policies on SDH in India and Maharashtra.

d) Stakeholder Interviews

Prior to conducting the interviews, approval from the KEM Hospital Research Center Ethics Committee was obtained. The Committee comprises 12 members from multiple disciplines and sectors, and it meets once every quarter (these meetings take place in January, April, July and October). 12 copies of the INTREC proposal were submitted prior to the meeting of April 2012. The committee approved both the study and the conducting of stakeholder interviews at that

meeting. The INTREC proposal was also presented to the Ad-Hoc Committee, a scientific committee that reviews and also approves study proposals at the KEMHRC.

Interviews were conducted in Maharashtra State. A list of 20 stake holders was prepared. These stakeholders were selected depending on their areas of interest, research work, or their work on SDH in various sectors. The stakeholders were identified through Google search engine. To gain a comprehensive perspective on SDH, we aimed to interview different categories of people, acknowledged SDH experts, people from both the Health and non-Health sectors, Donors, and NGOs.

The SDH experts were selected based on their work conducted on SDH, and were either University professors or other experts with a vast experience in public health. The respondents from non-health sectors were selected from organizations that deal with advocacy, economics or politics. Relevant donor organizations and NGOs included those organizations actively involved in conducting or funding SDH work in Maharashtra State.

A final shortlist of 10 respondents was produced, based on those who gave an initial positive response to being interviewed, after which, appointments were made. An information sheet pertaining to the study, and the interview guide, were sent prior to the interview. Interview guides were specific to the category of respondent – for example, donors were asked if they had ever funded SDH research, while academics were asked about the challenges associated with meeting and exchanging views with policy makers.

On the day of the interview, the respondents were provided with the informed consent form. After reading it, they signed the form, and the Interviewer then added her own signature. In addition to responding to the interview questions, the informants were encouraged to ask their own questions related to the study.

Approval for recording the interview was obtained from the respondent prior to the start of the interview. The interviews were conducted in English Language. The recorded Interviews were then transcribed, and Open code software (http://www.phmed.umu.se/english/divisions/epidemiology/research/open-code/) was used for conducting thematic qualitative analysis on the data.

Table 1 gives details of the 10 respondents' sectors and positions

Respondent	Sector	Position
1	NGO	Coordinator
2	SDH Expert	Assistant Professor
3	SDH Expert	President of NGO
4	Outside Health Sector	Research Coordinator
5	NGO	Senior Research Officer
6	Outside Health Sector	Associate Professor
7	SDH Expert	Professor
8	Donor	Program Manager
9	Health sector	Medical Superintendent, Retired Director of State health resource systems
10	NGO	Anthropologist and Clinical research fellow

Table 1 – The Positions and Sectors of the Informants who contributed to this study

4. The Indian Context

India is home to more than 1.2 billion people, making it the world's second most populous country after China, and the largest democracy in the world. It is also one of the oldest civilizations on earth, with a rich history and colorful cultural heritage. Since its independence from British colonial rule in 1947, India has evolved, socioeconomically and demographically, in remarkable ways. Agricultural production, industrialization and, in the recent decade, India's participation in the global economy, has brought the country extraordinary economic power and growth. According to World Bank, India is the fourth largest economy in the world today in terms of purchasing power parity. However, although poverty is on the decline, India still has among the highest incidence of malnutrition in the world. Its growing economy and growing population place ever-increasing demands on its infrastructure; on equitable access to healthcare, education, transport, water and sanitation; and on the environment. These pose a myriad of ongoing and future challenges for the people and the government of India (World Bank, India Overview).

Geography
Covering an area of 3,287,263 square kilometers, India has the seventh largest landmass of any country in the world, and it dominates the South Asian subcontinent. The country shares land borders with Pakistan to the West, China, Nepal and Bhutan to the North, Burma to the East and almost surrounds Bangladesh in Eastern India. The Arabian Sea borders India's Eastern coast while the Bay of Bengal borders the Western coast. India is located in the Northern Hemisphere (CIA World Fact Book, India). See Figure 1.

The capital of India is New Delhi in the union territory named National Capital Territory of Delhi. Other major cities include Mumbai, Kolkata, Chennai and Bangalore (CIA, ibid).

India has a diverse geographical terrain. The Himalayas lie in the North and the high plains of Deccan Plateau in the South; the fertile Ganges Plains and renowned Ganges River lie in the East while the arid deserts are in the West. The third highest mountain in the world, Kanchenjunga is in North-Eastern India. India's climate ranges from tropical monsoon in the South to alpine and temperate in the North (CIA, ibid).]

India is affected by a variety of natural disasters, including droughts, cyclones, floods and earthquakes, which lead to destruction, famine, displacement, diseases and deaths (CIA, ibid).

Almost half of India's land is arable. India has the fourth largest coal reserves in the world, and its land is also rich in natural resources such as iron ore and bauxite. Agricultural production,

industrialization and a large and growing population have led to loss of arable land due to desertification; pollution of air from industrial and vehicular emissions; and pollution of water from untreated sewage and pesticides runoff. Tap water is not potable in India (CIA, ibid).

Figure 1 – Map of India (Source: CIA World Fact Book)

Demography

India's population has been estimated at 1,205,073,612 (July 2012). The estimated age group structure is as follows: 29.7% from 0-14 years; 64.9% from 15-64 years; and 5.5% from 65 years and older (2011). The estimated median age for an Indian person is young, at 25.6 years. Population growth estimates for 2012 stand at 1.312%, and total fertility rate is 2.58 births per woman. The estimated birth rate for 2012 far exceeds the death rate, at 20.6 births to 7.43 deaths per 1000 persons (CIA, ibid).

By 2012 estimates, life expectancies at birth for males and females are 66 and 68 years respectively (CIA, ibid). In the period 1990 to 2012, life expectancy for the general population rose by 9 years to 67 years. Though this figure remains low compared to the rest of the world, India's population is aging rapidly. Inequity in health status can be seen from different life expectancies across states: life expectancy in Kerala is 18 years longer than that in Madhya Pradesh (World Health Organization, India).

Since 1990, the infant mortality rate has fallen from 81 to 46 per 1000 live births (2012) and under-5 mortality rate has fallen from 115 to 63 per 1000 live births (2010) (World Health Organization, World Health Statistics 2012). According to 2006 figures, 43.5% of children under the age of 5 years are underweight, highlighting the high incidence of malnutrition in India. Maternal mortality rate is 200 per 100,000 live births (2010).

The age and gender distribution of India's population is estimated and presented below (World Health Organization, India). The distribution shows a young population with low dependency ratio while birth rates show a trend of decline.
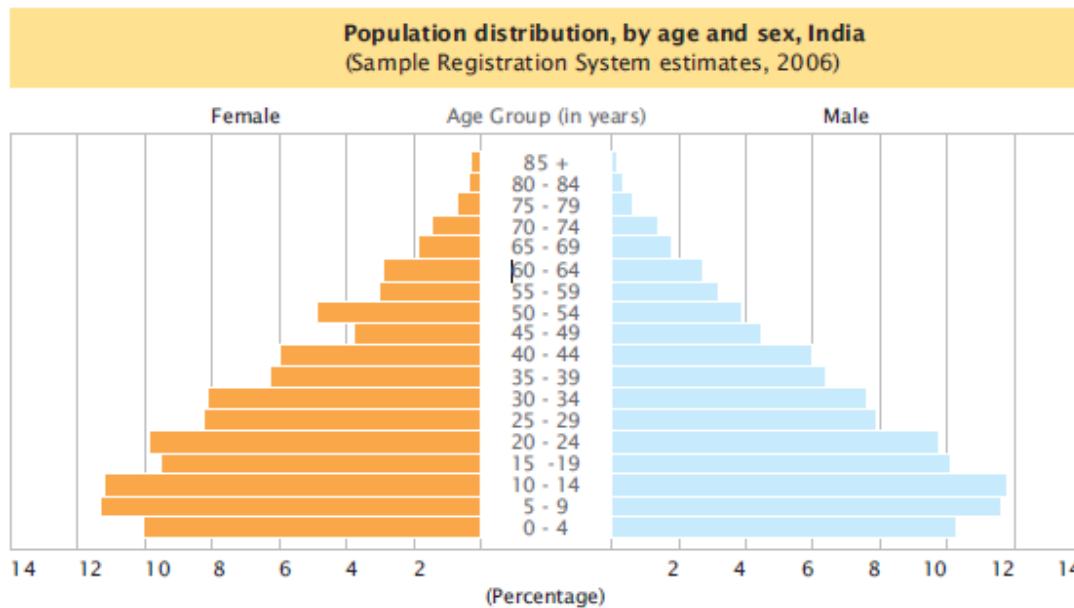
Figure 2 – Population pyramid of India

Urban migration is a recent phenomenon in India, creating megacities and growing shanty towns. In the period of 1951 to 2001, urbanization has increased 4.6-fold, even though the population grew only by 2.8-fold (World Health Organization, India). In 2010, 30% of Indian's total population resided in urban areas and this rate of urbanization is expected to increase by 2.4% annually until 2015 (CIA World Fact Book, India). Population access to drinking water is 84% in rural areas and 96% in urban areas; access to improved sanitation is 21% in rural areas and 54% in urban areas (2008). It is interesting to note that 366 million people had access to proper sanitation in 2008, while more than 580 million people owned mobile phone subscriptions (World Health Organization. India).

In terms of proportion, poverty (US$ 1.25 a day purchasing power parity (PPP)) in the population appears to have declined from 60% in 1981 to 42% (2005). However absolute

figures reveal that there were 20 million more people living in poverty in 2005 compared to 1990 (World Health Organization, India).

The two main ethnic groups in India are the Indo-Aryans and Dravidians; as of 2001, there are 15 official mother tongue languages --- Hindi is the most widely-spoken primary tongue; religious beliefs are largely dominated by Hinduism and Islam (CIA World Fact Book, India).

Socio-economic and political context
India's rich heritage is a result of its long history and diversity. India has been invaded by Iran, Central Asia, Arabia, Afghanistan and Britain over the course of its history, and its people and cultures assimilated these influences to create the unique Indian race and culture that exists today. In modern India, religion, caste and language contribute greatly to shape its society and politics. The widely-known Hindu caste system is in fact, a simplification of reality: the Indian society is divided into thousands of hierarchical factions based on complex notions. Caste discrimination is illegal, but it remains prevalent in rural areas though less so in the wealthier and heterogeneous urban cities. To mediate and reduce the effects of the caste system, the government works on social policies and to improve rural access to education, land reform and economic opportunities (United States Department of State).

India gained independence on August 15th, 1947, after a peaceful 27-years long campaign led by Mohandas K. Gandhi. Up until recently, India has experienced continuous political instability as crowd sentiments swung between nationalistic and regional inclinations. Since 2004, India has been led by the United Progressive Alliance who has since established good ties and cooperation initiatives with United States (United States Department of State).

Economy liberalization began in early 1990s, and it catalyzed India's economic growth in terms of Gross Domestic Product (GDP) to an annual average of 7% since 1997. India's GDP for 2011 was an estimated US$ 1.676 trillion. According to 2011 estimates, 56.4% of GDP came from India's services sector, although only 34% of the workforce (estimated workforce proportion in 2009) worked in that sector. This is in contrast to 52% of the workforce in agriculture (estimated workforce proportion in 2009) that produced 17.2% of the nation's GDP. India had public debt of more than US$ 800 billion and an inflation rate of 8.9% (2011) (CIA World Fact Book, India).

According to the 2001 census, the literacy rate of the population aged 15 and above was 61%; the unemployment rate among youths (aged 15-24 years) was 10.5% (2004). In the distribution of family income GINI Index – in which a score of 0 represents completely

equitable distribution, and a score of 100 represents completely inequitable distribution – India scored 36.8 in 2004 (CIA World Fact Book, India).

The Indian economy has exhibited robustness in the recent global financial crisis and the county has an optimistic medium-term economic outlook. On the other hand, the country needs to address challenges such as widespread poverty, lack of physical and social infrastructure, increased need for better and more advanced education, unemployment, and urban migration (CIA World Fact Book, India).

Health and Development

Healthcare in India is diverse, partly because it encompasses both modern and traditional medical systems. National public health initiatives are financed by the government though decision-making has been decentralized to local institutes. The rural healthcare network is extensive and operates at many levels, from community workers and primary health centers, to secondary hospitals and medical schools with specialist healthcare. Private healthcare is large and unregulated by the government (World Health Organization. India).

India has made several healthcare initiatives in the past three decades which include decentralizing power to local health institutions in 1992; the National Nutrition Policy in 1993; the National Policy on Indian System of Medication and Homeopathy and Drug Policy in 2002; introduction of health insurance schemes for the poor in 2003. More recently, the Indian government has committed itself to carry out the National Rural Health Mission and in October 2010, a committee of experts was commissioned to develop a framework to achieve universal health coverage in India (World Health Organization. India).

Health and development challenges in India include: equity in health status and healthcare, both communicable and non-communicable diseases, mother and child health, malnutrition and poverty, and the impact of new trade conditions and international trade agreements on the health system (World Health Organization. India).

Millennium Development Goals

The proportion of the population in poverty has declined quite rapidly, according to preliminary estimates from the 2009-2010 National Sample Survey. However for malnutrition among children aged 3 years and below, India may miss its target of a reduction of 26% by seven percentage points. India has succeeded in providing safe drinking water to more households but access to access to improved sanitation facilities is still undesirably low at 42.3% in 2008 (World Health Organization. India).

Greater urgency and effort are required for India to meet targets for reduction in child mortality and increase the proportion of measles-immunization among infants. Maternal mortality may have declined but more deliveries still need to be done by trained professionals. India is on-track for attaining universal primary education. Primary school (grades I-V) enrolment rate is likely to be 100% before 2015, though 2009-2010 statistics reveal that only 76% finish grade V; on a brighter note, India may achieve 100% youth literacy (aged 15-24 years) by 2015(World Health Organization. India).

Gender disparity in the enrolment for primary, secondary and tertiary education has reduced since 1990. India is expected to reach gender parity in the enrolment for primary and secondary education by 2015. There may be more literate young women than men (aged 15-24 years) by 2015. However employment in non-agricultural sector is still strongly male-dominated, optimistically female participation will rise to 23.1% by 2015(World Health Organization. India).

Disease Burden

India faces a double burden of disease with reference to both communicable and non-communicable diseases. Communicable diseases make up around 38% of the disease burden in India, with great disparity across different states. Non-communicable diseases (NCDs) have emerged as key issues in public health, as mortality rates are set to rise from 53% (2005) to 59% (2015). Tobacco use and road traffic are major risk factors. In India, NCDs tend to afflict the population one decade ahead of those in western countries, hence the concern for its prevalence, prematurity and socioeconomic implications (United States Department of State).

HIV/AIDS

In India, 80% of HIV/AIDS infections occur through heterosexual intercourse. High risk groups include sex workers, men who have sex with men, injecting substance abusers, truck drivers and migrant workers (AVERT).

By 2009 estimates, there are 2.4 million people living with HIV/AIDS. Among the 2.3 million HIV/AIDS-inflicted adults (aged 15 years and over), an estimated 1.42 (62%) million are men. There were 170,000 deaths due to HIV/AIDS in 2009 (UNAIDS estimates, 2009). In the same year, the National AIDS Control Programme-III (NACP) reached out to 53% of female sex workers; 78% of men who have sex with men; 70% of injecting substance abusers; and 17% of all truck drivers and migrant workers combined. Antiretroviral therapy coverage was between 39%-54% of those in need; and half of the mothers who tested positive for HIV/AIDS were treated for the prevention of mother-to-child transmission (UNAIDS overview, 2009).

In July 2009, the Delhi High Court made a landmark decision to decriminalize male to male sex behavior, which was a critical step towards Universal Access for that high risk group. The challenge remains for India to reduce disease burden among high risk individuals, to cope with high costs of antiretroviral drugs, and to strengthen both its health system and community ownership (UNAIDS overview, 2009).

Tuberculosis

Tuberculosis (TB) is an important public health concern in India. Almost 2 million people in India contract TB annually and an estimated 330,000 people die from it every year. India's TB incidence makes up 20% of global TB disease burden (World Health Organization. India, TB).

World Health Organization (WHO) classifies India as a country with high TB burden, high HIV burden and high MDR-TB burden. In 2010, there were 1.55 million notified cases, of which 1.23 million were new infections and 0.29 million were retreatment cases. TB treatment success rates were 88% for new infections and 75% for retreatment cases (2009). The estimated multi-drug resistant TB cases among notified cases were estimated at 2.1% and 15%, for new cases and retreatment cases respectively (2010). India's total budget for the financing of its TB programme increased from US$ 139 million in 2011 to US$ 219 million in 2012 (World Health Organization. Tuberculosis).

Malaria

The malaria situation in India is under control, according to WHO analysis in 2010. The malaria epidemiological profile of the Indian population is: 26% are classified as high transmission population (>= 1 case per 1000 population) and 56% are classified as low transmission population (0-1 cases per 1000 population). Slide positivity rates for malaria have declined since 2000 to 1.5% in 2010; the incidence of malaria mortality and confirmed cases has been fairly stable over the decade (2000-2010). A large proportion of the financing for India's malaria programme comes from the government; about half of the expenditure for malaria intervention is spent on prevention, such as insecticides, spraying materials, and insecticide-treated bed nets (World Health Organization. Malaria).

Non-Communicable Diseases Overview

By 2008 estimates, nearly 3 million men and 2.3 million women died from NCDs, of which 38% of the men and 32% of women died before the age of 60 years. Cardiovascular diseases account for 24% of all deaths while NCDs as a whole cause 53% of total mortality, as compared to mortality due to communicable, maternal, perinatal and nutritional conditions (37%). The disease-specific age-standardized mortality rate for cancer, chronic respiratory diseases,

cardiovascular diseases and diabetes are as in Table 2 (World Health Organization. Non-Communicable Diseases).

	males	females
All NCDs	781.7	571
Cancers	78.8	71.8
Chronic respiratory diseases	178.4	125.5
Cardiovascular diseases and diabetes	386.3	283

Table 2 - Age-standardized death rate per 100 000 in India, 2008

India is in the midst of a demographic transition as life expectancy extends and the population ages. Correspondingly, NCDs burden will increase as the proportion of older population grows (World Bank. Non-Communicable Diseases).

Risk Factors

Key behavioral risk factors are current daily tobacco smoking and lack of physical activity; key metabolic risk factors are hypertension, hyperglycemia, overweight, obesity and raised cholesterol. The prevalence of behavioral and metabolic risk factors in India are as follows:

Behavioral risk factors			
2008 estimated prevalence (%)	males	females	total
Current daily tobacco smoking	25.1	2.0	13.9
Physical inactivity	10.8	17.3	14.0

Metabolic risk factors			
2008 estimated prevalence (%)	males	females	total
Raised blood pressure	33.2	31.7	32.5
Raised blood glucose	10.0	10.0	10.0
Overweight	9.9	12.2	11.0
Obesity	1.3	2.4	1.9
Raised cholesterol	25.8	28.3	27.1

Table 3 – Behavioral and metabolic risk factors for India, 2008 (World Health Organization. Non-Communicable Diseases)

About one-third of the Indian population suffers from raised blood pressure and one-quarter of the population has raised blood cholesterol. Some figures reveal a gender dimension to the

NCDs risk factors in India: one-quarter of men smoke tobacco daily, over 12 times that of women; 1.6 times as many women do not exercise compared to men, while 1.8 times as many women are overweight and twice as many women are obese compared to men (World Health Organization. Non-Communicable Diseases).

Tobacco

Smoking is a core risk factor for NCDs. According to World Bank's NCDs policy brief in 2011, smoking is already responsible for 1 in 5 deaths among men and 1 in 20 deaths among women (World Bank. Non-Communicable Diseases).

India signed the WHO Framework Convention on Tobacco Control in 2003 and ratified it in 2004. Tobacco control interventions have been implemented by the government such as creating smoke–free environments in public areas such as healthcare and education facilities, indoor offices and public transport. However compliance to these legislations can be improved, with a WHO-rated compliance score of 5/10. The Indian government spent US$ 5.2 million for its national tobacco control programme (2010) (World Health Organization. Tobacco Control).

According to the 2009 Global Adult Tobacco Survey, the estimated prevalence of tobacco smoking and on the use of smokeless tobacco among adults (aged 15 years and over) are as in Table 4.

Adult prevalence, smoking (%)	Any smoked tobacco		Cigarettes	
(2009)	Current	Daily	Current	Daily
Male	24.3	18.3	10.3	6.3
Female	2.9	2.4	0.8	0.6
Total	14.0	10.7	5.7	3.6

Adult prevalence, smokeless tobacco use (%)	Current users
Male	32.9
Female	18.4
Total	25.9

Table 4 – Prevalence of smoking and of smokeless tobacco use in India, 2009(World Health Organization. Tobacco Control).

Compared to statistics from an earlier survey in 1998-1999 (National Family Health Survey-II, n=315 598 persons), the proportion of men who smoked tobacco has reduced by 5% (from 29.3%) while there is no change for women. However, the proportion of men and women who

chewed tobacco was lower, at 28% and 12% respectively (Rani et al., 2003). Tobacco control interventions need to be culturally sensitive and tailored to on-going trends.

The use of smoked tobacco is less common among women than men, but there is an increasing proportion of women who use smokeless tobacco. Although many more men than women use tobacco, India needs to target both men and women equally in tobacco control interventions.

Alcohol

In 2005, the official records of alcohol consumption (by adults aged 15 years and over) categorized by type of beverage was: spirits – 88%; beer – 10%; wine – 2%, in terms of pure alcohol. Since 2001, Per capita alcohol consumption by adults was estimated to have increased to an average of 2.6 litres of pure alcohol in 2003-2005.

ABSTAINERS (15+ years) 2003	Males	Females	Total
Lifetime abstainers	67.20%	92.00%	79.20%
Former drinkers	12.80%	5.00%	10.90%
Abstainers*	80.00%	97.00%	90.10%
*Persons who did not drink in the past 12 months.			

Table 5 – Alcohol abstainers in India, 2003 (World Health Organization. Alcohol)

Alcohol abstinence is prevalent in India, particularly among women. The proportion of drinkers who are heavy episodic drinkers is 25% for men and 14.6% for women. Estimated prevalence of alcohol use disorders among adults is 3.47% for men and 0.42% for women (2004). The national maximum legal blood alcohol concentration when driving is 0.03% (World Health Organization. Alcohol).

Physical Activity and Nutrition

A study of four consecutive National Family Health Surveys (1992-2006) showed that although under-nutrition is still more prevalent than overweight, there is an increasing prevalence of the latter, particularly in some urban and high socioeconomic status groups. The same study found that the prevalence of overweight is greater among certain groups: women, urban-dwellers and those of high socioeconomic status. Underweight was more prevalent among ever-married women and pre-school children (Wang et al., 2009).

Under-nutrition has been a long-running public health issue for India while overweight and physical inactivity have only emerged recently as new health concerns. These issues exist on

opposing ends of the spectrum and are complex in light of their gender and socioeconomic dimensions.

Country's Capacity to Address NCDs

The Ministry of Health has a dedicated division to address NCDs, which underwent restructuring in 2011 to expand its national program for diabetes, cardiovascular diseases and stroke. The government recently began to tackle NCDs by launching initiatives steered towards prevention, health promotion, treatment, control, surveillance, monitoring and evaluation. These programs include the National Cancer Control Program, the National Trauma Control Program that deals with road traffic accidents, and the Cigarette and Other Tobacco Products Act (World Bank. Non-Communicable Diseases, 2011).

The national health reporting system covers NCD cause-specific mortality, morbidity and risk factors (World Health Organization. Non-Communicable Diseases), however no information related to quality of care or health expenditures is collected. Data collection on NCDs can also be more reliable and regularly-reported. These improvements in quality and quantity of data will be very helpful in policy planning for NCDs (World Bank. Non-Communicable Diseases, 2011).

India's rapidly-aging population and mounting demand for healthcare will lead to an overwhelmed healthcare workforce. There is urgent need for more healthcare professionals, especially those specifically-trained to deal with diabetes, cardiovascular diseases and stroke in the primary healthcare setting(World Bank. Non-Communicable Diseases, 2011).

India spent 4% of its Gross Domestic Product (GDP) on healthcare, but only 1.1% of GDP goes into public expenditures (2008). Out-Of-Pocket expenditure account for 80% of private expenditures and that places a disproportionately-large burden on the poor. The hefty healthcare costs of NCDs will expose more and more poor to financial vulnerability and distress (World Bank. Non-Communicable Diseases, 2011).

5. Curricular Review for Post-Graduate courses on the Social Determinants of Health

This chapter starts with a brief review of SDH training courses available globally and elsewhere in India, before focusing in on Maharashtra State.

a) SDH training in India and Abroad

This section provides an overview on the SDH training conducted in India and abroad in order to provide a context for the current SDH training situation in the State of Maharashtra.

An online course is available on social determinants of health which is offered by PAHO/ WHO (PAHO/WHO, n.d.). This course was developed primarily for the WHO/PAHO staff members as well as for officials in health ministries in all the countries who are actively in involved in formulating programs, policies and plans related to SDH. This course is also freely available to the public, through a dedicated website. The introductory course module is designed to raise awareness and provide an overview on SDH, while the second module focuses on policy responses to, and interventions on SDH.

Within India, there is the Ramlingaswami Centre for Social Determinants of Health in Delhi, in the north of India. The Centre is a part of the Public Health Foundation of India, and it aims to improve the health of the Indian population with a focus on the disadvantaged groups. The Centre plans to conduct high quality research, training and policy development with regards to SDH. It also intends to form an evidence base on SDH through research, and then incorporate this evidence into teaching on SDH within public health training in India. Further, it aims to promote evidence-informed policies to reduce health inequities, to form a national health equity surveillance system, and to act as a hub for SDH knowledge (www.phfi.org).

The WHO/PAHO online course referred to above not only introduces the concepts of SDH but also examines the relationship between the SDH, social justice and human rights, while also suggesting approaches to dealing with them. The Centre for Social Determinants of Health in Delhi, by contrast, works on gathering evidence pertaining to SDH, and implementing the knowledge for training and formulating policies as a means of tackling the persistent issue of health inequities.

b) E-Learning in India

There has been an increase in e-learning in India due to economic and technological trends. Access to quality higher education has been the driving force behind this advancement. During the 1980s and 1990s, open universities (universities that provide distance education,

increasingly through online courses) were founded in different states of India, namely Andhra Pradesh, Bihar, Rajasthan, Maharashtra, Madhya Pradesh, Gujarat, Karnataka, West Bengal and Uttar Pradesh. The motive behind the establishment of the distance education universities was the government's vision to provide democracy in education.

A challenge in expanding e-learning in India is the urban-rural digital divide, which is the result of high levels of illiteracy in especially the rural areas of the country, combined with lower levels of internet penetration. The Internet service providers have most of their market in urban areas, and as a result, internet connectivity is low in most rural regions of India. Furthermore, computers are expensive for the ordinary citizen. The internet was introduced into India for the first time in 1995, through Videsh Sanchar Nigam Limited. The Government of India is moving towards the Information age with an aim of 'Internet for all'. The hindrance to internet connectivity in India is implementation in the form of various operational, procedural, and regulatory issues. To advance computer technology in all the states of India, the society for electronics and computer technology has established 4000 multipurpose IT centres in rural and tribal areas. The training and servicing modules are provided by them in Indian languages. This helps in overcoming the language barrier in terms of accessibility of computer and Internet which are mostly in English Language. The government is also trying to provide computer literacy training in partnership with the private sector (Gambhir, 2008).

The government Industry committee is working on "improving PC penetration" by providing affordable PC at US $ 229 in order to achieve a target of 65 PCs per 1000 people by 2008. With regards to connectivity, 'Simputers' provide internet connectivity to the rural population. In the underserved villages, 'cor DECT wireless' in local loop technology aids in providing access to the internet (http://www.ci-journal.net/index.php/ciej/article/view/313/429).

c) The education system in Maharashtra State

Maharashtra State, located in the west of India, is one of the largest states, both in terms of area and population. With a total of 35 districts, it is known for its excellent educational facilities. The top educational destination in India is Pune city. In addition to Pune, cities such as Mumbai, Nagpur, Aurangabad and Kolhapur are also very well known in terms of their educational facilities.

The education system in Maharashtra includes preparatory school or preprimary; primary school; secondary school; higher secondary school; undergraduate college; graduate college; and post graduate college respectively. Schooling in Maharashtra starts when children are aged five years.

The management of the schools is either under the control of Municipal Corporations, private trusts, or individuals. The private or municipal schools are either affiliated with Maharashtra State Secondary School Certificate Board (SSC) or the Council for the Indian School Certificate examination (ICSE) or the Central Board of Secondary Education Board (CBSE). The Maharashtra education.net website (www.maharashtraeducation.net) provides an overview to the education system in Maharashtra. It also provides a list of universities in the State.

Science, Commerce or Arts streams can be chosen after passing the Secondary School Certificate Board Exams (SSC exams). Entry into each stream depends on the marks acquired by the student, as each college has its cut-off percentage score, below which students cannot be accepted. The student then enters the XI grade followed by the XII grade. In the XII grade, higher secondary school certificate exams are given. Depending on the marks obtained in the XII grade, admission into colleges can be sought. Reputed degree colleges in Maharashtra have a cut-off percentage score for all undergraduate courses. After completion of Undergraduate course, one can get into graduate course through competitive exams (www.maharashtraeducation.net). The public health courses are post graduate courses, which can be pursued after graduation. The journey to joining a public health course can therefore be seen as long and competitive.

d) SDH-related training in Maharashtra: institutions and courses

Programs are available in the State in general public health, community medicine, health service management, health administration, and social epidemiology. These include most of the aspects related to SDH: for example, epidemiology will deal with trends in health inequity, while a course in health policy, economics or finance will focus on issues to do with policy and health funding, which also contribute to the social determinants of health. Many of the courses within these programs are available to students as stand-alone courses. However, a comprehensive course or program specifically focused on SDH is not available in the state of Maharashtra. Below is a list of the SDH-relevant programs and courses that are currently on offer, as well as the institutions that provide them. See Annex 1 for the full details.

Institutions
a) Interdisciplinary School of Health Sciences (http://www.unipune.ac.in/snc/school_of_health_sciences/default.htm)
b) Symbiosis Institute of Health Sciences (http://www.sihspune.org)
c) OASIS Institute of Health Sciences and Research Centre (http://www.oasishealthinstitute.org/about_us.html)
d) Tata Institute of Social Sciences (http://www.tiss.edu)
e) Maharashtra University of Health Sciences (http://www.muhsnashik.com)

f) Indian Institute of Population Sciences (http://www.iipsindia.org)
g) Institution of Health Management Pachod (http://www.ihmp.org/)

Programs
a) Diploma in Public health offered by 14 medical colleges in Maharashtra
b) Diploma in Community Medicine offered by 1 medical college in Maharashtra
c) MD Community Medicine offered by 30 medical colleges in Maharashtra
d) Masters in Social Epidemiology offered by 2 public health schools

Please refer to Annex 1 table (on SDH related courses in Maharashtra State) for more details.

It proved to be not possible to establish details on the number of seats available for all the schools – this piece of information was not available online. Further, the quality of the courses cannot be determined, as there is a lack of information available on alumni or student feedback.

The program that is perhaps most closely related to SDH would be the Masters in Social Epidemiology. This course is offered by only a few public health schools. However, the short course on Social Epidemiology is covered in general public health programs. Social epidemiology focuses on understanding public health problems and developing research skills on evidence-based practices, as well as training on the implementation of public health programs. The primary aim of social epidemiology is to study the influence of society and different forms of social organization on health of individuals and population. Social epidemiology provides a better understanding of how, where and why inequities affect health. It includes a traditional etiological approach to the social experience of the population. (www.paho.org/english/sha/be_v23n1-socialepi.htm).

e) Internet availability in Maharashtra

In comparison to other States in India, Maharashtra has more computers and internet connectivity. However according to the 2011 census, rural Maharashtra lags behind in these technological advances. Around 13% of households in Maharashtra have a computer, which is higher than the national average of 9%. However, only 6% of the households have internet connectivity in Maharashtra state, though this is twice the national average.

The State's relatively higher internet penetration is due to increased computer access in cities like Mumbai, Pune and Nashik. Around 23.6% of people in cities and towns of Maharashtra State have access to computers, as compared to only 4.7% in rural Maharashtra. Internet

accessibility in household in Urban Maharashtra is 11.7% while only 0.8% is available to its counterpart.

The major challenges for computer and internet access in Maharashtra are the low levels of electrification in rural areas, and the predominance of English as the main language of the Internet (http://articles.timesofindia.indiatimes.com).

f) SDH training gaps

The main SDH training gaps identified in this review are as follows:

i) The public health schools in Maharashtra State provide courses that deal with most of the aspects of SDH, but they do so in a segregated manner through different courses.

ii) No course or program that focuses specifically on SDH is available in Maharashtra State.

iii) Only two schools provide social epidemiology course in Maharashtra State. Social epidemiology is a branch in epidemiology that includes the study of the social distribution and social determinants of health.

iv) No online course is currently provided by any of the public health schools in Maharashtra State.

v) Acquiring a specialization in SDH is not possible, due to the unavailability of any course in Maharashtra State.

g) Recommendations

1. **There is a clear need to develop SDH-specific courses and programs to complement the public health training programs currently available in Maharashtra State**. General public health training will provide a view on the functioning of the public health system in India, but in the absence of SDH-specific training, an understanding about SDH and health inequities will still be lacking.

2. **Links should be established between public health training institutions in Maharashtra and the Ramlingaswami Centre for Social Determinants of Health in Delhi**. This will facilitate the development of high quality and locally relevant SDH training for students in the State.

3. **Online, locally relevant courses on SDH should be developed**, in order to serve students who are unable to attend campus-based classes. The digital divide and illiteracy both clearly represent challenges to expanding SDH education through online courses, but as increasing numbers of literate people are able to access computers and the internet, this opportunity should be seized.

4. **INTREC must contribute to raising the profile of SDH in Maharashtra**, through providing training both to INDEPTH scientists and to researchers and students within the public health sphere.

6. Literature Review

a) Social Determinants of Health in India

India has a rapidly growing economy, diverse cultures, and includes a wide range of socioeconomic groups. However, the health of the Indian population is a major concern, with many social, cultural and economic factors that promote inequities prevalent in certain groups.

One example of health inequity in India is the variation in life expectancy between the states. In Madhya Pradesh, the life expectancy is 56 years, while it is 74 years in Kerala. Unfair distribution of power, resources and goods along with social, economic and political factors contribute significantly to such health inequities in India (Reddy et al., 2011).

Different social determinants of health therefore exist in different States of India, but there are nonetheless some core determinants that prevail across the country. This section provides an overview of the main SDH concerns that are to be found across the nation.

i. Poverty and its underlying risk factors

In India, poverty and illiteracy are the most important social factors that have an impact upon health. The underlying risk factors that contribute to poverty are to be found at both macro and micro levels. The macro level risk factors are issues at national and regional level, for example physical geography, governance patterns, geopolitics, economic policy, a decline in natural resources, and population growth. The poverty trap, cultural barriers, lack of innovation and saving, absence of trade or business, and social issues related to women form the core of the micro level risk factors (Gupta & Kumar, 2007).

In 2010, 29.8% of the Indian population was deemed to be living in poverty (http://data.worldbank.org/country/India), while the poverty in Maharashtra State was 31% in 2004 -2005 (Mishra, Duggal, Lingam &Pitre, 2008). Extreme poverty, which is defined by the World Bank as living on less than 1 dollar per day, is a profound concern in India. At the global level, population living in extreme poverty was 29% of the total world population in 1990, but this extreme poverty decreased to 18% in 2004. Some developmental economists have suggested that this decline was brought about by modifications in the international, national, local governmental and municipal policies, thus indicating that changes in policies can decrease poverty levels (Gupta & Kumar, 2007).

In India, preventive and promotive health support systems in rural and urban regions are inadequate. Terrorism and trade barriers for instance in the State of Kashmir bring about poverty levels and lead to ill health. Corruption is also one of the factors that perpetuates

poverty in India. Further, it has been suggested that health expenditure in itself pushes some Indian households below poverty line. In addition, there has been a considerable decline in the rain and ground water in many parts of India such as central and south India, which has led to increased drought prone areas which in turn has led to some poverty-stricken farmers committing suicide (Gupta & Kumar, 2007).

India as a nation is slowly coming out of the poverty trap, and consequently there has been a decrease in the rate of poverty-related illnesses. But high poverty-related mortality rates do remain, caused by underweight, unsafe sex, unsafe water, sanitation, hygiene, indoor pollution, and malnutrition. Alleviating poverty is the most critical single factor needed to bring about sustained good health in the Indian population (Gupta & Kumar, 2007).

Infant mortality is perhaps the clearest indicator of health inequities arising out of poverty in India. Data from 2005-2006 suggests that IMR among the poorest wealth quintile was 82 per 1000 live births, while the richest wealth quintile suffered a rate of just 34 per 1000 live births (Balarajan, Selvaraj &Subramanian, 2011). There is a 3-fold increase in the likelihood of children under 5 years of age in the poorest urban quintile to die before than those in the wealthiest urban quintile. Chronic malnutrition is also 3 times higher in the poorest urban quintile than in the wealthiest urban quintile (www.who.int/kobe_centre/measuring/urbanheart/india.pdf).

In India, there has been a decline in poverty over the past three decades. This decline has been steady and sustained. In 1983, 47% of people from rural areas and 42% of people from urban areas were living below the poverty lines, while in 2004-2005, 28% of people from the rural areas and 26% of people from the urban areas were living below the poverty lines. India has achieved success in lowering the poverty rates; however in 2004-2005 it was estimated that more than 300 million people remained below the poverty line (Perspectives on poverty in India, stylized facts from survey data, 2011). The all-India head count ratio (HCR), as calculated by the Tendulkar methodology using the urban and rural poverty lines, showed a decline of 7.3%, from 37.2% in 2004-2005 to 29.8% in 2009-2010 (Government of India Planning Commission 2012).

ii.   Caste and health

Social stratification in India is based on the caste system, which has been in place for a long time. People belong either to higher castes or lower castes. The higher castes include the elite in the society, such as the Brahmins and Marathas. The lower, socially disadvantaged groups include the 'scheduled caste', 'scheduled tribes', and 'other backward class'. The scheduled castes once included "untouchables", although 'un touchability' does not exist in modern India (http://adaniel.tripod.com/modernindia.htm). Scheduled caste, being the lowest in the

hierarchy, accounts for 16% of the Indian population; Scheduled Tribes account for 8%; while 'Other Backward Class' and the Higher castes account for the remaining 76% (Baru, Acharya & Acharya, 2010).

The majority of the lower caste people live in rural areas, and they often work as agricultural laborers (Baru et al., 2010). Scheduled Tribes, also known as adivasis, are the people who did not accept the caste system and who lived in forests. The 'other backward class' includes people who had previously been categorized as 'untouchables', and who then converted to other religions from Hinduism (http://adaniel.tripod.com/modernindia.htm).

The brunt of under-5 mortality in India is borne by the lower castes, because income is inversely proportional to high infant mortality and under-5 mortality rates, and these are the poorest people in the country. In the period between 1998 and 2006, even though national infant mortality rates decreased from 101 per 1000 to 74 per 1000, the decrease was inequitably distributed between the castes. The relative decreases in under-5 mortality were 3.9% for scheduled tribes, 4.2% for scheduled caste, 4.8% among other backwards class, and 4.6% for the higher castes (Baru et al., 2010).

The policies related to the castes are conflicting in nature. A debate still continues in India regarding the existence of policies that provide the disadvantaged lower castes such as other backward castes, Scheduled tribes and Scheduled Castes, with greater job opportunities and access to higher education in comparison to their higher caste counterparts. There is a sense of dissatisfaction among the upper caste people, as they feel that these policies exclude them from some benefits, while people in the lower castes support them, as they benefit directly. Another perspective to the situation that arises is that historically the lower castes were less privileged and hence it is their right to live a better life. But the argument still continues, as to whether these policies should really be in modern India, since they continue to bring about a divide based on caste (http://www.stewartmorris.com/essays/27Chandra5.pdf).

With regards to immunization coverage, the national rate in 2005-2006 was 44%, but the scheduled tribes achieved only 31.3% of immunization coverage, while immunization coverage for scheduled castes was higher, at 39.7%. Other castes were reported to have an immunization coverage rate of 53.8% (Reddy et al., 2011).

iii.   Gender and Health

With gender bias being rooted in Indian culture, it is evident that the funds spent on health care for women are comparatively lower than that received by their male counterparts in rural India.

It is also seen that in rural areas, women are more likely than men to forgo treatment for long term ailments (High level expert group, 2012).

Further, in rural India, male births are preferred to female births, and this gender gap is worsening: the male-to-female sex ratio has declined from 927 females per 1000 males born in 2004, to 914 females per 1000 males born in 2011 (High level expert group, 2012). This inequity is due to the ideology among Indian mindsets that males are the breadwinners in the society.

iv. Religion and health

Religion has an effect on health, with the mean age of death significantly influenced by religion. The mean age of death among Muslims is 6-9 years lower than Hindus, while it is 5-7 years lower in Scheduled Castes and Scheduled Tribes (High level expert group, 2012).

v. Geographical region and health

Malnutrition varies between geographical areas of the country. Various studies in tribal areas in Jharkhand, Bihar, Madhya Pradesh, Chhattisgarh, Orissa and West Bengal showed that the incidence of malnutrition was high among the tribal children. This highlights differences in resource allocation (High level expert group, 2012).

Disparities also exist among states in India with respect to the infant mortality rate. In Kerala, there are 17 deaths per 1000 live births, while in Madhya Pradesh there are 111 deaths per 1000 live births. The child sex ratio in Punjab improved from 798 females per 1000 males in 2001 to 846 females per 1000 males in 2011, but this ratio is still the lowest in India. Another geographical disparity is to be found in maternal mortality rates, which decreased in West Bengal by 32.4% in 2004-2006 while it increased by 3% in Haryana(High level expert group, 2012). Immunization coverage also varies by geographical region: the national average for immunization was 44 % in 2005-2006, but among the urban and rural areas the immunization coverage was 58% and 39% respectively (Reddy et al., 2011).

These disparities between states could be due to variations in policy implementation, resource allocation, education level, employment levels, and poverty levels, which directly or indirectly affect the health of the people.

vi. Literacy and Health

Increasing literacy rates can significantly decrease the burden of communicable and non-communicable diseases by adopting healthy behavior and healthy lifestyle. Kerala State, for example, has relatively low income per capita, but it also has the lowest infant mortality rates in the country due to high literacy. The life expectancy in Kerala is also higher than that of the

national average, and the consumption of tobacco is lower. This shows that the literacy and education can be a prime determinant in alleviating the burden of communicable and non-communicable diseases (Gupta, 2006)

In the article "Economic inequalities in maternal health care: pre-natal care and skilled birth attendance in India, 1992-2006", trends and patterns in utilization of prenatal care in the first trimester and skilled birth attendance among poor and 'non-poor' mothers were assessed in 3 provinces, namely Maharashtra, Tamil Nadu and Uttar Pradesh. The results of the study showed that there was a sluggish increase in the pre-natal care and skilled birth attendance in India in 1992-2006. This increase in maternal health care utilization was observed among the 'non-poor' mothers and those who attended the private health care facilities. Specifically, it was found that the probability of increased use of health services was more likely in 'non-poor' mothers from Tamil Nadu and Maharashtra living in urban areas, with an education higher than primary education, a literate husband, low parity, and exposure to mass media (Pathak, Singh & Subramanian, 2010).

Comparing the 2005-2006 data on infant mortality, based on education, when the under 5 mortality was compared, it was evident that under five mortality was high at 106 per 1000 live births among uneducated mothers as compared to 49 per 1000 live births among mothers with at least 5 years of education (Balarajan, Selvaraj & Subramanian, 2011).

vii.   Nutrition

Hunger affects more than one fourth of the Indian population. The proportion of children under the age of 3 years who are underweight in India is 40%, while proportion of children under the age of 3 years who are stunted and wasted account for 45% and 23% respectively, according to the WHO (High level expert group, 2012). Even though some states in India are economically developed, high food insecurity exists in states of Gujarat, Maharashtra, Andhra Pradesh and Karnataka. The nutritional programs running in India focus on pre-school children of age 4 to 6 years old, which means that younger children's nutritional needs are neglected. During the period 2000 to 2006, the rate of food insecurity in India decreased by 0.4% but at the same time the population grew by 6%, which means that many more people were hungry in 2006 than had been in 2000. The interdependency of nutrition with other factors creates a doubt regarding the success of the vertical programs relating to nutrition in India (High level expert group, 2012).

viii.   Water and Sanitation

Supplies of impure water and poor sanitation contribute to a huge burden of communicable diseases in India. A study conducted among the urban poor in Mumbai showed that one third

of morbidity among adults were due to water related illness, while two thirds of morbidity were found in children due to impure water supplies. There was a negative correlation found between the provision of household toilets and prevalence of communicable diseases according to another study conducted among the states of India (High level expert group, 2012).

ix.   Health Expenditure

Out-of-pocket payments for health care in India can often lead into the poverty trap, with more than 75% of health expenditures being borne by households. Funds allotted to health care by the state are low in India, which means that direct patient expenditures are high, and this puts a serious burden on poor households. In India, around 39 million additional people per year fall into poverty due to high health expenditures (Balarajan, Selvaraj & Subramanian, 2011).

x.   Provision of health care

Unregulated commercialization has led to increased health care costs, thus leading to health care that is unaffordable for the poor. The programs targeting health equity are centrally sponsored time bound, and are usually vertically-oriented interventions. Different ministries coordinate these programs, which reduces opportunities for synergies. Further, universal access to health care is compromised as most of these programs target the poor and marginalized groups, while ignoring the middle income group, who also bear a heavy burden of health expenditures (Baru, Acharya & Acharya, 2010).

Per capita allocation of funds by the central government is equal for all the states in India, irrespective of their capacities and needs. However, health expenditure varies considerably from State to State, as individual States also levy their own taxes and can decide how to spend those monies. For example, INR 93 (1.3 euros) per person was spent on health in Bihar in 2004-2005, as compared to INR 630 (9.1 euros) in Himachal Pradesh (Balarajan, Selvaraj & Subramanian, 2011).

There are also disparities in expenditure on health between urban and rural services throughout the country. Financing of urban areas for health care services by the government in 2004-2005 was about 29.2% of all funds allocated to the health sector, while that for rural health care services was only 11.8%. Consequently, urban government hospitals have more beds in comparison to rural hospitals. The quality of care also varies, with more than 1 million rural practitioners who do not have training or a proper license. Other problems facing the rural health sector are the unavailability of health workers due to absenteeism; the unavailability of medicines and supplies; insufficient knowledge and training of health care providers; and lastly poor working conditions (Balarajan, Selvaraj & Subramanian, 2011).

The private health sector is utilized more than the public sector for curative services. This is because of the low proficiency of many health care providers in the public health sector, which forces the poor people to seek care in private health sector. The end result is to either forgo treatment or seek poor quality care (Reddy, Patel, Jha, Paul, Kumar & Dandona, 2011).

There is a burning need for increased public health care funding and for seeking synergies between programs run by different ministries. It is also essential to monitor health outcomes and programs comprehensively in order to be able to move towards health equity in India (Baru, Acharya & Acharya, 2010).

The total expenditure on health in 2008-2009 was 4.13% of the GDP, of which 1.10% was spent on government services, with the rest being spent on the private sector. There was 71.7% of the out of pocket expenditure in India in 2004-2005 which is one of the highest proportions in the world (Balarajan, Selvaraj & Subramanian, 2011).

b) Social Determinants of Health in Maharashtra

Located in western India, Maharashtra is among the richest states in the country. It spreads across an area of 307,713 square kilometers and has a population of 11.23 crores (112.3 million people) (Census 2011).

In spite of Maharashtra contributing significantly to the country's economy, the State still lags behind in terms of poverty alleviation. The poverty level (annual household income less than Rs20,000, or about USD400) in Maharashtra was 31% in 2004-2005, while the national average during the same time period was 28%. Further, the child sex ratio of 913 in Maharashtra is the lowest among all the states in India. This indicates the gender discrimination prevalent due to social and medical practices in Maharashtra. In addition, the scheduled tribes and scheduled castes in Maharashtra fall prey to poor funding by the State within the health sector, which manifests, for example, as poor public sector facilities. However, Maharashtra has a better infant mortality rate than the rest of the country, with 36 deaths per 1000 live births in 2005, as compared to the national average of 58 (Mishra, Duggal, Lingam & Pitre, 2008). According to the government of India Planning Commission, the total percentage of people below the poverty line in Maharashtra was 24.5 in 2009-2010, while it had been 38.2 in 2004-2005. This represents a decline of nearly 14% in just five years (Government of India Planning Commission, 2012).

The situation in the State is therefore mixed, with some SDH successes, but more areas that urgently need to be addressed in order to reduce health inequities.

Details of a number of SDH-related issues are to be found in Annexes 2, 3, and 4. This includes SDH research conducted in Maharashtra, both generally and that conducted specifically by the INDEPTH HDSS at Vadu Rural Health Program, Pune; as well as ongoing SDH work in the State. Readers are strongly encouraged to peruse this information.

a) *A case study of one Primary Health Centre*

Issues at the PHC level have a huge impact on access to health care and, consequently, the inequitable distribution of health. A study was conducted to compare the achievements and challenges in one primary health care centre with the four groups of health care reforms as defined by WHO. These include (i) universal coverage to improve health equity, (ii) people-centered service delivery, (iii) public policy reforms to promote and protect community health, and, (iv) identifying the challenges and achievements of the health care facility. The qualitative and quantitative data were collected from a rural primary care facility in Western Maharashtra over a period of three decades (Vlassoff, Tanner, Weiss & Rao, 2010).

With respect to universal coverage, the PHC centre at Limb, Satara district, provided a range of services to the under privileged/disadvantaged population. The informants visited the centre for basic services like family planning, deliveries, vaccination, sanitation, and health promotion; but for other services they were obliged to visit private doctors. The PHC also fulfills the second reform, of people-centered health systems, whereby the PHC services are available to the populace at convenient times throughout the week. Staff members also visited households to provide health-related information on topics such as malaria and vaccination. Public policies are the third WHO reform. In this centre, there remains a focus on family planning rather than the comprehensive approach to reproductive health, in spite of the decrease in fertility rate. In the recent years, the National Rural Health Mission policies and programs have contributed largely to the PHC through health care infrastructure and resources. The fourth reform, concerning leadership, is evident in the Limb PHC. It has conducted a range of training programs for the students in the surrounding areas. Challenges that the PHC faces are the collection and use of data for planning and patient follow up.

The study concludes that health services can be improved by allocating adequate funds for essential services, supplies and medicines. The local 'Panchayats' government (local self-government at village or town level), for example, can play an important role in reducing user fees. Logistical and supply systems must also be in place to reach outlying communities. Health information systems form a vital tool to monitor the impact of PHC. A major challenge faced would be re-evaluation of PHC priorities as the population is ageing, and the prevalence of non-communicable diseases is increasing. The PHC should base the services based on priority issues

by re-assessment, a practice which is still not in place within the health system (Vlassoff, Tanner, Weiss & Rao, 2010).

b) Inequitable health funding

Structural inequities form a major cause of unequal access to health care in Maharashtra state. The state government covers less than 20% of health expenditures, which means that patients and their families must cover the remaining 80% through out-of-pocket payments. Among all the 28 states in India, Maharashtra stands 26th in public spending on health. The inequity in health among rural and urban region is also evident, as the greatest proportion of public investment in health is spent in urban areas (Mishra, Duggal, Lingam & Pitre, 2008). Thus, health services in the rural areas are particularly under-funded.

A study was conducted in 2005-2006 among 1200 slum residents in Mumbai. It analyzed the impact of spending on household poverty, and it found that for a large proportion of population, maternal health care expenditure was huge. The poorest strata paid through their wages while the less poor paid through their savings. 41% of all maternity-related expenditure were borne by the patient or household. It was therefore argued that policy makers should focus on reducing maternal health costs in order to increase the proportion of institutional deliveries and thereby reduce maternal mortality rates.

The inequities need to be addressed as reducing the out of pocket payment and regulating the informal payments would benefit the poor, enabling them to proper access to health services and reducing poverty. Proper implementation of policies aimed at reducing out-of-pocket payments would significantly improve maternal and neonatal health care by preventing morbidity and mortality due to poverty (Worall, Pace, Bapat, Das, More, Joshi, Pulkki-Brannstrom & Osrin, 2011).

c) Literacy and gender

The literacy rate in Maharashtra stands at 82.9%. However, the rates are not the same for men and women, with a male literacy rate of 89.8% and a female literacy rate of 75.5% (Census 2011). Since the contribution of education to health is enormous, the gender difference in literacy rates is one of the critical reasons for inequities in health within the State.

To understand the correlation of educational status (as a marker of socio-economic status) with cardiovascular mortality, a prospective cohort study was conducted between 1991 and 1997 in Maharashtra in 148,173 persons aged more than 35 years. Participants' educational status was classified into five groups, namely illiterate, primary school, middle school, secondary school and college. 45.3% of the women were found to be illiterate, compared to 17% of the men,

while 15.8% of the men had received secondary level education or more, as compared to 5.9% of the women. An inverse correlation was found between literacy status and all-cause mortality in both men and women. A higher rate of CVD mortality was seen in men with lower socio-economic status, while the relation was not clear in women. Factors like age, tobacco use, body mass index, religion, and mother tongue all influenced the association between education and all-cause mortality.

The study concluded that increases in educational status of the population may prevent 9% of premature male and female deaths in India. Greater literacy rates could increase awareness and prevention of diseases, and compliance to health promotion behaviors would also increase. Policies should therefore be targeted on increasing literacy rates, especially among the lower economic strata, as a means of disease prevention (Pednekar, Gupta & Gupta, 2011).

d) Impact of power imbalances for the urban poor

Power imbalances facing the urban poor act as an important social determinant of health. Health facilities in, for example, Pune and Mumbai offer quality health services, but the slum dwellers do not benefit from these.

A study conducted among female slum dwellers in Mumbai aimed to gain insight into the health service encounters experienced by female slum dwellers. The data were obtained through focus group discussions with members of three social 'protection of health' interventions (these included two health insurance programs and one health service delivery program), and interviews with the providers. The results showed that power imbalances between the health care providers and the slum dwellers force the latter to seek ineffective care from private providers, or to forgo treatment entirely, thereby passively accepting the abuse of health workers. Taking into consideration the low socioeconomic status of the participants, they reported that in the public health care sector, doctors were not motivated, they provided little information on the treatment required, and there were also cases reported of physical and verbal abuse as well as neglect by the doctors. It is essential that these power imbalances are addressed if equity in access to the health services is to be achieved in these settings (Michielsen, John, Sardeshpande & Meulemans, 2011).

e) Poor environmental conditions in informal settlements

Communities residing in urban informal settlements in Mumbai are exposed to a variety of dangerous environmental factors. These include poor sanitation and water supply, poor quality housing, overcrowding, and unsafe neighborhoods.

In Mumbai, a maternal and child health program was conducted. While implementing the program, a vulnerability assessment was done to examine three problem areas, namely whether the environmental conditions in the community were related to maternal and newborn healthcare and outcomes; whether a vulnerability score card was useful to rank health vulnerability; and to determine the future usefulness of the scorecard. In around 48 slum areas in Mumbai, the city Initiative for Newborn Health documented births over two years. While analyzing a sample size of 10,754 births, it was observed that there was a strong association between health vulnerability and environmental conditions such as inadequate access to water, toilets, or electricity; poor quality housing; and unsafe neighborhoods.

It is clear that the poor environmental conditions faced by people residing in the informal settlements of Mumbai urgently need to be improved in order to improve their health (Osrin, Das, Bapat, Alcock, Joshi,& More, 2011) .

f) Health seeking behavior and household practices

Morbidity and mortality are associated indirectly with a number of household practices. With the aim of identifying the magnitude of childhood morbidities, health care seeking behavior, and to explore household practices during illnesses, a study was conducted in the two tribal blocks of Chandrapur District. Morbidity among under-5 children was found to be high, with 67% of the children having one or more of pneumonia, malaria, measles, malnutrition, or diarrhea. It was also noticed that household practices like frequent feeding and providing fluids to the child during illness was poor. Most of the populace preferred to visit private health care providers and traditional faith healers to government clinics during the episodes of illness. This demonstrates that people are doubtful of the efficacy of treatment provided by government health care providers.

Health care seeking approach could be improved in Rural Wardha by adopting the community mobilization approach, wherein needs-based health education is provided to avert child morbidities. The Integrated Management of Childhood Illnesses consists of three components (Improving the skills of health workers; Improving the health system; Household and community participation). The third of these, focusing on household and community participation, should be conducted through community mobilization. Further, by strengthening the role of Anganwadi workers and Accredited Social Health Activists, healthy household practices may be promoted, so that a continuum of care is maintained from household level to hospital. Lastly high child morbidities can be prevented through the promotion of child health and nutrition at the household level, and by improving the health care delivery system at service provision level in Village. This will contribute to bridging the gap in health care, and thereby reducing health inequities (Dongre, Deshmukh & Garg, 2010).

g) Community-based monitoring of rural health services

The National Rural Health Mission is one of the foremost efforts undertaken by the government of India in 2005 to improve health equity. The community health monitoring initiative within it came into existence in 2006, when the ministry of health formed the advisory group on community action that provided support to the Community Health Monitoring. In May 2007 the Phase 1 pilot project was launched in 9 states in India, including in Maharashtra. This included community monitoring of rural health services in the State, and this intervention was evaluated by examining the limitations and achievements it faced, the processes involved, and assessing the credibility of this model.

Health report cards were filled by the health and sanitation committee members. There was a marked increase in ratings of the health services during the rounds. The ratings projected an improvement in the health services from 48% (percentage of improvement of health services) in the first round to 61% in the second round and finally an increase by 5 points to 66% in the third round. There was a steady improvement in the Disease surveillance, postnatal care, untied funds, and immunization, anganwadi (Centres started under the Integrated Child Development Scheme program to reduce child hunger and malnutrition, and to provide basic health care in the rural settings), and adverse outcomes indicators over the rounds. There was a drop in the curative services, PHC services and staff behavior during round three in comparison to the previous rounds. In spite of improvements some areas lagged behind namely utilization of untied funds, disease surveillance and curative services at village level. There was a subjective aspect to utilization of untied funds rather than focused on priority areas.

Overall, the Community Based Monitoring exercise was perceived as a data-generating activity for the government rather than as a community led action. The sustainability of CBM is dependent on both continued community mobilization and its acceptance by health professionals. Positive aspects of community based monitoring were that for first time in Maharashtra, the community can hold the government accountable for the services provided. Through Jan sunwais (public hearings), the community received a platform to voice their issues in the presence of government officials, NGOs and medical professionals. Through this process of empowerment, CBM may be seen as an effective model that targets the core aspects of social determinants of health (Shukla, Scott, & Kakde, 2011).

c) Ongoing work on SDH in Maharashtra

The "Right to health" is a term that is often to be found in writing, but is not always enacted in day to day life. When an issue of livelihood arises, health may be neglected or given lower

priority in some low- or middle-income countries such as India. In Maharashtra, Non-Government Organizations are working towards promoting and emphasizing the Right to health. These initiatives are mostly undertaken to eliminate health inequities and to provide universal access to health care. The organizations work on such issues as community-based monitoring of health services, research, training, and advocating for patients' right to health care.

One such program is the Community-based monitoring program that was initiated as a part of National Rural Health Mission. This program provides an assessment and evaluation of the health care services provided at the public health sector. This is a commendable effort to improve the health care infrastructure with the help of the community. Such programs are needed, as understanding and focusing on the concept of right to health care is one of the core aspects of social determinants of health.

In Maharashtra, a research centre was established by a trust that works for the disadvantaged. The research they have conducted involves socially relevant topics, advocacy projects, and the dissemination of information via databases and publications. They also assess program effectiveness in terms of equity and accessibility. Their research areas include health services, health legislation, patients' rights programs, and women's health. Such centers provide information based on evidence. But this information needs to be taken up by the government to plan for appropriate courses of action. More such centers are needed in Maharashtra, as they provide the groundwork for implementation of effective programs and policies.

Slums in Maharashtra are areas where people face many health risks due to the surrounding environmental conditions in the form of impure water supply and poor sanitation. There are organizations that work for the women and children residing in these areas, with, for example, Maternal and child health programs that work towards reducing disparities in health. Domestic violence, child health, sexual and reproductive health and capacity building are also areas that are being addressed by these organizations. Domestic violence is an issue that is mostly seen among the underprivileged population. Dependency of the women on their husband for income creates an environment wherein the woman may suffer from injustices. Organizations are working on capacity building and livelihood generation of women to bring about a sense of independence among these poor women and to prevent sufferings in the form of violence. They have programs that deal with strengthening the primary health centers and referral systems, nutrition of slum children, and developing financial independence among women. Successes of these organizations have been running a mobile hospital for street children, conducting daycare, and relief efforts during floods.

Work on eliminating stigma, poverty and disease has been the motto of some of the NGOs in Maharashtra. In addition, some NGOs are encouraging grass roots organizations to work on access to healthcare, education, eliminating poverty, and social injustice.

While organizations work on specific issues, there are few organizations in Maharashtra that work on the tenets of health equity per se. Further, those organizations in Maharashtra that are working on social determinants of health such as access to health care, maternal and child health, or social injustice, do so in a segregated, topic-specific manner. There is no comprehensive program engaging on social determinants of health as a core concern in its own right. In addition, even though work on social determinants of health is been conducted in Maharashtra, the term 'social determinants of health' is not used.

See Annex 4 for more details of ongoing work on SDH in Maharashtra State.

d) SDH-related policies

This section presents details of various SDH-relevant policies that have been brought into effect over recent years. They are presented here in chronological order. The section also identifies forthcoming policy reviews in which SDH-related issues may be coming onto the policy agenda.

i. *National Policy on Education (1992)*

The National Policy on Education was passed in the year 1986, and was reviewed and modified in 1992. The main emphasis of the policy on elementary education was universal access and enrolment, the universal retention of children up to 14 years of age, and ensuring quality of education to achieve essential levels of learning for all children. The aim was to rectify social and regional imbalances, to empower women, and to improve and support the disadvantaged and the minorities. The government focused on providing education for all, through free and compulsory elementary education – including for children with special needs; on eliminating illiteracy; ensuring women's equality; and education for the underprivileged society and minorities.

The NPE in 1986 had established a goal of spending 6% of GDP on education. However, even though funds for education increased by 75% from the 9th five year plan (1998-2002) to the 10th five year plan (2002-2007), the total expenditure by central and state government on education in 2004-2005 remained at just 3.49% of GDP.

Within the framework of the National Policy on Education, a number of different schemes have been put in place:

a) "SarvaShikshaAbhiyan" was launched in 2001-2002 to provide elementary education to all children. It addresses the educational needs of children between the ages of 6 to 14 years. The national program for the education of girls at elementary level is an element of the SarvaShikshaAbhiyan. Girl receives additional support in the form of 'girl child friendly' schools and stationary.

b) The Education Guarantee Scheme and alternative innovative education provides access to elementary education for children who live in areas with no schools, and for out-of-school children.

c) A midday meal scheme has been sponsored by the central government since 2004, providing free meals to children residing in government, government aided and local body schools.

d) Kasturba Gandhi Balika Vidyalaya scheme was launched in 2004, in order to set up 750 residential schools at elementary level for girls belonging to SC, ST, OBC and minorities.

e) The national literacy mission works in three areas: (i) eradication of illiteracy from the country; (ii)Supporting SarvaShikshaAbhiyan; and (iii) the provision of non-formal education.

f) The Right to Education Bill was passed in 2005. Under this Bill, according to the constitution of India, all children in the age group 6 to 14 have a fundamental right to gain free and compulsory education. The Bill holds the government accountable to provide this right. One drawback of this policy was that it excluded those aged under 6, and those aged 14 to 18 years, which could lead to an increased incidence of child labor (http://www.mhrd.gov.in/documents).

ii.   State Population Policy (2000)

As per the recommendations of the 1994 International Conference on Population and Development, the government of Maharashtra State passed the State Population Policy to control the fast growing population. It supports a reproductive and child health program (RCH program) that will provide maternal and child health care, antenatal care, neonatal care, care for the health of adolescent girls, prevention of reproductive tract infection, and birth control programs. The main objectives of the policy were to reduce total Fertility Rate (TFR) from 2.5 to 2.1 by 2004; to reduce Infant Mortality & Maternal Mortality; to improve comprehensive health of families; to provide special services to tribal areas and small villages; and to provide services for urban slum areas. The emphasis of this policy is to optimize the utilization of health institutions, infrastructure, and manpower.

Interventions included in the State Population Policy are increasing the availability of health services by strengthening the services and facilities for laparoscopy sterilizations, and facilitating referral services for mothers in remote areas through the Matrusuraksha Vahini

scheme. It also organizes various family welfare and MCH camps which provide maternal and child care, diagnose sexually transmitted diseases and conduct sterilizations.

The policy also included establishment of Referral Units to make special care available to communities in rural, remote and tribal areas. Antenatal care was improved by training untrained birth attendant at PHCs at village level. Health camps in urban areas were also organized for women and adolescents girls. In order to improve the mother and child health at village level, mother and child care centers were established in villages lacking facilities to conduct safe deliveries, and to organize maternal and child protection clinics (http://www.maha-arogya.gov.in/policies/default.htm)

iii. Integrated Child Development Scheme (ongoing since 2002)

This is a scheme sponsored by the central government, under which, services are provided to the pre-school children. This ensures proper growth and development of children in the rural, tribal and slum areas. In the State of Maharashtra, there are 553 ICDS projects, of which 361 projects are in rural areas, 85 projects in tribal areas, and 104 projects in the urban slum areas (http://www.icds.gov.in/)

iv. National Health Policy (2002)

In India, the National Health Policy was originally created in 1983, though it was last reviewed in 2002. One of its core concerns is the urban-rural divide in health: in 2000, the Infant mortality rate in rural areas was 75 per 1000 live births, while that in the urban region was 44 per 1000 live births; and the under-5 mortality in rural areas was 103.7 per 1000, while in urban areas it was 63.1 per 1000 (http://www.mohfw.nic.in).

The NHP of 1983 recognized the unmet needs of public health services, and established more public health institutions at a decentralized level, but the gap still exists: significant deficits exist with regards to Sub Centers, Primary Health Centers, and Community Health Centers. Access to health care was uneven among women, children, and socially disadvantaged sections.

One of the objectives of the National Health Policy (2002) was to decrease the inequities and provide equal access to health care for all sections of society in India. The policy prescribes some effective ways to decrease the health equities. Firstly, in order to reduce health inequities at the regional level, urban and rural level, and between economic classes, it is necessary to increase access to preventive and early stage cure through the primary health sector. For this, the NHP 2002 planned to increase allocation by 55% of the public health investment for primary health sector, with increases of 35% and 10% respectively for the secondary and

tertiary health sectors. The increased outlays for the primary health sectors would be to strengthen the existing facilities and open of additional service outlets.

The NHP 2002 set a series of goals to be achieved by 2000-2015:

- The health sector expenditure would be increased by 6% GDP. Out of this health sector expenditure, 2% GDP would be allotted to public health sector by the year 2010 in order to bridge the gap in health care facilities.
- The state government will commit 7% of their resources of budget to building of health care by 2010 and would gradually increase to 8%.
- The contribution to the public health investment by the central government would increase from 15% to 25% by 2010.
- The utilization of public health facilities would increase from <20% to >75% by 2010. (http://www.mohfw.nic.in).

v. National Rural Health Mission (2005)

The National Rural Health Mission was launched in 2005. The Mission was developed in articulation with the goals and objectives of the National Health Policy and the Population Policy. Provision of accessible, accountable, affordable, equitable, effective and reliable health care, with a focus on the poor and vulnerable sections of the society, form the goals of the mission. Other goals include a reduction in infant mortality rates and maternal mortality rates, universal access to public health services such as water, sanitation and hygiene, immunization, nutrition, promotion of healthy lifestyles, and access to integrated comprehensive health care (http://www.mohfw.nic.in).

vi. National Environmental Policy of India (2006)

This policy emphasizes on conservation of environment resources to obtain better livelihoods rather than on degradation of the resources (http://moef.nic.in/downloads/about-the-ministry/introduction-nep2006e.pdf). It builds on existing policies, for example, the National Forestry Policy (1988), the National Conservation Strategy, the Policy on Environment and Development (1992),the Policy Statement on Abatement of Pollution (1992), the National Agriculture Policy (2000), the National Population Policy (2000), and the National Water Policy (2002).

vii. 11th Five year Plan (2007-2012)

The Planning Commission, part of the government of India, is responsible for formulating the development plans for a period of five years. All the States contribute to the process, which has been ongoing since Indian Independence.
(http://www.educationforallinindia.com/fiveyearplans.html).

The eleventh five year plan is for the years 2007 to 2012. It focuses on 27 targets at the national level which are divided into six categories, as below:

Poverty and Income

In order to decrease poverty the commission proposes to achieve average GDP growth rate of 9 % per year, agricultural GDP growth rate at 4% per year and reduction of poverty by 10 percentage point. The plans for income generation include creating 58 million work opportunities to reduce unemployment in educated to less than 5%, and rise in wages among the unskilled workers to 20%.

Education

For improving the literacy rates and improving the quality of education, the following targets are set by the planning commission:
- To decrease the drop-out rates at elementary level to 20% by 2011-2012
- Setting minimum standards of educational attainment
- Increasing the literacy rate to 85% among people more than 7 years of age
- Decreasing the gender gap in literacy by 10 percentage points by 2011-2012
- Increasing the percentage of people taking higher education to 15%

Health

The following targets are set to improve the overall health:
- A reduction in Infant Mortality Rates to 28 per 1000 live births
- To reduce Maternal Mortality Mate to 1 per 1000 live births
- To decrease the Total Fertility Rate to 2.1 births per women
- By 2009, to provide clean drinking water to all
- To decrease malnutrition among children in the age group of 0-3 by half
- To decrease, by half, anemia among women and girls

Women and Children:

The following targets will improve the health of both women and children:
- By the year 2011-2012, the sex ratio for age groups 0-6 to be raised to 935
- To ensure that for all the government schemes, 33% of direct and indirect beneficiaries are girls and women

Infrastructure:

For improving the infrastructure:

- Electricity will be provided to all the villages and 'Below Poverty Level' households by 2009
- By 2009, road connections will be made for all habitations with a population of 1000 and above
- To provide telephone connection to every village by 2012
- To increase the pace of home construction for the poor by 2016-2017
- Homestead sites to be provided to all the poor by 2012

Environment:

The environmental activities taken up will have the following targets:
- To achieve a 5% increase in forest and tree cover
- By 2011-2012, the WHO standard of air quality will be attained in major cities
- To clean river waters by 2011-2012 by treating urban waste water
- Energy efficiency to be increased by 20% by 2016-2017
  (http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v3)

viii.   *National Urban Sanitation policy (circa 2009):*

The policy issues include poor awareness, social and occupational aspects of sanitation, fragmented institutional roles and responsibilities, lack of integrated city wide approach and reaching the underprivileged.

The goal of this policy is to achieve community driven, completely sanitized, healthy and livable communities. The focuses of this policy is to create awareness, change behavior, prevent open defecation, and to have integrated city wide sanitation
(http://www.urbanindia.nic.in/programme/uwss/urban_uwss.htm).

ix.   *National Health Bill (2009)*

Various health policies in India have covered aspects of SDH, but in 2009 the National Health Bill was passed that focused more explicitly on SDH. However, inept institutional and implementation strategies in India serve as challenges for bringing about action towards health equity (Balarajan, Selvaraj & Subramanian, 2011)

The National Health Bill (2009) was drafted by the Ministry of Health and Family Welfare. The Bill came into existence for the protection and fulfillment of rights pertaining to health, wellbeing, health equity, justice, and all the underlying determinants of health and health care. The primary goal of National Health Bill (2009) was to achieve health for all.

Obligations under the bill are as follows:

- Necessary and appropriate budgetary measures to ensure transparency and equity in the planning and distribution of resources for health
- Measures to address bio-medical determinants, socioeconomic, cultural and environmental determinants of health
- To ensure free and universal access to health care services
- Participation of civil society and marginalized groups to express their needs in planning policies and strategies
- Policies are to be subjected to Health Impact assessment
- Convergence and integration of programs from all the health sectors both vertically and horizontally

Obligations specifically to do with SDH include:
- Equitable distribution of health services and access to health care for all including the vulnerable groups
- To provide freedom from malnutrition and hunger by ensuring access to essential food
- Provision of adequate safe water
- Ensuring sanitation and pollution control
- Access to basic housing

To periodically review policies and strategies addressing health issues based on epidemiological and sociological evidence, to assess the progress related to health in the country (http://mohfw.nic.in/NRHM/Draft_Health_Bill/General/Draft_National_Bill.pdf).

x. *Food Security Bill (2011)*

The National Food Security Act (2011) will include the entire India except for the State of Jammu and Kashmir. Under this act:
- A person has the right to food security. Each Individual will have physical, economic and social access to sufficient and safe food, in terms of a quality and quantity that will ensure a healthy life
- Access to food will be available throughout a person's lifecycle, from pregnancy through to old age
  (http://nac.nic.in/foodsecurity/nfsb_final.pdf)

xi. *National Water Policy (2012)*

India has 4% of the world's renewable water resources, but the distribution of water is uneven throughout the country, with the challenges of droughts and floods severely affecting some areas. The main objective of the policy is to understand the needs of the current situation, and

to develop a framework that can form a system of laws, Institutions etc. The principles of the policy are as follows:

- Considering the human, social and economic needs, the planning, management and development of water resources should be governed by the national perspective
- The allocation of water and its use should be known in order to follow the principle of equity and social justice
- Informed decision-making and good governance are required to fulfill the objectives of equity, social justice and sustainability
- The state is responsible for water being used as a community resource
- The right to life includes access to safe and clean drinking water and sanitation
- Ecological needs need consideration
- All the aspects of water cycles should be considered in the planning process (http://mowr.gov.in/writereaddata/linkimages).

g. Forthcoming SDH-related policies
i. Universal Health Coverage

In October 2010, the Planning Commission of India formed the 'High level expert group for Universal Health coverage'. The High level expert group was responsible for developing a basic structure for the provision of easily accessible and affordable health care to the Indian population. They define the UHC as a means of ensuring equitable access for all Indian citizens, resident in any part of the country, regardless of income level, social status, gender, caste or religion, to affordable, accountable, appropriate health services of assured quality, as well as public health services addressing the wider determinants of health. These will be delivered to individuals and populations, with the government being the guarantor and enabler, although not necessarily the only provider, of health and health services.

The recommendations provided by the High level expert group were based on ten underlying guiding principles, namely: 1) universality, 2) equity, 3) non-exclusion and non-discrimination, 4) comprehensive care, 5) financial protection, 6) protection of patients' rights, 7) consolidated and strengthened public health provisioning, 8) accountability and transparency, 9) community participation, and 10) putting health in people's hand.

The two alternatives provided by the High Level Expert group are as follows,

1. The private providers included in the UHC system will have ensure that at least 75% of outpatient care and 50% of inpatient services are provided to all the citizens under the national health package. The 25% of outpatient care and 50% of inpatient services that

remains would either have to paid individually or through purchased insurance to the private provider.

2. The institutions that will be involved in UHC system will provide only the cashless services in National Health Package. They will not provide any additional services.

The High level expert group identified one major limitation to the package, that there may be a differential in quality of service provided by the private providers, between the UHC beneficiaries and already existing paying patients receiving care from private providers. Therefore, monitoring and regulation of services is essential (High level expert group report on Universal Health coverage for India, 2011). This plan is expected to be included in the 12th five year plan, and will come into action then.

ii. 12th Five year plan

Other forthcoming policies include the 12th Five year plan commission. In 2012-2013, the 12th five year plan will begin. The planning commission is still in the process of drafting the approach paper. This paper describes the major targets, challenges in addressing these targets and to achieve the targets a broader approach is provided. This paper is then approved by the national development council (includes all the chief ministers of the States). Currently a web based process is being used wherein all those who are interested can participate by providing suggestions (http://planning commission.nic.in/plans/comments/inter.htm).

h. SDH-related policies: an analysis

In the year 1983, the first national health policy for India came into existence, a major marker in the considerable progress that has been made in India in terms of development of the health infrastructure and the formulation of various national health programs over the past five decades. This progress has been possible due to the supervision, guidance and contribution provided by various committees, by the Constitution, the planning commission, as well as the ministry of health and family welfare.

Since formulation of the national health policy in 1983, other advances have included the 73rd and 74th constitutional amendments in 1992, National Nutritional Policy in 1993, National Health Policy 2002, National Policy On Indian System Of Medicine And Homeopathy in 2002, Drug Policy in 2002, Introduction of Universal health insurance scheme for the poor in 2003, and the inclusion of health in the common minimum program of the UPA government in 2004 (http://www.searo.who.int/LinkFiles/India_CHP_india.pdf).

The National Health Policy of 1983 addressed the needs of the public health services by establishing a series of Institutions. However, this was not enough, as access to health care

remained a serious issue of inequity. The National Health Policy 2002 understood the significance of this, and it addressed such core social determinants as health care infrastructure and health financing. The primary health care outlets and health expenditure were also increased.

The State Population Policy of 2002 was formulated owing to the continuing growth in the population of India. This policy ensures mother and child health care under the reproductive child health program along with population control. The schemes started under the policy also cater to rural infrastructure needs, for example, digging wells and the construction of toilets. The policy prescription also caters to the needs of the tribal groups, wherein health checkup camps are arranged.

The National Rural Health Mission was started in the year 2005, and this covers most aspects of the social determinants of health. The mission works especially with vulnerable populations, and it strives towards universal access to public health services such as hygiene, sanitation, immunization, nutrition, the promotion of healthy lifestyles, and access to integrated comprehensive services.

The National Health Bill of 2009 covers various social determinants of health. With the aim of health for all, it encompasses aspects such as health equity, justice, and access to health care. For the health of children, the government of India started the Integrated Child Development Scheme for the overall growth and development of children.

Outside the health sector, illiteracy – one of the most important social determinants of health – is dealt with by the National Policy On Education 1992. The policy promises to provide education to all in order to diminish social and regional imbalances. The National Environment Policy, National Water Policy and the National Urban Sanitation Policy all work towards improved environmental conditions, proper water supply and sanitation in the communities.

All these policies are highly applicable to social determinants of health. The question that arises, however, is that in spite of these good policies, health inequity remains an issue in India. One reason is that even though the policies exist, they are often ineffectively implemented. Further, a successful program implemented in one state may not necessarily be successful in other states. One core challenge for India's efforts to attain health equity is implementation of policy recommendations. This is largely dependent on Institutional and Implementation capabilities (Balarajan, Selvaraj &. Subramanian, 2011).

Looking to the future: the Universal Health Coverage Scheme and the Food Security Bill will emphasize access to health care and nutrition. The 11th five year plan will be replaced by the 12[th]five year plan, wherein targets pertaining to poverty, education, Infrastructure and environment will be set to achieve in the next five years. The National Food Security Bill emphasizes the right to food for 90% of the rural and 50% of the urban poor population in India. Under this bill there will be a reform in the distribution of the food in terms of obtaining, storing and distribution of food locally. There will also be reforms in the Integrated Child Development Schemes, with a focus on pregnant and breastfeeding women, and the identification of the malnourished and their treatment. The expansion of the Rashtriya Swasthya Bima Yogana will provide poor workers with health insurance. The right to education for all children, and the protection of assets such as land and forests are further government initiatives which could have a positive impact of health especially of the poor population, but the assessment of these programs is yet to be seen (High level expert group, 2012).

7. Stakeholder interviews

a) Introduction

Social determinants of health vary from country to country. Various factors are responsible for inequity in Health. In Maharashtra, interviews were conducted with ten Informants from various sectors in order to discuss these factors. The informants came from the Health sector, SDH experts, Outside Health Sector, Donors, and NGOs from the State.

The aims of the interviews were:
- To learn about the informants' knowledge and attitude towards SDH
- To identify the most important SDH in Maharashtra and India, as well as the sectors and actors responsible for addressing SDH in Maharashtra
- To identify the gaps in achieving health equity, and the means of addressing them
- To identify the challenges involved in handling equity in health

This section of the report presents material from the Interviews and their thematic analysis projecting the main findings of the Interviews. Each of the 17 core questions are presented, followed by the responses to them from people in the different sectors. A summary of the responses is also provided for each question.

b) Responses to the questions

1. **Different people understand the term 'social determinants of health' in different ways? What does it mean to you? Is it a term that you use at all in your work?**

Summary: According to the respondents, social determinants of health are dependent on social and environmental conditions that an individual is exposed to. They are multi-factorial in nature, and are influenced by social, political, economic and cultural factors. They also include non-medical or non-clinical factors. The term Social determinant of health has been commonly used in India after the Commission on social determinants of health was set up. The term is used most often in research and teaching.

SDH Experts: When asked about what they understand by the term social determinants of health, the respondents perceived SDH as social aspects, social causes, socio cultural causes, differential health outcomes, health inequalities, social epidemiology, public health issues, and social factors affecting health outcomes. These include, among others, food, wealth, income, education, employment, occupation, social stratification factors, caste, gender, and religion. The term 'social determinant of health' is often used, not only in teaching but also in research.

As one of the respondents explained: "*I would say in simple terms it is social causes, socio-cultural causes of ill health or diseases, and if you want more fancy term it can be differential health outcomes …I think everybody uses it quite often*".

NGOs: Majority of the respondents believed that SDH are range of factors such as social, economic, political, cultural or factors outside the classical health sector that influence health. Otherwise put, SDH are the conditions in which a person lives, and how these determine their health outcomes. One respondent said that "*Social determinants of health encompass the entire range of social, economic, cultural and political factors which influence people's health, [and] which influence the health of any individual community or population*". Another respondent said that "*the health inequalities are presented in certain ways by people such as the World Bank, where bar charts are used to describe inequalities that are patterned against the whole spectrum of health concerns*".

According to the respondents, the term social determinant of health is being used consistently since past 5-6 years. The prior term used was 'inter-sectoral approach', but social determinant of health term gained importance after the WHO commission on SDH was set up. One respondent said that, "*It basically means how the conditions that a person or a community is in determines their health status, in the traditional, very traditional limited understanding of health would be, that it is determined by individual or public health visions. So SDH broadens that vision and includes stuff like work conditions, income, wealth status, even education, culture, gender, everything that has direct or indirect purpose which affect health in some way or the other*".

Health Sector: The respondent stated that social determinant of health is multi factorial. It is the social structure, gender and age differences and cultural beliefs. According to the respondent from the health sector, the term is used very frequently in context of formulating strategies, policies and in discussion with students.

Donor: The donor believed that social determinant of health is various other factors that are not directly medical or clinical in nature and is dependent on factors like access to nutrition, livelihood, financial conditions, education, environment, housing, sanitation. The respondent further said that social determinants of health re not merely absence of disease but a range of other factors that emerge from the society. For the respondent, the term Social determinant of health is used quiet often in terms of interventions: the well-being of a person is not complete without addressing these issues.

Outside Health Sector (law, politics and economics): One of the respondent described Social determinant of health as a broad term that is related to the social characteristics, education, caste and infrastructure that a person is exposed to. Another respondent believed that it is factors in a social and environmental setup and factors like kind of education, access, and availability of opportunities, employment, earnings and income. One of the respondent replied that "*I look at the factors within a certain social and environmental set up which have a bearing on people's access to healthcare, so that is what I look at. So these could be the kind of education that they have had, the kind of access they have to certain kind of amenities, the kind of opportunities that they may have in terms of employment and earnings and income, so that's the way I look at it.*"

2. **Which would you identify as the most important SDH in India and Maharashtra? Which sectors are involved in these SDH, and who are the main actors?**

Summary: The respondents believe that there is not one but many social determinants of health that need to be addressed in India. The SDH in India and Maharashtra are the same. However when asked to point out one main SDH, many respondents were of the opinion that poverty was the most important. According to them the income status determines access to many resources such as nutrition, employment, health care etc. In the opinion of the respondents all the sectors such as family welfare, education, agriculture, and industry, were equally responsible for SDH both in India and Maharashtra. The actors responsible for SDH were government, non-governmental organizations, researchers and activists.

SDH expert: The respondents believed that there are many SDH, and it would be difficult to identify one above the rest. However the SDH experts responded that poverty or economic status or wealth would be the major determinant of health, followed by education. One of the respondents stated that economic status or poverty is the most important SDH, and that this camouflages the effects of other factors. This respondent said that "*One, there are many, it's very difficult to identify one, but I would say poverty, gender, economic status or wealth, position, resource, distribution or resource possession, other aspects like in terms of your ethnicity, your location, residence, urban-rural, they determine health. There are many actually, your cultural practices, customs, your beliefs, I guess...I think, anywhere you go, poverty or economic condition, poverty is more negative, but I would say economic condition, economic status would be more overpowering or it is likely to camouflage the influence of other factors*".

The other determinants that also contribute to health in India are resource distribution, resource possession, ethnicity, residence, rural-urban differences, cultural practices, customs and beliefs. One of the respondent described SDH in hierarchical order with poverty being first

followed by education, then caste. There was a belief that the developed states in India had more inequalities than the less developed states, as in these less developed states the better off people have the same quality of care as the poor.

The sectors that the SDH experts think are involved in these SDH are more or less the same. They are ministry of finance, rural development, rural ministry, tribal ministry, ministry of women and child health, child development, health ministry, social justice and empowerment ministry, and social welfare ministry.

The main actors for Social determinants of health in the opinion of SDH experts would be policy makers, planning commission, secretaries, Indian Administrative Service cadres (who hold key positions in the ministry), academicians, NGOs, people's movement (civil society movement) researchers, social scientists, government and public health professionals. One of them thought that the entire system should be responsible for the SDH in the country.

NGO: One of the respondents among the NGOs said that anywhere in the world, economic status and poverty are the leading causes for ill health, as only the rich have good nutrition, good housing, access to clean water, food security, and employment security. In the respondent's opinion, poverty is the biggest single determinant of people's health. A respondent from another NGO felt that wealth, socioeconomic status or poverty lead to inequity. In their opinion other factors are bound to economic status. For example, the caste system significantly influences health, as do agricultural patterns. Some parts in Maharashtra such as Jawahar and Mokhada have irrigation problems, so farmers cannot grow crops all the year round. Another respondent believed that Maharashtra is a complex state which consists of pockets that are pitifully backward in terms of income status, status of public health, health investments, physical access to areas, transportation, nutrition, agricultural distress and lastly livelihood issues. They stated that Maharashtra has pockets that represent any other part of India, but the main issue that the respondent emphasized on was income status in Maharashtra.

The important sectors according to the NGOs were nutrition, food security, water supply, education, livelihood, housing, health sector, sanitation, transport, infrastructure and urban planning. One of the respondent believed that all sectors are responsible inclusive of all departments of governments, agriculture, industry, health, family, welfare, education and Scheduled tribe and caste welfare department.

According to one respondent, people in position of power are the main actors involved in Social determinants of Health. These include ministers, people in position of economic power,

Industries, Capitalist class, middle class and working people. Another respondent said that researchers, activists, health activists, policy planners and academicians are the main actors. Government is a big player and communities, various charities and private sectors are the main drivers behind the SDH in the opinion of another respondent from an NGO.

Health Sector: According to the health sector official, there is no difference between India and Maharashtra, insofar as the social determinants that exist across the world also prevail in Maharashtra and India. According to the respondent, the geography, communication and education are the most important SDH in Maharashtra. The sectors involved in SDH in Maharashtra were health care, water supply, sanitation, education and employment. The main actors involved in SDH according to the respondent were community members, elected representative members, informal leaders, and opinion leaders in the villages.

Donor: According to the donor, the most important SDH in India are livelihood issues, economic wellbeing, education and nutrition. In Maharashtra State, it is poverty. The respondent said that the stark vulnerabilities of lack of access to health care were due to social positioning. There was a perception that urban poor who are actually migrants are marginalized due to lack of employment.

Sectors involved in SDH according to the donor were rural development, social welfare, tribal development, women and child development department, environment and food and civil supplies. The actors involved in SDH according to the donor are government ministries, civil society and corporate sector.

Outside Health Sector: Education was seen by one of the respondents as the most important SDH in India, while the other felt that it is multi-factorial in nature, with poverty being emphasized when the issue of SDH in India is discussed. The other determinants of health responsible for health mentioned by the respondents were lack of housing, lack of access to healthcare and policy changes.

The sectors involved in the opinion of the respondents were education, infrastructure development, women and child development.

3. **What do you think are the main facilitating factors and the main barriers for bringing SDH researchers and decision makers together in India?**

Summary: In India, research evidence is hardly utilized by the policy makers. Even though suggestions are taken by government officials, they are hardly implemented. Possible reasons

for this are the fact that the government either does not understand how to collaborate with researchers, or it is not interested in doing so. There is no platform for the policy makers and researchers for discussions, and in any event, it is the finance department that has the final say in defining the policies, not evidence. When researchers and decision makers do come together, it is usually due to initiatives taken by NGOs.

SDH Experts: One of the experts said, somewhat reluctantly, that SDH researchers and decision makers do work together in India, and in Maharashtra State. For example the SATHI-CEHAT organizations (Organizations in Maharashtra working on SDH issues) are bringing out important issues in Maharashtra State. They are pushing the people's movement in the necessary direction in terms of advocating for SDH in Maharashtra.

When asked about the facilitating factors for this, the expert believes that this is due to the initiative taken by the NGOs. The government is not interested in bringing everyone on the same platform, he said, as there is no initiative taken by the government to do this. The government is outsourcing activities to the NGO. The expert feels that the government's intention is not to work, but rather to hand over the responsibilities to the NGOs. This is a wrong approach, and there is no proactive role from the government or from the academicians who spend most of their time in writing and publishing. The academicians are also not proactive.

The main barrier to collaboration, according to the expert, is that government either does not know the mechanism for collaboration, or they don't have interest in it. There is no flexibility in the government as they have their set of rules and regulations to follow.

In the opinion of another expert, the research is only noticed by internal researchers, while the government either takes no notice of the issues or they have not understood them. According to this expert, there is hardly any interaction between researchers and policy makers. Some government officials are new to the department, and they take a lot of time to understand these issues. The health ministry will consult only the medical professional, and hence they view things only from a medical perspective. Other professionals such as demographers, social epidemiologists and public health professionals are not recognized. This expert further added that the research done by demographers, social epidemiologists, and public health professionals needs to be taken and incorporated in the policies.

NGOs: According to the respondent from the NGO, very little research is being done on SDH. What has been done has focused only on specific individual determinants. In their opinion, policy makers do not want to listen to the critical issues but they only listen to things that suit

them. They assume and want to be told that everything is fine. The input of SDH researchers into policy making in Maharashtra is therefore almost non-existent. There is no structured platform or mechanism to facilitate discussions. The respondent further said that they had collected a great deal of information, and the policy makers could have taken it up and acted upon it, but it did not happen. In the opinion of this respondent, the issues are all politically related. The people in power serve their superiors, and the public is neglected in the process. Even if researchers want to voice the issues, there is no structured platform to do so. The respondent believes that even though there are budgetary and administrative constraints, a proper SDH strategy could come into existence if an annual conference on SDH was held at which the researchers and government could discuss issues. But, according to the respondent, the Government of Maharashtra has no such strategy.

According to another respondent from a different NGO, there are people who are interested in these issues. One of their colleagues is on the Board of the Rajiv Gandhi Jeevandayi Yogana, and it appears that the government is making efforts to organize consultations with NGOs and researchers. However, even though these consultations and meetings take place, the proposed actions remain implicit. Forging partnerships among stakeholders, wherein information will be shared and creating a platform for such discussion will facilitate by bridging this gap. Due to economic collapse, these issues are rising; the government is being forced to talk about these issues. People's opinions are changing and they are raising their voices.

According to the third NGO respondent, there are times when the SDH researchers and policy makers in Maharashtra work together. The main problem is that most of research remains in books and publications, and operationalization of the recommendations has been a consistent failure. The recommendations made by the civil society committees are, nonetheless, still relevant. However, the respondent said that "*Instead of evidence-based policy making, it has always been policy-based evidence making*." The High Level Expert Group report made some excellent recommendations, but there is only some hope that action will be taken towards operationalizing these. The recommendations provided by the High level expert group on social determinants of health included the suggestion that SDH programmes, both in the public and private sectors, should be highly supported by the government, and that dedicated SDH committees should be established at district, state and national levels.

Health Sector: In the opinion of the health sector respondent, the policy makers and researchers are partly working together. There should be more cohesion, however. Researchers mostly go on doing research, publishing it and presenting it at various conferences, and the policy makers do not utilize this research. Material exists, therefore, but is not utilized. The

main barrier to utilization of evidence is acceptance: the evidence exists and the policy makers should accept these facts.

Donor: According to the donor respondent, the policy makers and SDH researchers do not work together. People work in various sectors, but integration or convergence is not seen. Government does not work together with researchers, but rather in a parallel way.

Sector outside health: In the opinion of the respondent, there has recently been coordination between SDH researchers and policy makers, but this did not exist in the past. Many studies have given some clarity on important determinants of health, but the main barrier to using the evidence has been lack of integration between departments or sectors: each sector works independently.

Another respondent replied that the policy makers are not working in tandem. Even if the policy makers and researchers come together, they do not necessarily listen to each other. The respondent said that "*a government policy is a cut piece job in the sense that you probably take pieces from different sections or different stakeholders, try and put it together without even trying to see whether you have stitched it together, so whether that common thread really runs along and binds it together, that does not happen*."

Different sectors have different perspectives, he continued. For example, if the health department wants to make a policy, and they demand for some money from the finance department, the finance department is never convinced. The finance department looks at the issues from their own perspective, and they have the final say. The respondent further added that if one were to analyze all the policies in India over a period of time, the finance department is usually the one who finally ends up taking the decisions.

4. **Do you think that the social determinants of health are seen as politically important here? Please give examples of how /how not, and who is /is not politically interested in them.**

Summary: The social determinants of health are seen as politically important by the majority of the respondents. The social determinants of health gain importance only during certain points in time, for example during elections. Issues are dealt with in an isolated manner by the government, and sensitive issues are hardly addressed. Only a few social determinants of health are addressed.

SDH Experts: According to one SDH expert, poverty is seen as politically important, but only at certain point are efforts made to address them. For example, as far as old age is concerned, during elections discussion on policies, pension policies gain importance for the elderly.

Only a few SDH are popular but not all of them. For example, there is a lack of political will to discuss sensitive issues like gender. The respondent said that "*highly sensitive issues will not be discussed; politicians would like to avoid discussion on such determinants, for example, gender*". At least partly for this reason, the Women's Reservation Bill – which would reserve 1/3rd of all the seats in the loksabha and state legislative assemblies for women – has not been passed in the parliament (http://www.prsindia.org/billtrack/womens-reservation-bill-the-constitution-108th-amendment-bill-2008-45/). In the opinion of this expert, some issues will never be addressed, while some will be often addressed. The other SDH expert concurred with the previous expert that SDH are politically important but is unaware of how much. According to this expert, if the people in political governance in health implementation would be aware of these issues, a lot of progress would occur to address inequity issues.

NGO: A respondent from the NGO believes that SDH are not seen as politically important in India. The SDH gain importance only one month prior to election. A few services are provided at that time, but for five years of their term, the politicians do not remember anything, as health is given a lower priority.

Health Sector: SDH are politically important in India, according to the health sector respondent. Politicians are unaware of SDH but are still entering into these issues by providing some health services, health insurance and so on, to gain popularity. Their intentions indirectly address a few social determinants of health, even if they are unaware that by providing the services they are dealing with SDH.

Donor: The Donor respondent believed that SDH should be politically important but are not seen as such in India. The government tends to take an isolated, not a comprehensive approach towards these issues. People do not see it linked together. The different ministries only focus on their respective sector and not on the inter-linkage between the sectors. In spite of civil society discussing these issues, the government does not want to address them. The respondent said that the mechanism for service delivery is bifurcated and problems are not seen on a holistic basis.

5. **Do you know of any policies that could have implications for the social determinants of health and that are scheduled for review in the next 18 months or so? Details. Who are the main actors involved in these reviews?**

Summary: The Universal Health Coverage Scheme and the Food Security Bills are the upcoming policies. If the Insurance coverage is controlled by the government then SDH will be addressed but if it is outsourced then it becomes difficult to predict the outcome. The politicians, bureaucrats, technocrats and to a certain extent the researchers are involved in the policy reviews in India.

Health Sector: The respondent was not aware of any recent upcoming policy review. Among the existing policy, the important drive was the Sant Gadgebaba Yogana (a health promotion initiative on the importance of cleanliness for good health). According to the respondent, the people involved in policy reviews were politicians, technocrats, and policymakers. The respondent felt that rarely NGOs and other social sectors are involved, and if involved their contribution or their representation is small.

Donor: According to the donor, the Universal Health Care Bill and the Food Security Bill are forthcoming. The respondent stated that during these reviews, the main people involved are the government, which in turn involves stakeholders from the national level institutions, researchers whom they believe can contribute, and the bureaucrats.

SDH Experts: When asked about upcoming policy reviews, the experts mentioned that the Universal Health Coverage Scheme will have a lot of implications on SDH in India. They believed that if the government controlled the insurance package, then SDH will be addressed, but if it is outsourced to insurance agencies then it would be difficult to predict the outcome. In their opinion, universal health coverage will ensure that everybody will be insured.

The people involved in the policy reviews are people from the health ministry, bureaucrats, and certain people who are experts in particular areas. According to one respondent, everybody is involved, as it is a democratic process: nongovernmental agencies, governmental agencies, academicians, activists, and health economists. One of the respondents believed that bureaucrats follow a certain structure, and the researchers who engage in the process do not always have enough, or the right sort of research with them.

6. **Which individuals and institutions support or are likely to support policy change and why? Which individuals and institutions oppose or are likely to oppose any policy change and why?**

Summary: Policy change is supported by anyone, including the government, if it benefits them, while opposition to policy change occurs if interests of the officials are threatened. Support for,

and opposition to policy change is influenced by politics. An example of government-supported policy would be initiation of the SarvaShikshaAbhiyan Scheme (which provides elementary education to all children). The international agencies also play an important role by providing suggestions which are often accepted by the government.

Health Sector: According to the health sector respondent, any involvement or suggestions by international agencies such as UNICEF or WHO are usually accepted by the government, whereas advices from the local people are not taken seriously. The respondent further said that people from other sectors could oppose policy change. In the opinion of the respondent, normally there is no opposition, but there is a policy deadlock if there is neither strong opposition for policy change nor a strong champion for it.

Donor: The Donor believed that political parties, elected representatives, media, and civil society play an important role in influencing and supporting policy change. Civil society has contributed significantly to the existence of National Rural Health Mission and Domestic Violence Bill. The SarvashikshaAbhiyan (Scheme started by the government to provide elementary education to all children), spearheaded by congress, was passed. The next election agenda is the Food Security Bill. The government is motivated by their own possible political gain, otherwise they will not bother with an issue.

As far as opposing a policy change is concerned, some political parties resist change as they think that the status quo has to be maintained. The respondent said that the government is also hesitant in some instances. They are likely to oppose change if their interests are threatened. There exists a conservative section of the government who were against the Domestic Violence Bill being passed, for example, as they do not believe in equality. The respondent said that there should be legislation against child sexual abuse, but the government is not proactive in passing a bill on that due to the conservative element of the government which feels that this concept is western and that it does not happen in Indian families.

SDH Experts: According to one SDH expert, everybody supports policy change, as the government makes policies and this is supposed to be done by a democratic process. The other expert had a similar opinion, that key health officials and ministers support policy change. According to the SDH expert, many people opposed the policy of wearing a helmet when riding a motorcycle being mandatory.

7. **Are you engaged in this policy/these policies through your work, and if so, what information or evidence would you want to have to support your position during the policy review?**

Summary: The different sectors are involved indirectly in policy development through research and programs. The dissemination of the research was through stakeholder meetings, seminars and by collaborating with other organizations.

Health Sector: The respondent answered that during their tenure in the health sector, policies were developed on quality of water supply and water management, as both are important to prevent water borne diseases. This led to regular chlorination of water and massive health education activity was carried out. Good research was also done on the subject.

Donor: The respondent said that their organization was a part of policies through their work. They were a part of discussions on Universal Health Coverage. Prior to the 12th five year plan (2012-2017), they participated in several stakeholder meetings and discussions. At the Mumbai corporation level, in the Mumbai development plan, they were a part of discussions around health facilities and programs for Mumbai Municipal Corporation.

SDH Experts: The respondent was involved in gerontology-based research. They are planning on collecting a data of 2000 people which will help in providing policy leads. The respondent aims to develop a policy on disability by dissemination of information by collaborating with other organizations. The other respondent's Institute engages with the government, and they are connected to the National Health Family Survey. The data collected is used by the state government. They organize state level and national level dissemination seminars in which they present the findings from surveys and highlight the various policy implications. They had also organized one-day meetings in coordination with the health ministry and invited the district level for presentations.

8. **Which important social determinants of health would you say are __not__ being addressed in this country? Why do you think this is?**

Summary: Many respondents believe that poverty and income insecurity have not been addressed adequately in India. The possible reason for it is government's inability of making the conceptual link between health and economic status. Some believe that all SDH are not addressed properly. Citizens of India do not demand health enough, which leads to issues or problems in the community. Health inequity in India exists due to inattention to policies and schemes by the government.

Health Sector: According to the respondent, the provision of funds for healthcare is the main SDH not being addressed. Although it is mentioned in the National Health Policy and National

Rural Health Mission, the budget is still inadequate. Income is also not addressed as people do not have the capacity to pay for the out-of-pocket expenditure for health care. Lastly, in the opinion of the respondent, education is not being adequately addressed.

Donor: The Donor believed that poverty and economic impoverishment are not being addressed. The government feels incapable of doing anything about these, and, according to the respondent, the government just puts patches on the hole. They are unable to link, conceptually, access to healthcare to economic conditions of the people. The respondent believes that there would be no need for such programmes as the National Rural Health Mission if the country had universal and generalized health care system.

NGOs: When asked about the SDH not addressed in India, the respondent replied that none of them are being addressed adequately. The political parties give health a low priority. They easily get elected and citizens do not demand enough for health-related issues. Only a powerful social movement will help to push for and address people's health needs.

According to another respondent, water and sanitation are the major environmental social determinants. Other factors that need to be addressed were housing, infrastructure, transport, food, and nutrition supply. According to this respondent, the current political ideology, while increasing overall economic growth, is also bringing about increases in inequality, and this is detrimental effects on health. Another challenge is the fact that use of disaggregated data can serve to increase the perceived complexity of the issues, potentially leading to uncertainty about an appropriate course of action to tackle the problem.

In the opinion of the third respondent, the SDH not addressed is nutrition security, employment security, and public health facilities. According to this respondent, the government is focusing on involving private sector than on the health outcomes. This means government is focusing on this collaboration rather than on the health outcomes themselves.

SDH Experts: The SDH expert believed that the SDH are being addressed, but the approach taken to address them is different for each one. For instance, the manner in which gender disparities are dealt with is different from other SDH: poverty is given more importance than gender, so it is not being fully addressed. According to another SDH expert, disparities arising from income inequalities and other social disparities, such as education and caste, are not being addressed adequately. In their opinion, government needs to address both income and health disparities.

9. **Can you tell me about any success stories in dealing with social determinants of health that you have observed or taken part in?**

Summary: Different sectors had different success stories. The programs were focused on different areas, such as community health monitoring, blindness prevention program, and upgrading the health posts by forming a link between the community and the hospital. Kerala and Tamil Nadu state policy implementation have been successful, as was the High level expert group report. The sectors are working on different aspects of social determinants of health in their own ways.

Health Sector: The respondent mentioned that the declining deaths due to gastroenteritis and malaria are the success stories so far. The air pollution however is one aspect that's needs attention. The CNG (compressed natural gas as a fuel substitute for vehicles) registration was initiated in places like Delhi and Maharashtra, but it did not fully materialize in Maharashtra and Chronic Obstructive Pulmonary Disease continues to be the leading cause of death in Maharashtra (Jindal, 2012).

Donor: The donor responded that their organization had supported a project on eye care, in which the hospitals conducted eye screening for children to identify early signs of blindness. They realized that vitamin A is also a causative factor and hence they started a program which deals with nutrition education as well as giving nutrition. They also supported a community level initiative to facilitate a linkage between hospital and community to upgrade health posts, along with a community outreach program to bridge the gap between community and health posts through a health workers program with awareness and mobilization of the community.

NGOs: One of the respondents from the NGO said that the community monitoring and planning of health services has been a success. It is an activity going on in Maharashtra for the past five years. It was the first time in the public health system in India that community activists have been given the opportunity to hold public services accountable on a regular basis. It also provided a platform for monitoring the services through preparation of report cards by collecting community-based data, and presenting this data through public platforms like Jan Sunwais (a platform where community discusses issues with the government officials). Through this, community monitoring committees have been able to ensure that the system responds to public needs. The organization is planning to expand to include Integrated Child Development Scheme (ICDS) services and nutritional services. The respondent said that community-based monitoring is a success story that needs to be moved forward to include community-based planning. The respondent from another NGO replied that all their programs were successful. They have a successful partnership with ICDS to address childhood malnutrition. They

rejuvenated the maternal and child health services at the health post in cooperation with the municipal corporation. They collaborated with other NGOs to reduce the incidence of violence against women in Dharavi. They also improved the soft skills and motivated the health workers in the city. One more organization said that their success story was the High Level Expert Group report, to which they provided evidence. They had provided evidence regarding access to healthcare, and had recommended that user fees in public hospital should be abolished. This was considered by the high level expert group.

SDH Expert: During the respondent's tenure at YASHADA(an NGO working on migrants), they had suggested policy changes to the government with regards to pensions, how to incorporate people in unorganized sector, and how to deal with their health issues. The government had provided funds to conduct courses with the help of the International Longevity Centre(a Centre located in Pune that works on policy, advocacy and research on aged people). The respondent is a part of the International longevity Centre through which feedback on policies related to elderly people is given.

According to another expert, the states of Kerala and Tamil Nadu are success stories in themselves. These states are increasing the strength of their policies by improving the social conditions and health across the social groups. Social balance has played a key policy priority in these states. The issue being that the government is seriously concerned in these states about disparities while in other states, the government is only concerned at improving averages.

10. Do you have any recommendations – as general or specific as you like – for addressing the social determinants of health in India?

Summary: The most common recommendation suggested by many respondents is integration and communication between departments in order to hold regular dialogues and prevent duplication of programs. Redistribution of resources is needed to eliminate health inequity. Training on advocacy should be given to those formulating strategies.

Health Sector: The respondent recommended regular dialogue between departments. Other aspects that need attention would be having knowledge about finance or economics in terms of cost-benefit ratios. In an evidence-based era, advocacy should be taught to those formulating strategies.

Donor: According to the Donor respondent, vulnerabilities such as caste and economic impoverishment need to be addressed. Purchasing power should be increased. The other

determinants that need attention are nutrition and education. But foremost poverty needs to be addressed.

NGOs: In the opinion of the respondent, two things need to be done. Firstly people working on various SDH issues such as the civil society organizations, public health professionals, academicians, and NGOs, should collaborate and communicate with each other. They need to pool information, knowledge resources, and launch evidence-based campaigns on SDH, and deal with them in an integrated manner.

Secondly, opinions which are well debated are likely to influence policies. Theses opinions are well suited for policy change. According to this respondent, knowledge exists, but it is not utilized appropriately. According to another respondent, policy makers have tunnel vision. Integration between departments is very much needed. By integrating, departments will have common goals and this will prevent duplication of efforts. Policy makers theoretically address the SDH, but in practicality the efforts are inadequate.

SDH Expert: Redistribution of resources is needed. They suggest that people should not be categorized into groups; while dealing with health, the community should be viewed as a whole instead. This approach should be adopted by the policy makers. According to another expert, income-based and health-based inequalities need to be addressed. In their opinion, income, education and caste disparities affect health.

11. **Do you have available, or can you recommend any relevant publications or datasets that may throw additional light on this topic?**

Summary: The most common publication recommended by many was the WHO report on SDH. Among the other publications were: reports on Inequalities within the slum communities; the Lancet India series; papers by Christopher Gilbert and SV Subramaniam; Treatments of the NFHS city breakdown by Siddharth Agrawal; State of the world children, WHO series of case studies; SATHI report; the NSS report; morbidity rounds; DLEH dataset; NHFS dataset; World health survey; HLEG report; UNDP reports; Blocked by Caste by Sukhdeo Thorat; Richard Wilkinson's book on health inequality; other books by Lisa Berkman, Kawachi, and Julie Cwikel; Michael Marmot's publications on Social Determinants of Health.

Donor: The Commission report on SDH.

NGO: The first respondent mentioned the following publications that will throw light on SDH namely nutritional crisis; health inequities in Maharashtra, community based monitoring. The

second respondent named a few publications and data sets such as NFHS (National family health survey), SRS (Sample Registration System Survey), DLHS (District Level household and facility survey), Inequalities within the slum communities, lancet India series, paper by Christopher Gilbert, Papers from SV Subramaniam, Treatments of the NFHS city breakdown by Siddharth Agrawal, State of the world children, WHO series of case studies and SATHI report. The third respondent mentioned the NSS report, morbidity rounds, DLEH dataset, NHFS dataset, World health survey, HLEG report, WHO report and UNDP report as the datasets and publications that would provide an insight on SDH.

SDH Expert: One of the SDH experts recommended books such as *Blocked by Caste* by SukhdeoThorat, Richard Wilkenson's book on health inequality, Lisa Berkman's book, Kawachi's book and Julie Cwikel's book. Another SDH expert recommended WHO's document on Social Determinants of Health and Michael Marmot's publications on Social Determinants of Health.

12. **To what extent do you think that the work conducted in your sector has an impact (both positive and negative) on human health? Give details.**

Summary: The advocacy sector considers the impact of their work on health to have been positive. They deal with advocacy issues and also conduct research on these issues. They also act as resources whereby the information they collect is available through their website to everyone. They support different campaigns. They work on livelihood issues which has an indirect effect on health.

Sectors outside health: One of the respondent believed that their NGO organization was a resource center that learnt from the experiences of grassroots-level people. They do research to provide feedback to everyone. They are engaged in and support different campaigns. They are into capacity building of advocacy issues through campaigns on food and water, Forest Rights Act and livelihood issues. They are indirectly trying to protect the livelihood of people. The impact of globalization on natural resources and the livelihood of marginalized people is ensured by the organization. They feel there has been no negative impact from their work.

Documentation of various successful stories from different parts of the country has actually helped the community get their rights. Successful stories from different parts of the country where the tribal people actually managed to get their community rights were compiled. A manual and a film were prepared in which steps or measures that need to be taken to claim community rights by the tribal people was explained based on previous success stories. Descriptions about the forms required and the documents needed for filing for community rights was also explained in the manual. Based on these documents, according to the

respondent, claims made by the tribal people cannot now be rejected by the lower level bureaucrats, and will help them gain their community rights. Groups from Jharkhand, Madhya Pradesh, Chattisgarh, Gujarat, Rajasthan are using the work (both manual and films prepared) done by the organization to promote their issues. The respondent believed that the work done in their sector had had no negative impact, just a positive one.

Another respondent from outside the health sector believed that their work has an impact on health and the impact is positive. The research studies undertaken by the Institute of the respondent contributed indirectly to health, as they have contributed to policy development. The positive impact of their work included analysis studies conducted for the ministry, whereby the suggestions provided are incorporated in policies.

13. Do you think that broadly speaking, people in your sector consider the health impact of the work that they do? If so, how? If not, why do you think this is, and would they be open to considering it in future?

Summary: The two respondents had a different opinion in terms of the impact on health of the work conducted by them. The advocacy sector does not view work in terms of health, but rather in terms of livelihood issues, while the respondent from the economics and politics sector did consider the relevance of their work on health.

Sectors outside health: In the opinion of one of the respondent, they felt that they do not look at the health aspect, but rather at the social, structural and environmental determinants. These include ethnicity, and religious background. The organization that the respondent works for is trying to eliminate social and structural barriers through advocacy. Indirectly they are therefore also working towards health by improving livelihoods, and they do, to some extent, consider the health impact of the work they do.

14. Has your organization ever conducted a Health Impact Assessment (similar in principle to an Environmental Impact Assessment, but focused on health) for any of your projects or work? If so, give details. If not, would your organization consider this a useful exercise in future?

Summary: There were opposing responses to this question. The advocacy sector did not conduct and is not going to conduct Health Impact Assessments in future as it is exclusively a resource centers that fights for the rights of people; while the respondent from the economic and politics sector has conducted research into the impact on health of cost of care.

Sectors outside health: The organization that the respondent is working for does not conduct health impact assessments, and they are not considering to do it in future as their focus is on advocacy issues to do with adivasi (tribal) governance, tribal sub plan, and forest rights.

Another respondent from outside the health sector has conducted health Impact assessment, specifically by assessing their ministry's health programs. Studies conducted by this Institute focused on the health of the urban poor in Pune city which is funded by the Population foundation of India; a comprehensive nutrition survey in Maharashtra, funded by UNICEF; and studies on reversing the sex selection of babies, funded by the UNFPA. The other studies that the respondent has conducted concerned regional disparities in Maharashtra which affected its performance in terms of health education; and a study on child sex ratio and sonography centres, that will show the impact of spread of sonography centres on the sex ratio of the children and lastly cost of health care study. The cost of health care study was conducted for the public health sector and it accounted the total cost required for the utilization of health care services from the public health care sector.

15. Does your organization have a specific vision for SDH? If so, how have you tried to engage with the government of this country towards this vision?

Summary: Instead of the term 'social determinants of health', the term 'health inequity' is used. These sectors do have a vision towards eliminating health inequities, however some of them track the pathways that determine health through research, while other organizations support or work towards directly bringing about equity in health. Partnerships with government and NGOs are essential for addressing these issues in these sectors.

NGOs: One of organizations does have a specific vision for Health Inequalities, but they do not use the term 'SDH'. Their vision is focused on the poor sector of the society, and on working towards healthy women and healthy children for a healthy, less wealthy urban world. They believe in participatory approaches and partnerships, either with the community or the public health system. Their work focuses on the Integrated child development scheme, the public health system, and the legal and police system. They are part of forums such as Jan Swasthya Abhiyan, and Dharavi NGO forum, and they work with the government to improve their services and build skills. An example of partnership includes building health posts for vulnerable localities in order to reduce physical access barriers to health care. They also emphasize on behavioral change communication wherein they build local capacity so that the people can effectively communicate with the providers.

The other organization did not have a vision per se, but the respondent mentioned that the research that is conducted tracks the pathways that determine the health status. For example some studies were conducted on the health status of people working in adverse situations and health inequities in Maharashtra state. As far as the research is concerned they work with organizations like WHO, Oxfam, government agencies and the planning commission.

Donor: The Donor respondent said that they integrate and support issues related to SDH through civil society programs. They convince the partner organization to address issues like access to medicines and advocacy. They support a nutrition and health program with a partner organization. They realized that this program would not be successful without addressing livelihood issues, so they started addressing these issues in a comprehensive manner. They have started a health care project in North of India which also supports agricultural reforms, land distribution and innovations in farming. They collaborate with NGOs such as PRADAN, SNEHA, MASUM, SATHI-CEHAT, and Astitva Grameen Vikas Sanstha Solapur to address issues related to SDH.

16. **Has your organization ever funded research and/or the training of researchers in issues relating to the social determinants of health? If so, details. If not, might your organization consider this in future?**

Summary: The donor organizations provide funding to conduct research on problems relating to SDH.

Donor: When asked about the funding on research and training done on issues related to social determinants of health, the respondent said that many research studies have been funded. Some examples of the studies include adolescent health-related issues; a fisher folk study that looked into the nutrition and health impacts among the fisher folk; access to healthcare; the impact of violence on women's access to health care; and utilization of health facilities in the public health system.

17. **Does your organization engage in the policy process on SDH? If so, what information or evidence would you want to have to support the positions you hold?**

Summary: The organizations do engage in policy processes through participating in debates, being on committees, representatives in forums and advisory groups, advocating the issues, and preparing reports, thereby influencing policies.

NGO: The organizations do involve in policy processes. One NGO, for example, was represented on various committees at the state level, and they also a member of the Family Welfare and Child Governance council for the Mumbai city. They were also involved at national level policy planning to a certain extent. The representative was head of the National Neonatology Forum of India, which is a professional body which influences the policy planning for the neonatology care in India.

Another NGO respondent said that they were part of the policy process on various issues. They ran an intervention project which supports violence victims, and were members of committees that provide recommendations and evidence to civil society organizations.

The respondent from another NGO said that they took part in influencing policy formulation, policy initiation, and policy modification. They are actively involved in preparing reports that supports advocacy. They are the member of the advisory group for community action on National rural health mission. They are also involved in debates. They developed the human development report which included assessment of the health sector in terms of health access, differences across social groups and geographical areas. They provide evidence to the government on certain topics, but the respondent believes that it is up to the government to take those recommendations on board. The NGO had provided information to access to health care to the planning commission and in one of the planning commission recommendation was that user fees in public hospitals should be abolished.

c) **Conclusions**

In India the term 'social determinants of health' is used quite often. This term came into existence during last 5 to 6 years, replacing the earlier term, 'inter-sectoral approach'. This term is not only confined to research but is used in education as well. Many respondents believed that social determinants of health were the social characteristics that people are brought up and live in. Many had the understanding that social determinants of health cannot be limited to one factor, but they are multi factorial in nature. Almost all interviewees stated that poverty was the most important SDH in Maharashtra and India. In their opinion poverty influences or camouflages the other determinants. Most of them believed that after poverty, illiteracy and caste were the most important determinants of health. In the opinion of the respondents, all the ministries are equally responsible for SDH, and the main actors playing a role on the issue were the government, researchers, and academicians. In India, very rarely the policy makers and SDH researchers work together. There was a consensus that the main barrier for bringing the SDH researchers and policy makers together was the lack of a platform to discuss issues. According to the majority of the respondents, the facilitating factor for bringing the SDH

researchers and Policy makers was the initiative taken by NGOs and the influence of international agencies.

SDH are seen as politically important in India, although many ministries are not well versed with the term. Only a few social determinants of health currently are felt to be important, however, due to the conservative approach by the government. Among the upcoming policies that could impact health are Universal Health Coverage and the Food Security Bill. The Universal Health Coverage policy intends to provide equal access to health care for all, while the Food Security Bill aims to eliminate malnutrition among the vulnerable population. The key people involved in these policy reviews in India are the government officials, politicians and researchers.

These policy reviews are supported by the International agencies, civil society organization and government who have service in mind. Opposition to the policy reviews occurs, only if the interests of the government are threatened. According to a respondent there is a conservative section in the government who can oppose bills on sensitive issues such as domestic violence and child sex abuse. In the opinion of the respondent the domestic violence bill was passed due to the intervention of the civil society. According to another respondent, the recommendations provided by the High Level Expert group have not been given adequate attention. The National Health Act of 2009 is still pending, and has yet to be passed.

The 10 respondents were all involved in policies either through research in the form of data which creates evidence, or through the programs that they work on. All the SDH are addressed, but none of them adequately, and in particular, poverty. Insufficient funding to the health sector by the state and central government is another dimension that requires attention.

There have been a few successful ventures to address SDH in India, namely the blindness prevention program, reduction in water borne diseases, and the proper implementation of policies in the states of Kerala and Tamil Nadu. There are efforts but in selected SDH, but a comprehensive approach is yet to be seen in India. Redistribution of resources and integration of various departments is recommended. Health cannot be anymore looked at from a medical perspective but in a holistic way, through which the preceding causes of the risks factors that result in ill health can be eliminated.

There is a contrast with regards to the utilization of data. Some respondents replied that the government does not utilize the data while formulating policies, while others stated that the research work conducted by them is utilized by the government. The probable reasons for this contradiction, as suggested by one respondent, could be that (i) there is no formal platform for

discussion to disseminate information, and (ii) the government utilizes the research that they think is important.

Some of the sectors outside health do consider the impact of their work on health and it is observed that the work they are involved in has a positive impact on health. Some respondents also reported conducting health impact assessments in their work, while other sectors outside health are concerned or focused on research and advocacy issues, and do not see their work in terms of health. Hence they do not want to conduct health impact assessments, as their vision is towards different issues.

Some of the organizations in Maharashtra have a vision for SDH, while others are engrossed in research, advocacy and program implementation. A number of NGOs in Maharashtra State are involved in the policy process related to SDH. Their initiatives are commendable, as they are advocating health related issues, and thereby increasing awareness of SDH among both the community and policy makers.

Several donor organizations in Maharashtra initiated some health programs, but they soon realized that their focus on health per se did not include other social determinants that contributed to ill health, so a more comprehensive, multi-sectoral strategy was deemed to be more likely to be effective.

8. Summary and Recommendations

Summary

With its enormous diversity in culture, geography, religion, and economy, India must contend with many different social determinants that lead to health inequities. Poverty, illiteracy, gender, and caste have been identified in this report as perhaps the most critical of all the SDH encountered by the Indian population. The problems associated with these determinants – high infant mortality rates, gender discrimination, malnutrition, among many others – are exacerbated by an unequal distribution and allocation of resources. Such resources could be used to promote access to health care, and thereby address disparities between, for example, urban and rural settings, but this often does not occur. Even though overall poverty levels have decreased over recent years, inequities in health continue to exist between different economic strata, which serves to highlight the importance of improving the financial status of households.

Geographical location itself is an important determinant of health in India, in terms of which State a person may live in. For example, the health care expenditure by the state government in Maharashtra is low, which means that the out-of-pocket payments required for health care continue to present barriers to access for the poor. By comparison, some States have demonstrated considerable success in tackling various social determinants of health. In Kerala, for example, policies to improve literacy have directly brought about reductions in infant mortality.

There are a number of national policies in place that have important implications for SDH. Among others, these include the National Policy On Education (1992), which focused on universal access and good quality of education for all children; the National Rural Health Mission (2005) focused on social determinants of health with the aim of providing affordable, accessible, equitable, effective and reliable health care for vulnerable population; and the 11th Five Year Plan (2007 – 2012), which focuses on all the main social determinants of health, including poverty, education, health, women and children's health, infrastructure, and environment.

The reason for the continuation of health inequities in India generally, and in Maharashtra specifically, may be at least in part testament to deeply rooted nature of the various social determinants; but also to the fact that many of these good policies have been ineffectively or incompletely implemented. Further, funding to support them is often more easily available for urban areas as opposed to rural areas, which means that large sections of the population simply do not receive the services that the policies state that they should have. Another problem is

that the monitoring of programs in relation to health outcomes is often inadequate, which leads to difficulties in assessing both the SDH-related success of the programs; and this weakens subsequent advocacy work for tackling SDH. But one of the most critical problems for effective policy formulation and implementation is the lack of synergy that exists between many of the implementing ministries. Although they are arms of the same government, they often do not work together or consult each other in relation to the policies they are developing. This means that the possible health impact of a policy may not be taken into account, with potentially detrimental effects.

To address some of these implementation gaps, a number of NGOs are working in Maharashtra on different aspects of SDH. Broadly, these organizations work on issues such as health equity, social injustice, education, poverty, and the health of vulnerable populations; but specifically their target areas of concern include, among others: improving access to health care, promoting maternal and neonatal health, prevention of violence towards women and children, child health and nutrition, sexual reproductive health, and livelihood generation.

This work is, to some extent, served by the limited SDH-related training that is going on in the country, and in Maharashtra State. Our curricular review has shown that health inequity is studied as part of many courses, but that it is invariably taught as a component of general public health curricula, and not as a topic in its own right. There is no course or program that focuses specifically on SDH available in Maharashtra State. This means that public health graduates may have some awareness of health inequalities, but not necessarily of health *inequities* – disparities that are unfair and avoidable. This is an important distinction, as recognition of inequities creates a moral imperative to act, and it is essential that public health professionals as well as those working in other sectors, sense this moral imperative and then act upon it.

The states of Kerala and Tamil Nadu are both strengthening their policies aimed at addressing SDH and inequities, in contrast to some other states which are working more towards aggregate, state-wide averages. It is also notable that some of the poorer states in India experience less inequity than the more wealthy states. This is partly because the same quality of health care is provided to both poor and rich people in these poorer states, whereas there is a range of options in the wealthy states, which almost by definition leads to inequities in access to good care.

Recommendations

INTREC has been established with the dual aims of providing SDH-related training for INDEPTH researchers (including from Vadu Health and Demographic Surveillance System in Pune,

Maharashtra), thereby allowing the generation of evidence on associations between social determinants and health outcomes; and to enable the sharing of this information through facilitating links between researchers and decision makers, as well as by ensuring that research findings are presented to decision makers in an actionable, policy-relevant manner.

This report constitutes the needs assessment, or first phase in INTREC's development, and it has addressed three areas of concern: (i) the SDH curricula in Maharashtra, as a baseline for INTREC to build on; (ii) the core SDH issues of concern in the country and in Maharashtra State; and (iii) ongoing SDH-related work in Maharashtra and in India as a whole, both in terms of government policies and in terms of the efforts made non-governmental organizations.

The recommendations below are given with this background in mind, and they are aimed at State governments, national government and NGOs, as well as to INTREC itself.

For the government (national and State) and non-governmental organizations

1. **Enhance efforts aimed at improving the financial status of the family** – Even though both India and Maharashtra have achieved success in reducing overall poverty levels, there persist large disparities in health across the wealth quintiles. Serious attention to improving financial status will go a long way towards improving the health status of people in both India and Maharashtra.

2. **Adopt a more evidence-based approach to policy making** – Policy-making is not always evidence-based, or even evidence-*informed* in India, which means that SDH-related policies may not be as effective as they could be. A pro-active approach by the government to take evidence more into consideration will help to improve both the financial status of the family and their health.

3. **Ensure that health is seen as a multi-sectoral concern** – The most effective way of achieving equity in health in both Maharashtra and India would be through a comprehensive, multi-sectoral approach towards the social determinants of health. All governmental departments, and all NGOs and civil society operations need to consider the health impact of their work. Ongoing communication between ministries and implementing organizations is essential.

4. **Ensure that current SDH policies and legislation are properly implemented** – Existing policies in India cover all aspects of social determinants of health, but serious health inequities in India and Maharashtra still persist. This is largely due to weak implementation of the policies. All efforts must be made to ensure that good policies are operationalized, and that the positive health impacts of these programmes are

properly recorded and used as advocacy material in order to bring about further progress.

5. **Utilize the potential of community mobilization** – Participatory Action Research is an excellent tool for achieving health equity, through its capacity to identify gaps and to provide appropriate solutions. It can enhance social empowerment, increase potential to strengthen local levels of health systems, prioritize the demands of communities, and transform knowledge into action.

6. **Control costs and improve quality of care –** The high out-of-pocket health expenditures in both India and Maharashtra emphasize the need for regulating the private health sector, and improving the public health sector in terms of services provided. These high costs of healthcare can be reduced at the village level with the involvement of the Panchayats (village level governing bodies), who can play a major role in lowering user fees.

7. **Introduce health equity monitoring systems** – For the purpose of monitoring performance and assessment of progress in terms of equitable health outcomes, the introduction of new health equity monitoring system is essential.

8. **Review the process of allocation of resources and health care service delivery** – The process for allocation of resources and service delivery should be reviewed based on balanced financing by the central, state and local government.

9. **Take up recommendations of the High Level Expert Group** – The High Level Expert Group had several recommendations for addressing social determinants of health in India. These included encouraging and expanding successful pilot programs on social determinants of health, and establishing SDH committees at the district, state and national levels respectively. These recommendations should be taken up.

10. **Shift the focus from averages to distribution of health indicators** – The distribution of health indicators across gender and socioeconomic status provides an overview of health inequity in a population. It is important that such disaggregated data are used whenever possible, in order to understand health inequities, and to be able to act against them.

11. **Re-assess PHC priorities** – The ageing population and changes in the burden of disease will require a re-evaluation of PHC priorities to meet the changing needs of the population.

12. **Balance health care funding by the state and central government** – To bring about equity in health across urban areas and rural areas, equity in funding is required

13. **Improve literacy rates among vulnerable population**- There is a higher risk of cardiovascular disease among individuals with low literacy. Moreover health-related behavior is also dependent on the level of education. Hence increased efforts are needed to improve literacy rates among the vulnerable population.

14. **Improve environmental conditions in Informal settlements** – Poor environmental conditions pose a serious overall risk for health. In order to decrease health vulnerabilities, it is necessary to provide pure and adequate water supply, toilets, electricity, and proper housing.

15. **Promote Health Education** – Health education is an important means of improving health seeking behavior and health-related household practices.

For INTREC

16. **Develop and provide a comprehensive educational programme on SDH** – In order to promote an understanding of the need to tackle health inequity in a holistic way, a course on social determinants of health is urgently needed in Maharashtra.

17. **Include classroom-based and online courses in the programme** – An online course would currently be a challenge due to the digital divide between the rural and urban areas with respect to the availability of computers and uneven internet coverage. However, online courses could make an important, and probably increasing contribution to training, as internet connectivity in currently underserved areas improves.The potential should be explored, and any opportunities seized.

18. **Links should be established between INTREC and existing SDH training institutions** – this could include the Ramlingaswami Centre for Social Determinants of Health in Delhi, and would facilitate the development of high quality and locally relevant SDH training for students in Maharashtra State.

19. **Focus on the importance of collaboration between SDH researchers and policy makers** – Researchers need to learn how to formulate their research findings in actionable and accessible ways for policy makers; and policy makers need to understand the importance of using evidence when designing policies. These issues need to be included in the INTREC curriculum, and efforts need to be actively made to bring about proper dialogue and collaboration between the two groups.

20. **INTREC must contribute to raising the profile of SDH in Maharashtra**, through providing training both to INDEPTH scientists and to researchers and students within the public health sphere.

21. **Teach advocacy to those formulating policies and to trainers in public health** – According to the respondents, advocacy must be taught to those formulating strategies as well as to those conducting training in public health is evidence-based policies are to be produced in India.

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Annex 1: SDH-related courses

a) Courses relevant to Social Determinants of Health taught in Maharashtra State

The following courses are all taught in Maharashtra State. This sub-section describes their relevance to Social Determinants of Health.

1) **Introduction to public health**- provides an understanding of "what public health is?" It is important to know the concept of public health as social determinant of health is an aspect of public health. When prevention of diseases is discussed, it includes social determinants of health.

2) **History of public health in India**- Evolution of public health in India will help to gain knowledge on how social determinants of health were dealt in past and the gaps in meeting health equity.

3) **Applied research methods-** For Evidence-based practice research is essential. Research methods impart knowledge on methodology for conducting research which is needed for policy making

4) **Demography-** It is important to understand demography as when health inequity is concerned it takes into consideration factors such as gender disparity in health or inequity in health in terms of age, location etc

5) **Epidemiology-** It is important for assessment and monitoring of disease trends. This information is required for setting health priorities and policy making.

6) **Principles and application of epidemiologic methods in health research-** Essential for understanding the disease patterns. It can provide a greater insight on health inequities**.**

7) **Social Epidemiology-**It is the study of distribution of health and social determinants of health, and it helps understand public health problems and developing research skills on evidence based practices, training on implementation of public health programs. This course can help identify the social determinants of health and implementing the relevant programs.

8) **Indian Society and Advanced epidemiology-** An understanding of Indian society and epidemiology will enable to identify the core issues affecting health in Indian society. It will also provide evidence for policies.

9) **Biostatistics-** Essential for research. It helps in analysis and determine the relationship with variables. This is relevant as the relationship between different social determinants of health and variables cannot be established without analysis.

10) **Analysing qualitative data-** Required For research purposes on social determinants of health.

11) **Infectious diseases-** It is important to know the incidence, prevalence and causality of infectious diseases as it will help in designing programs. For example, water borne disease are prevalent in poor environmental conditions so this information helps in developing policies and designing programs.

12) **Non Communicable diseases**- The burden of non-communicable diseases contributes to the health inequity. Hence an understanding of the topic is needed.

13) **Nutrition-** A public health perspective of nutrition is important as nutrition forms an important social determinant of health.

14) **Principles of nutrition and applied nutrition-** Nutrition is an important social determinant of health.

15) **Community Nutrition-** Food security an important determinant of health

16) **Reproductive Health**- Knowledge on reproductive health is important as it acquaints with reproductive health issues which influences health

17) **Child health and Nutrition-** Child health and nutrition focus on health issues and nutrition which determine the state of their health. Nutrition is an important social determinant of health.

18) **Health of women, children and elderly-** An understanding of health of women, children and elderly is important for identifying the needs of these age groups to bring about equity in health.

19) **Maternal and Child Health**- Important from social determinant of health perspective to identify needs and inequities in maternal and child health

20) **Maternal health, child health and family welfare-** Factors affecting maternal and child health are important. Needs can be identified in terms of social, cultural and economic factors influence on maternal and child health,

21) **Health care of the aged**- disparity in health of aged can provide a view on health inequity in this age group.

22) **Environmental, occupational and urban health-** These concepts are important as defined by WHO , social determinants are the conditions in which a person is born, lives, works and ages, so the external environment's influence on health is a valuable information in terms of health equity.

23) **Principles of environmental health-** Environment conditions impact health, for example, water supply, sanitation form important social determinants of health.

24) **Occupational health-** Occupation related diseases can also be a cause for health inequity, so an in-depth knowledge helps identify gaps.

25) **Health behaviour and counselling-** Behaviour influences health, so while assessing health it is important to take into consideration Health related behaviour. This is essential for policy formulation as well. For example cigarette smoking is seen in Lower Socio Economic Status with high illiteracy rates.

26) **Health promotion education-** Health promotion is needed for bringing about equity in health. Learning about health promotion can bridge the health inequity gap.

27) **Information, education and communication-** For dissemination of information which is required for creating awareness about health issues.

28) **Health education-** Health education is one of the important measures to reduce ill health.

29) **Socio cultural dimension in Health**- The social determinants of health deals with the social, cultural and economic influence on health, so knowledge about the socio cultural dimension of health is essential.

30) **Principles and levels of prevention**- Emphasis on primary prevention of the determinants of health

31) **Management of health service organizations and evaluation-** Social determinant of health also deals with health care infrastructure. Access to health care forms an important aspect of social determinant of health which is dependent on the management of health care organization.

32) **Management of primary health centre-** This course deals with management of primary health centre. Understanding of Resources and access to health care is essential in terms of social determinants of health.

33) **Health care management** The understanding health care delivery settings are vital, as it helps in knowing the access in health care in India. Provides an insight on health care resources and its management.

34) **Primary health care**- Essential to gain knowledge on the primary health care for accessibility, affordability and availability of health care services to the populace.

35) **Program Planning, monitoring and evaluation**- It helps design programs according to the health needs. Monitoring and evaluation of programs is necessary as it estimates the implementation of programs

36) **Health policy, economics and finance-**It identifies policy issues, analysis of issues related to health policy, economics and financing and engages students to undertake analysis with policy issues and make recommendations. Ineffective policies can lead to health inequity

37) **Health systems in India and the world historical perspective/health care system in India** - Important to know about health systems, as social determinants of health deals with access to health care, health care infrastructure and resources

38) **National health programs -** provides an overview on the on-going work in public health.

39) **Sociology-** Study of social factors influencing health.

b) Summary of SDH related courses in Maharashtra

This section gives the names and details of the main training institutions teaching SDH-relevant courses in Maharashtra State.

1) Interdisciplinary School of Health Sciences, University of Pune
(http://www.unipune.ac.in/snc/school_of_health_sciences/default.htm)
Post graduate courses: Masters in Public Health, Masters in Health Sciences, Masters in Health Sciences (Dietetics)

Topics covered in General public health course- Introduction to public health, Demography, Epidemiology, Biostatistics, Infectious diseases, Nutrition, Applied Research Methods, Non Communicable diseases, Health of Women, children and elderly, Health Planning, environmental, occupational and urban health, analyzing qualitative data, health behaviour and counselling, management of health service organizations evaluation, social epidemiology, Indian Society and Advanced epidemiology

2) Symbiosis Institute of Health Sciences, Symbiosis International University
(http://www.sihspune.org/sihspune.org/)
Post graduate courses: MBA in Hospital and Health Care Management

The two-year full time Master's degree in Hospital & Healthcare Management focuses on equipping students with the knowledge and skills required for the management of healthcare organizations. Be it Hospitals, Pharmaceuticals, IT, Insurance, Clinical research, Equipment, Manufacturing, Public healthcare establishment, Consultancies, NGOs, Wellness industry and others as may evolve. The program aims at adopting a synergistic blend of academic knowledge and practical intricacies of the field to create professionals. Adept at identifying practical problems and using time tested and emerging managerial techniques to arrive at the most appropriate solution.

3) OASIS Institute of Health Sciences and Research Centre
(http://www.oasishealthinstitute.org/about_us.html)
Post graduate courses: Post Graduate Diploma in Health care management;Master of Business Administration, Hospital and Health care management; Hospital and health care management

4) Tata Institute of Social Sciences
(http://www.tiss.edu/)
Post graduate courses: Masters in Health Administration; Hospital Administration;Public health in social epidemiology; Public health in health policy, economics and finance.

The M.H.A. (Health) Degree: Combination of a strong taught component and extensive fieldwork would enable learners to develop a sound knowledge-base as well as professional skill enhancement.

The Master of Public Health in Social Epidemiology program aims to train students for a career in public health. The MPH Degree is designed to be completed in two years (4 semesters), but has provision to complete over a

maximum period of 5 years from the date of registration. The program includes taught courses, internships and a research project.

The Master of Health Administration program prepares students to take on managerial positions in the national health programs, the NGO sector and community-based health programs by building capacities in planning, implementing, monitoring and evaluating those programs. It also orients the students to macro issues relevant to health policy and programming in the country.

The Master of Public Health (MPH) in Health Policy, Economics and Finance aims to broaden understanding of policy issues through a multi-disciplinary approach anddevelop critical analysis of issues within health policy, economics and financing andenable students to devise appropriate health policy responses. It would provide the required skills and perspectives to be nurtured and engage health expertise to collectively undertake analytical work for generating policy recommendations related to public health action. This MPH program has a focus on Social Epidemiology and is designed to orient the students towards the conceptual understanding of public health issues and impart research skills required for developing much needed evidence based planning at the population level. Thus, the students will be capable of undertaking meaningful research for supporting public health policy and planning for the effective implementation of public health programs. The students can occupy technical and leadership positions in public health programs after passing out.

Masters in Social Epidemiology- focus on understanding public health problems and developing research skills on evidence based practices, training on implementation of public health programs

Master of public health in health policy, economics and finance- focus on policy issues, analysis of issues related to health policy, economics and financing and engages students to undertake analysis with policy issues and make recommendations

5) Maharashtra University of Health Sciences
(http://www.muhsnashik.com/)
Post graduate courses: MD Community Medicine; Diploma in Public Health (Courses in MD Community medicine offered in all private and public medical colleges affiliated to Maharashtra University of Health Sciences in Maharashtra State)

Courses offered in MD Community Medicine- Health systems in India and the world historical perspective, history of public health in the world, primary health care, health care system in India, socio cultural dimension in Health, principles of educational science and technology, principles and practice of information, education and communication, principles of nutrition and applied nutrition, principles of environmental health, medical entomology, maternal health, child health and family welfare, principles and application of epidemiologic methods in health research, biostatistics, principles of tropical medicine, national health programs, community mental health, occupational health, health care of the aged, health care administration and health management

Diploma in Public Health-environment in community health, history of public health in India, concepts in community health, reports on various health committees, principles and levels of prevention, epidemiology, epidemiology services at primary health centre, nutrition, occupational health, public health administration, sociology, health education, information, education and communication, maternal and child health and Biostatistics.

6) International Institute of Population Sciences

(http://www.iipsindia.org)

Post graduate courses: Diploma in Health Promotion education

7) Institute of Health Management, Pachod

(http://www.ihmp.org/)

Post graduate courses: Management of primary health center; child health and nutrition; reproductive health; program planning, monitoring and evaluation; community development through children and information and education and communication.

Theoretical content related to health and management concepts are taught by faculty from various health and development Institutions.

Annex 2- Key SDH-related literature from Maharashtra State

1. **Improving access to quality care for female slum dwellers in urban, Maharashtra, India: Researching the need for transformative social protection in Health** (Joris Michielsen-Research centre for longitudinal and life course studies, department of sociology, university of Antwerp, Sint Jacobstraat 2, Antwerp B-2000, Belgium)

Objectives of the study

To highlight the health service encounter experience by female slum dwellers in Pune and Mumbai

Methods

Focus group discussions with the members of the 3 SPH interventions and in-depth interviews with providers along with the challenges faced by women while seeking health care formed the data for analysis of this study

Findings

The study showed more subtle reproduction of social inequities. Due to the domination in the medical field, the slum dwellers seek inadequate medical care from private providers or avoid taking the treatment while passively accepting this social injustice.

Recommendations

In order to overcome power imbalances in access to health care, the SPH interventions need to be tailored accordingly

2. **Illiteracy, low education status and cardiovascular mortality in India** (Mangesh S Pednekar, Healissekhsaria Institute for public health, CBD Belapur, Navi Mumbai, Maharashtra-400614, India)

Objectives of the study

To examine the influence of education on cardiovascular disease mortality in India

Methods

During 1991-1997, around 148,173 individuals aged more than or equal to 35 years were selected in Mumbai. They were followed up from 1997 -2003 to ascertain their vital status. The individuals were divided according to their educational status into 5 groups. The groups were Illiterate, primary school, middle school, secondary school, and college. The analysis of data was done using multivariate analysis using cox proportional hazard model. Hazard ratios and 95% CI were also determined

Findings

After 5.5 years of follow up, about 13,261 deaths were observed. Cardiovascular disease was found to be a risk factor across all the educational groups. However there was an inverse relation between literacy and all-cause mortality for both Indian men and women.

Recommendations

In order to achieve a good cardiovascular health, educational status should be improved

3. **A rapid assessment scorecard to identify Informal settlements at higher maternal and child health risk in Mumba**i (David Osrin, UCL centre for International health and development, Institute of child health, London, UK)

Objectives of the study

To examine the association of community environmental characteristics with the maternal and newborn healthcare and outcomes, to examine and develop a triage scorecard to rank the health vulnerabilities of informal settlements, to examine the usefulness of the scorecard for future prioritisation

Methods

Documentation of birth in 48 urban slum areas was done by the city initiative for newborn health for over 2 years. Information was collected on maternal and newborn care and mortality and on household and community environment. There were 3 outcomes chosen namely less than 3 ANC visits, home delivery and neonatal mortality. Logistic regression classification and regression tree analysis was used. To assess the maternal and newborn health risk, a simple triage score card was developed and tested

Findings

The health vulnerabilities were associated with inadequate access to water, toilets, electricity, non-durable housing, hazardous location and rental tenancy

Recommendations

Score card developed can be used in high risk localities. Interventions related to improving living conditions must be implemented.

4. **Inequality in health outcomes in India: The role of caste and religion** (VaniBarooah, school of economics and politics, University of Ulster, Newtownbbey, Northern Ireland)

Objectives of the study

To evaluate the strength of economic and social status in determining the health status of person in India

Methods

Co-Relation between Indians belonging to different groups and differences in degrees of social status was assessed along with its impact on health

Findings

Social gradients were present with regards to a few outcomes. It proved that being at the bottom of the social ladder increases the risk of premature deaths, poor health and lack of treatment and care

Recommendations

Interventions and policies aiming at dissolving this disparity in access to health care should be developed

5. **Raising the profile of participatory action research at the 2010 global symposium on health systems research**. (Rene Loewenson, medical epidemiologist, training and research support centre, EQUINET, Zimbabwe/Eastern and Southern Africa)

Objectives of the study

To summarize and analyse the results of 2 sessions on participatory action research, to analyse the effectiveness of Participatory action research in the form of case studies and challenges faced

Methods

Community based monitoring of health services was conducted in Maharashtra India. In the national rural health mission, 3 monitoring rounds were conducted in the communities during mid-2008 and late 2009 to track, record, report and develop evidence based on the experiences by people with respect to the state of public health services. The report cards were based on the indicators of service guarantees provided within the NRHM implementation framework.

Findings

Quarterly dialogue and public hearings between the state and civil society addressed the issues. The service ratings gradually increased over the 3 rounds indicating increase in utilisation of services and access to health care

Recommendations

A learning network should be launched for the participatory action research to disseminate the results and discuss the issues.

6. **Childhood morbidity, household practices and health care seeking for sick children in a tribal district of Maharashtra, India** (PR Deshmukh, Dr SushilaNayar school of public health, Mahatma Gandhi Institute of Medical Sciences, Sewagram-442102)

Objectives of the study

To identify the burden of childhood morbidities, health care seeking behavior and explore the status of some desired practices at household level during episodes of illness in 2 tribal blocks of Chandrapur district.

Methods

Mixed method design of quantitative and qualitative methods was used in 9 PHCs of Warora and Bhadrawati blocks in Chandrapur district. The total sample was 2700 under 5 children. The health care seeking behaviour and some desired practices at household level were assessed. SPSS 12.0.1 and C sample program of epi_info software package was used for data analysis. For the Focus group discussion data, conventional content analysis was used.

Findings

The prevalence of morbidities among newborns and children was high. There was a high preference for seeking treatment of new born danger signs and childhood morbidities from private health care providers and village level faith healers.

Recommendations

Programs promoting child health and nutrition should be implemented. The village level health care delivery should be improved

7. **Economic inequalities in maternal health care: Prenatal care and skilled birth attendence in India, 1992-2006** (Praveen kumarPathak, International Institute for population sciences Mumbai, Maharashtra India)

Objectives of the study

To assess theeffects of socio economic differences over time towards the utilisation of maternal health care in India

Methods

The data from 3 rounds during 1992 to 2006 were taken from the national family health survey. It was analysed to observe trends and patterns in utilisation of prenatal care in the first trimester with 4 or more ANC visits and Skilled birth attendance among the poor in 3 states of India namely Uttar Pradesh, Maharashtra, and Tamil Nadu. The demand for skilled birth attendance was examined between the public and private health facilities. Role of SES, demographic and cultural factors in maternal care was also assessed. Bivariate analysis, concentration curve, concentration index, logistic regression and multinominal logistic regression models were used.

Findings

Sluggish progress in utilisation of the prenatal care and skilled birth attendence in India. Among the poor, inequalities in Prenatal care and skilled birth attendance were more pronounced.

Recommendations

Inspite of the awareness about public services, poor people utilise the private services. Community mobilisation is needed to promote the utilisation of maternal health services

8. **Inequities in access to health services in India: caste, class and Region** (Rama Baru, centre of social medicine and community health JNU, New Delhi, email id- rbaru2002@yahoo.co.uk)

Objectives of the study

To assess the status of health care delivery in India, To assess the inequities in the availability, accessibility and affordability across geographic, social and economic groups, To assess key health service barriers, To assess the recent efforts to reduce the inequity in health

Methods

For the availability of health services, the data was taken from Central Bureau of Health Intelligence, Ministry of health and family welfare, government of India and the national facility survey report conducted in 2003. The data for demand side analysis was obtained from the 3 rounds of NFHS in 1992-1993, 1995-1996 and 2005-2006. For expenditure the data from 3 rounds of National sample survey organisation from 1986-1987, 1995-1996 and 2004 was used.

Findings

There were interstate variations in the NHRMprogram and gaps in the availability of medical personel.Inspite of the RashtriyaSwasthaBimaYogna for the poor, the economic burden was substantial in all the groups.

Recommendations

Focus of the programs should be on health equity. Health equity should be given priority.

9. **Putting people first: A primary health care success in rural India** (Carol Vlassoff, 6-200 cathcartst, Ottowa, ON, K1N5B9, Canada)

Objectives of the study

To compare the achievements and challenges in one PHC centre according to WHO standards

Methods

Qualitative and quantitative data from a rural primary care facility in western Maharashtra was collected over 3 decades. The analysis of 4 groups of reforms defined by WHO in the context of the achievements and challenges of the study facility.

Findings

The needs of the people are not addressed properly by the health systems in developing countries. Satisfaction with regards to services in familyplanning, safe deliveries, immunization and health promotion was high in the study area.

Recommendations

Even though all the recommended WHO reforms are not in place, adequate primary health care is possible. Utilisation of PHC services is essential for health equity

10. **Maternal and neonatal health expenditure in Mumbai slums(India):a cross sectional study** (Jolene skordis Worrall, UCL Centre For International Health And Development, Institute of child health, 30 Guilford street, London, WC1N1EH, UK)

Objectives of the study

Analysis of spending on maternity care in urban slum communities in Mumbai to better understand the equity of spending and impact of spending on household poverty

Methods

Postpartum interviews were conducted that aided in obtaining expenditure data on maternal care and neonatal care. In 2005-2006, the sample size selected was 1200 slum residents in Mumbai (India). Kakwani Index was used

to calculate the expenditure by SES. The level of catastrophic payment incurred by a household and the prevalence of catastrophic payments in this population was calculated.

Findings

There was a high proportion of respondents who spent catastrophically on care. A higher proportion of informal payments were associated with lower SES. The incidence of catastrophic maternity expenditure was 41% or 15% when controlling for coping strategies.

Recommendations

Better regulation of the informal payments and decreasing the out of pocket payments would be beneficial to the poor.

11. **Community Monitoring of Rural Health Services in Maharashtra** (AbhayShukla-Support for Advocacy and Training to Health Initiatives, Pune)

Objectives of the study

To elaborate the key processes that contributed to the initial success of Community based monitoring in pilot districts of Maharashtra, To discuss the positive and negative aspects of the pilot phase of the study, To explore the potential and limitations of the processes

Methods

Comparison of three datasets comprising the 225 pilot villages. The initiation of Community based monitoring in July-August 2008 formed the first dataset. Data from April 2009 and October to December 2009 were used for the study. The quantitative data were used as well as qualitative data was collected from the Jan sunwais.

Findings

After Analysis, the results showed that the Community based monitoring is effective in assessing the state of health in rural areas during the first and second round however now it is reaching a plateau stage.

Recommendations

Community based monitoring is an example of Community mobilization.Continued efforts by the government for community mobilization are required.Acceptance of the Community based monitoring initiative the health care providers. Involvement of panchayati raj institution is needed for effective implementation of the program

12. **Social evils, poverty and Health** (Dr Rajeev Gupta)

Objectives of the study

To describe social circumstances and evils that leads to poverty and provide suggestions for eliminating social evils

Methods

Literature review

Findings

Social environment and health are interrelated. Health is influenced by multiple social factors.

Recommendations

For equitable and accessible health care, reduction in poverty levels, increasing literacy is needed. Policies to be formulated based on statistics. Target driven approach needed.

13. **Smoking, Educational status and health inequity in India**. (Rajeev Gupta)

Objectives of the study

To evaluate relation between smoking and educational status

Methods

Review of epidemiological studies- Jaipur Heart Watch in rural and urban subjects

Findings

Increased tobacco was seen among illiterate and low educational status subjects, Smoking associated with hypertension and coronary heart disease.

Recommendations

Development in under-privileged can be achieved by good education and health. Behavioral change can be achieved by increased literacy rates

14. **Towards achievement of universal health care in India by 2020:a call to action** (K Srinath Reddy, ksrinath.reddy@phfi.org)

Objectives of the study

To propose the need for integrated national health system in India

Methods

Review of literature

Findings

Strengthening of public health systems to improve quality of life and to decrease the out of pocket payments

Recommendations

India should achieve health for all by 2020. Need for building consensus and dialogue among stakeholders to formulate action and monitor them

15. **Social determinants of Health** (High level expert group)

Objectives of the study

Emphasizes the importance of social determinant of health and actions to be taken

Methods

Review of literature

Findings

Multi-sectoral actions are needed

Recommendations

Planning commission must address Social determinants of health in the 12th Plan

16. **Report on Health Inequities in Maharashtra** (Srijit Mishra, Ravi Duggal, Lakshmi Lingam and Amita Pitre, cehatpun@vsnl.com)

Objectives of the study

To identify the health inequities in Maharashtra

Methods

Review of literature

Findings

Maharashtra has socioeconomic inequities, gender based inequity and inequities in health and health care

Recommendations

Policy recommendations in the form quality health care provided irrespective of SE

Annex 3 – Summaries of INDEPTH comparative articles, including Vadu HDSS

1. **Social Factors and Overweight: evidence from nine Asian INDEPTH Network sites Methods and Findings**
   A. Razzaque et al (Razzaque, A., Nahar, L., Minh, H., Ng, N., Juvekar, S., Ashraf, A., Ahmed, S., &Soonthomthada, K. (2009). Social factors and overweight:evidence from nine asianindepth network sites, methods and findings. *NCD Supplement*, *2*, Retrieved from http://www.globalhealthaction.net/index.php/gha/article/view/1991/2423)

Objectives

The main aim of the study was to examine the distribution of BMI in 9 HDSS sites in 5 Asian countries and investigate the association between social factors and overweight

Methods

It was a cross sectional study, conducted in 9 HDSS sites in Bangladesh, India, Indonesia, Thailand and Vietnam. The methods used for this study was based on the WHO STEP wise approach to surveillance. Step 1 included the surveillance of risk factors and Step 2 included measurements of height, weight, and waist circumference. The sample size from each site was about 2000 men and women in the age group of 25-64 years were selected randomly using the HDSS database. Overweight/Obesity was measured by calculating the Body Mass Index (kg/m^2).

Findings

In all the HDSS sites, almost 10% people were overweight except for Vietnam and Bangladesh. It was observed that as age increases the risk of obesity increases initially. Obesity also increases with increased education. Gender wise, it was observed that women were heavier than men. Another finding being that the people who eat veggies and fruits below the recommended level and those who do high level of physical activity are less heavy than their counterparts

Recommendations

Policies affecting the nutrition and lifestyle should be advocated

2. **Social gradients in self-reported health and well-being among adults aged 50 and over in Pune District, India**. Dr SiddhivinayakHirve et al. (Hirve, S., Juvekar, S., Lele, P., & Agarwal, D. (2010). Social gradients in self-reported health and well-being among adults aged 50 and over in pune district, india. *Global Health Action*, Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2958441/)

Objectives

The impact of age and socioeconomic changes on numerous key domains in self-reported health and well-being amongst older adults was examined.

Methods

A cross sectional survey was conducted among 5,430 adults aged 50 and over. A shortened version of the SAGE questionnaire was used to self-reported health domains like performance, function, disability, quality of life and well-being. Self-reported responses were calibrated using anchoring vignettes in 8 key domains of mobility, self care, pain, cognition, interpersonal relationships sleep/energy, affect and vision, WHO DASI and WHO health scores were calculated to examine for associations with socio-demographic variables.

Findings

It was found that age was a significant factor in the self-reported health. Disability increased with age. However quality of life remained constant within all Socio-demographic factors. Among the uneducated, women without spousal support showed higher level of disability. Performance and functionality were similar in all SES strata.

Recommendations

45% of the older adults will bear the burden of NCD by 2030. Policies makers need to made aware of the interrelated domains like work, retirement benefits, income security, implications on family, health and well-being of the older population

3. **Using the INDEPTH HDSS to build capacity for chronic non-communicable disease risk factor surveillance in low and middle Income countries**. Nawi Ng et al (Ng, N., Minh, H., Juvekar, S., Razzaque, A., Huu Vich, T., Kanungsukkasem, U., Ashraf, A., &Masud, S. (2009). Using the indepthhdss to build capacity for chronic ncd risk factor surveillance in low and middle income countries. *Global Health Action*, *2*, Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20027262)

Objectives

To describe the conceptual framework and research design of the chronic NCD risk factor surveillance in 9 INDEPTH HDSS settings in Asia.To assess the feasibility of conducting the risk factor surveillance in an existing HDSS setting.

Methods

The study was conducted in 9 Asian HDSS sites among adult men and women aged 25 to 64 years in a sample of 250 individuals selected randomly from each gender and 10 year age interval strata from the HDSS sampling frame. With an intention of conducting risk factor surveillance to identify modifiable factors and future patterns of Non communicable diseases, a multisite cross sectional survey was conducted from June to November 2005 with a STEP wise approach. The following is the step wise approach for the NCD risk factor surveillance:

STEP 1- collecting Information using a questionnaire

STEP 2- Taking physical measurements

STEP 3- Taking blood samples for biochemical assessment

The risk factor surveillance included self-reported tobacco use, alcohol use, fruit and vegetable consumption, physical activity patterns and measuring body weight, height, waist circumference and Blood pressure. The quality of data obtained was of superior quality as the data was checked through spot check, recheck, and accuracy and completeness of data was determined by data validation procedures. In order to maintain uniformity of database structure across all 9 sites, EPIDATA software was used. STATA version 10 was the tool used for data analysis

Findings

In this study education level was used as proxy for socioeconomic status. The NCD risk factor burden was consistent to all SES groups. Tobacco consumption in the form of smoking was higher in men while tobacco chewing was evident in women. More women were found to be overweight than their counterparts. Lack of physical activity and lower consumption of fruit and vegetables was a common risk factor evident in all the HDSS sites involved in the study. The response rate of 98% among 18,494 men and women across 9 HDSS sites proves the cost effectiveness or feasibility of conducting a risk factor surveillance study in an existing HDSS setting wherein preliminary information about household exists, hence adding on to the knowledge.

Recommendations

In low and middle income countries, conducting an NCD risk factor surveillance in an existing HDSS is cost effective and time sparing.

4. **Self-reported use of tobacco products in 9 rural INDEPTH HDSS in Asia**. Ali Ashraf et al

(Ashraf, A., Quaiyum, M., Ng, N., Minh, H., Razzaque, A., Ahmed, S., Hadi, A., & Juvekar, S. (2009). Self reported use of tobacco products in 9 rural indepthhdss in asia. *Global Health Action*, *2*, Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2785137/)

Objectives

To compare and to evaluate the prevalence of tobacco use and its associated factors in 9 selected rural sites in 5 Asian countries

Methods

In the study, "self-reported use of tobacco products in rural INDEPTH HDSS in Asia", prevalence of cigarette smoking and smokeless tobacco use was assessed and compared. It also identified demographic factors related to tobacco use in the 9 rural HDSS sites in Asia. The tobacco use among both the gender was examined in 2005 in 9 rural HDSS sites in Asia of the INDEPTH network. A standardized protocol based on WHO STEPS approach to risk factor surveillance was expanded to questions relevant to tobacco use. The association between the demographic factors and tobacco use was analyzed by Multivariable logistic regression.

Findings

Trends/Patterns in tobacco use (smoked or chewed) were similar across all the sites with a few variations. Prevalence of men smoking daily accounted to more than 50% across all the sites whereas very few women smoked on a daily basis. The notable finding was that more woman chew tobacco then men exception being Vadu, India. Initiation of tobacco use in men was found to be in late adolescence. The range of cigarettes smoked was between 3 to 15 cigarettes/day. It was found that men smoke more than women. Lower education levels are associated with tobacco use. In Bangladesh sites, smoking increased with age

Recommendations

Purchasing cigarettes in single sticks should not be allowed as the warnings on the packets go unnoticed and it is an important aspect in regions in India with a low literacy rate

5. **Patterns of alcohol consumption in diverse rural population in the Asian region**. Tran Huu Bich et al (Bich, T., Nga, P., Quang, L., Minh, H., Ng, N., Juvekar, S., Razzaque, A., & Ashraf, A. (2009). Patterns of alcohol consumption in diverse rural populations in the asian region. *Global Health Action*, *2*, Retrieved from http://www.globalhealthaction.net/index.php/gha/article/view/2017/2414)

Objectives

The study investigated the patterns of alcohol consumption along with its association to demographic and cultural factors

Methods

As an extension to the risk factor surveillance, the study "the patterns of alcohol consumption in diverse rural population in the Asian region" was conducted in 9 HDSS sites in 5 Asian countries. The study investigated the patterns of alcohol consumption along with its association to demographic and cultural factors. A sufficient sample size was taken to measure the trends in age and sex groups over time. From the HDSS sampling frame, stratified random sampling method was used to select the sample. The STEP wise standard surveillance form was used to collect information on alcohol consumption and demographic indicators. The STATA software version 10 was used to analyze and merge the date from the HDSS sites involved in the study.

Findings

The alcohol consumption rates were lower in 5 HDSS sites namely 4 in Bangladesh and 1 in Indonesia. Consumption of alcohol was common in men in 2 Vietnam HDSS sites and 1 site in Indonesia. The mean number of drinks per day during the last 7 days and prevalence of at risk were calculated across each site. Filabavi had the highest risk and number of drinks per day. Although drinking prevalence among women was low. In Chililab, low education was associated with risk of drinking than their counterparts. In Vadu, male drinker prevalence was 17.3%, however the prevalence of female drinkers in Vadu was nil.

Recommendations

Qualitative studies need to be conducted to identify the factors influencing and initiating the consumption of alcohol. Health promoting activities and interventions need to be conducted to bring about awareness about harmful effects of alcohol among the populace.

6. **Fruit and Vegetable consumption in rural adult populations in INDEPTH HDSS sites in Asia**. UraiwanKanungsukkasem et al (Kanungsukkasem, U., Ng, N., Minh, H., Razzaque, A., Ashraf, A., Juvekar, S., Masud, S., & Huu, T. (2009). Fruit and vegetable consumption in rural adults population in indepthhdss sites in asia. *Global Health Action*, *2*, Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20027259)

Objectives

To examine the trends in consumption of fruit and vegetable consumptions and prevalence of inadequate fruit and vegetable consumption among the adult population in rural HDSS sites in 5 Asian countries

Methods

It was a cross site study on NCD risk factors conducted in 9 Asian INDEPTH HDSS sites. WHO-STEP wise approach to risk factor surveillance was used. The total sample size was 18,429 adults in the age group 25 to 64 years. The association between socio-demographic factors and inadequate fruit and vegetable consumption was analyzed by multivariate logistic regression analysis.

Findings

The pattern of inadequate fruit and vegetable consumption was similar at all the sites. The percentage of fruit and vegetable consumption in men was 63.5% and 57.5% in women in Chililab HDSS and in entire Vadu population. In Vadu, multivariate logistic regression analysis showed that there was no correlation between old age and low education to the inadequate fruit and vegetable consumption which contradictory to the other sites

Recommendations

Programs based on behavioural changes with regards to fruit and vegetable consumption need to be designed

7. **Prevalence of physical inactivity in 9 Rural HDSS in 5 Asian countries**. Nawi Ng et al (Ng, N., Hakimi, M., Minh, H., Juvekar, S., Razzaque, A., Ashraf, A., Ahmed, S., &Kanungsukkasem, U. (2009). Prevalence of physical inactivity in nine rural indepth health and demographic surveillance systems in five asian countries. *Global Health Action*, *2*, Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2785136)

Objectives

To examine the associated factors along with the level of physical activity in selected rural sites in 5 Asian Countries

Methods

It was a multisite cross sectional study in 9 rural HDSS sites in Bangladesh, India, Indonesia, Thailand and Vietnam. The methodology for this study was adopted from the WHO'sSTEPwise approach to surveillance. The sample included 2000 men and women in the age group of 25 to 64 years that were selected randomly from each site from the existing HDSS sampling frame. The Global physical activity questionnaire version 2 was used to measure physical activity. The total activity was calculated by taking the sum of the time spent in each domain of activities in metabolic equivalent mins per week and was used to determine the level of physical activity. The association between demographic factors and low levels of physical activity was assessed using multivariable logistic regression

Findings

13% of physical inactivity was found in Chililab while the highest level of physical inactivity was found in Filibavi HDSS in Vietnam that accounted for 58%. Inactivity was found in both the gender during leisure time. Physical inactivity was associated with women, old age and highest level of education

Recommendations

Urbanization has an impact on physical activity. Physical activity should be highly promoted among these settings

8. **BP in adult rural INDEPTH population in Asia**. Hoang Van Minh et al. (Minh, H., Soonthornthada, K., Ng, N., Juvekar, S., Razzaque, A., Ashraf, A., Ahmed, S., & Bich, T. (2009). Blood pressure in adult rural indepth population in asia. *Global Health Action*, *2*, Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20027254)

Objectives

To assess the BP patterns among adults in 9 rural populations in 5 Asian countries.

To examine the association of BP and risk factors such as gender, age, education and BMI

Methods

It is a multi-site cross sectional study conducted in 2005 to identify major risk factors for Chronic NCDs in 9 HDSS sites in 5 Asian countries. There were self-reported questions based on risk factors. The height, weight and BP were also measured during the household visits using the WHO STEP wise approach to surveillance protocol.

Findings

In all the sites the mean systolic BP was higher than the optimal level.

High Bp was seen among men in Chililab, Filabavi, Kanchanburi, Thailand, and Vadu. High BP was related to obesity and overweight

Recommendations

Reduced salt consumption programs should be initiated

9. **Clustering of chronic non communicable risk factors among selected Asian Populations: levels and determinants**. Syed Masud Ahmed et al. (Ahmed, S., Abdullahel, H., Razzaque, A., Ashraf, A., Juvekar, S., Ng, N., Kanungsukkasem, U., &Soonthornthada, K. (2009). Clustering of chronic non-communicable disease risk factors among selected asian populations: levels and determinants. *Global Health Action*, *2*, Retrieved from http://www.globalhealthaction.net/index.php/gha/article/view/1986)

Objectives

To explore the clustering of risk factors for the major chronic NCDs and its determinants in 9 HDSS sites of 5 Asian countries

Methods

The data used for this study was pooled dataset of chronic NCD risk factor prevalence survey conducted in 2005 from 9 HDSS sites. It was a cross sectional study. A standardized questionnaire developed by the WHO that consisted of questions on common risk factors such as tobacco use, intake of fruits and vegetables, physical inactivity, BP levels and BMI. The sample included adult respondents selected randomly in the age group 25-64 years residing in 9 rural HDSS sites in Bangladesh, India, Indonesia, Thailand and Vietnam

Findings

Clustering of 3 or more risk factors was evident in more than 70% of the sample population. The clustering of risk factors was related to increasing age, being male, and a higher educational level. The current daily smoker of tobacco in men was less in Vadu in comparison to the other sites. Vadu was second highest in Physical inactivity accounting for 53%. High BP prevalence in Vadu was 24%. The probability of clustering of risk factors was three

times higher in the age group 55-64 years in Vadu. In Vadu, higher the education level would relate to increase in clustering of risk factors

Recommendations

The interventions designed for prevention of chronic NCD should have a comprehensive approach

10. **Ageing and adult health status in 8 lower income countries**. Paul Kowal et al (Kowal, P., Kahn, K., Ng, N., Naidoo, N., Abdullah, S., Bawah, A., Binka, F., &Chuc, N. (2009). Ageing and adult health status in eight lower-income countries: the indepth who-sage collaboration. *Global Health Action*, *2*, Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20959878)

Objectives

To outline the demographic and health characteristics of the participating countries, collaborations and describe the first dataset and its output.

Methods

The data obtained from 2 survey modules of the SAGE study was selected from eight HDSS sites. This data was then merged with the HDSS and site specific and cross site analysis was done on the summary data. A pooled sample of over 46,000 was taken for analysis. The variables taken from the SAGE modules were self reported health, health status, functioning, and well being. The variables considered for analysis from the HDSS were age, sex, marital status, education, Socioeconomic status, and household size

Findings

Through the HDSS data, people aged more than 50 years was over 15% of the current global population. It is predicted that this value will reach 23% by 2030. It was noticed that the Asian HDSS had a higher burden of NCD than their African counterparts.

Recommendations

These types of datasets provide evidences or rationales for policymakers in order to plan interventions

11. **Health inequalities among older men and women in Africa and Asia: evidence from 8 HDSS sites in the INDEPTH SAGE study**. Nawi Ng et al (Nawi, N., Kowal, P., Kahn, K., Naidoo, N., Abdullah, S., Bagah, A., Binka, F., &Chuc, N. (2010). Health inequalities among older men and women in africa and asia: evidence from eight health and demographic surveillance system sites in the indepth who-sage study. *Global Health Action*, *3*, Retrieved from http://www.globalhealthaction.net/index.php/gha/article/view/5420)

Objectives

To determine the extent to which demographic and socio-economic factors impact upon measures of health in older populations in Africa and Asia.

To examine sex differences in health and further explain how these differences can be attributed to demographic and socio-economic determinants

Methods

During 2006-2007, 46,269 individuals more than 50years old from 8 HDSS sites within the INDEPTH network were studied. An abbreviated version of the WHO study on global AGEing and adult health (SAGE) wave 1 instrument was used. This data was linked to the HDSS. Among the 8 health domains based on self reported health, health score was calculated. Multivariable regression and post regression decomposition were used to measure and explain the health gaps among men and women.

Findings

Self reported health was better in men in comparison to women. The health scores varied with different domains in each country. Households, socioeconomic levels, age, education levels, marital status, and living arrangements

affected the health scores in men by 82% and in women by 71% in South Africa and Kenya. Among the 4 health domains identified as contributing the most to the overall score, vision predominated at Vadu site. Interpersonal relations contributed a lot to the health score in Vadu than other domains. The differences in health score between the lowest and highest age groups were less in Vadu

Recommendations

Identification of other determinants for the variation in health status among men and women in order to develop interventional programs that will bridge these gaps

Annex 4 – On-going work on SDH in Maharashtra

This section presents the on-going work on social determinants of health in Maharashtra State. It includes the details of work done by some of the main Non-Governmental Organizations operating in the State.

1. **SUPPORT FOR ADVOCACY AND TRAINING TO HEALTH INITIATIVES (SATHI)** (http://www.sathicehat.org/)

Support for advocacy and training to health Initiatives (SATHI) was established on 1st April 2005 as an action center for the Anusandhan trust with headquarters based in Pune. The team of SATHI comprises mostly of experienced people previously working for CEHAT organization (see (2) below).

Goals
SATHI focuses on the right to health and health care. They work towards eliminating health inequities, developing a path that supports the health of people and their environment. They work on the tenet that health care is a human right which should be universally accessible. The following are the goals of SATHI:
*   To eliminate health inequities
*   To adopt a developmental path which is conducive to both people and environment
*   To achieve universal access to health care

Core areas of work
SATHI team works in the following areas,
*   Health initiatives in collaboration with organizations
*   Advocacy on primary health care and health rights
*   Providing training on rights related to health and health initiatives
*   Research on advocacy

Current Projects
- *Arogya Hakka SahayogPrakalp*: This project will consolidate health rights activities and community based health capacities in Maharashtra along with developing health rights partnerships, implementing community based monitoring, supporting advocacy on patients' rights and providing support to ASHAs.
- *Community based monitoring of health services under National Rural Health Mission*: This project is working on identifying the community needs and monitoring of the health services provided at the PHCs.

Accomplishment and Future aim
Over 10 years, SATHI has expanded its focus area to research, advocacy and training. SATHI is striving for a community that realizes its right to health and healthcare.

2. **CENTRE FOR ENQUIRY INTO HEALTH AND ALLIED THEMES (CEHAT)** (http://www.cehat.org/go/)

The Anusandhan trust developed the Centre For Enquiry Into Health And Allied Themes. The organization works for under-privileged populace, with respect to strengthening health movements and focusing on health and health care.

Aim
The aim of CEHAT is to conduct research and action in order to uplift the disadvantaged people.

Core Areas of Work
CEHAT primarily work in the following domains:
- Research on socially relevant topics and undertake advocacy projects that encompass social and political aspects of health
- Formulation of services and programs to show the effectiveness of services in terms of accessibility and equity
- Disperse information via databases and publications

Research Areas of CEHAT
- *Health services and financing*

It focuses on the determinants of health, health issues, health seeking behavior, health services infrastructure, health expenditure and financing.
- *Health legislation and patients' rights program*

This program focuses on social control and regulation towards attaining right to health and health care.
- *Women's Health*

Socio cultural dimensions of health and health care with respect to gender. Investigation and treatment of Psycho-social human rights and violence

Future aim
CEHAT works towards realization of the community about their rights related to health and health care (http://www.cehat.org/go/).

3. **Society for Nutrition, Education And Health Action (SNEHA)** http://www.snehamumbai.org/

This is a Non-Governmental Organization that is focused on the needs of women residing in slum areas and their children in Mumbai. Their main goal is to improve the health of this underprivileged populace.

Mission of SNEHA
SNEHA impacts quality of care and influence urban health policies through innovative solutions to problems in nutrition, education and health in urban communities. It builds sustainable and replicable models of intervention and partnerships that empower women to change their lives and those around them.

Core Areas of work
The core areas of work of SNEHA are on
- Maternal and neonatal Health
- Prevention of violence against women and children
- Child Health and Nutrition
- Sexual and Reproductive Health
- Livelihood Generation
- Capacity Building

SNEHA caters to vulnerable population like women, slum communities and children. They work in partnership with Municipal Corporation, Integrated child development scheme, and private practitioners in Mumbai to improve the maternal and child health care. Behaviour change is a very vital aspect of all the programs implemented by SNEHA.

Ongoing Projects
- *Maternal and Newborn Health Program:*The aim of the program was to increase strengthen the Primary health centers and referral systems in order to improve the maternal and neonatal care. At the conclusion of the program, it was observed that Maternal and neonatal health indicators improved as early registration and uptake of JananiSurakshaYogana (a scheme started by the government of India to encourage Institutional deliveries whereby the eligible women is paid Rs 500-600 for her delivery) had increased.
- *Child Health and Nutrition Program:*This program focuses on the nutrition of the children in the slum dwelling areas of Mumbai. The program is based on the Integrated Child Development Scheme.
- *Quintessentially SNEHA Program:*This program was based on creating financial independence among women from the slum areas by developing skills that will help gain employment

Accomplishments and Future aims
Among the many achievements of SNEHA, a few were running a hospital on wheels for street children, conducting a daycare which was later handed over to the community and lastly its involvement in relief efforts during the floods in Mumbai in 2005.

4. **Comprehensive Rural Health Project (CRHP)** (http://www.crhpjamkhed.org/node)

The Comprehensive Rural Health Project was founded in 1970 by Dr Arole in Jamkhed, Maharashtra. For the past 40 years, Comprehensive Rural Health Project has been focusing on the rural poor and the marginalized population to eliminate Health-related injustices. The primary aim of CRHP is to empower the community through community mobilization and capacity building in order to eliminate stigma, poverty and disease among the women and marginalized groups of the community.

Aim
CRHP activities are focused on empowerment of the people to eradicate any injustices by means of improving health and development of the community as a whole.

Ongoing Projects:
- *Village Health Worker:* The Village Health worker who is a representative of the village is selected by the Villagers. CRHP team works with the village health worker who not only mobilizes the community for better hygiene, sanitation, family planning, but also forms groups like the farmers club, women self-help groups and adolescent boys and girls program. These activities help identify the gaps in healthcare.
- *Farmers club:* In order to understand the power of unity, the farmers club was formed. The landowners and landless people collaborate to break down social barriers and help in conducting health surveys in the community.
- *Women self Help groups:* The self-help groups are a circle of women who work on money savings, loans and support microenterprises in the community.
- *Adolescent boys and girls program:* Adolescent girls programs emphasizes on the issues like importance of girl child, early marriages etc. The adolescent boys programs were introduced to

strengthen the girls program as equality cannot be achieved without the involvement of both the gender.
- *Mobile Health Team:* The mobile health team works with the Village health worker in complicated matters and collects vital statistics for monitoring purposes.
- *Hospital:* The hospital at Jamkhed is a 50 bed hospital that uses a sliding fee structure for the underprivileged population.

Accomplishments and Future aims
In Jamkhed, since 1970 the Infant mortality rate has declined from 176 per 1000 births to 23 per 1000 births. The fertility rate has also declined, as families are adopting family planning methods. In future, CRHP plans to review programs and also track and monitor health indicators, development and socioeconomic status to assess the impact of their work).

5. **NarottamSekhsekaria Foundation** (http://www.nsfoundation.co.in/)

The NarottamSekhsekaria Foundation is among the leading funding agencies in India that aims at empowering grassroots level NGOs.

Goal
The goal of Sekhsekaria foundation is to provide access to health care and education to the community. This will create opportunities for livelihood, and will lead to progress of India.

Core area of work
The foundation emphasizes on elevating health care and bringing quality services to the marginalized population. Sekhsekaria Foundation core areas of work include the following:
- To help students and professionals through the scholarship program and fellowship programs.
- To support programs on mass learning and community health initiatives.
- To support and strengthen the public health infrastructure and Institutions.
- Encourage charitable causes
- To partner with organizations/ Programs that focus on capacity building and training for employment

Accomplishments and future aims
The foundation was successful in identifying and supporting development enterprises. The foundation continues to improve quality of life for the socially and economically disadvantaged community.

6. **OXFAM** (http://www.oxfamindia.org/)

Oxfam India is a rights-based organization that works for eliminating poverty and social injustice in the society. It forms a link between NGOs with local, national advocacy groups and policy makers in India.

Mission of group/Institution
The mission of Oxfam is to work in partnership with research Institutes, Universities, mass movements and NGOs in order to link poor people with their organizations at sub national, national, regional and global Institutions that will eventually influence their lives and livelihoods. They will support people who will volunteer to help Oxfam India fulfill its mission.

Core area of work
Oxfam is working in areas such as economic justice, gender justice, essential services for the poor, and humanitarian response and disaster risk reduction.

Accomplishment and future aims
The future aim of Oxfam is to create an equal and just society.

7. **Maharashtra Association of Anthropological Sciences (MAAS)** (http://maas.org.in/)

MAAS is a non-governmental, academic voluntary organization located in Pune in the Western part of Maharashtra.

Mission
The mission of MAAS is to apply knowledge of theory and methods in anthropological sciences for development of the community to address issues of poverty, disease, deprivation, and exploitation. It also integrates science, technology and education to eliminate disparities related to gender, ethnic groups and regions.

Core area of work:
MAAS has three different Centres, namely
- Centre For Tribal And Rural Development: This Centre conducts studies and interventions in tribal areas. Their main foci are reproductive and child health, environment awareness campaigns, and development of rural infrastructure
- Centre for Health Research And Development: Research is conducted by a multidisciplinary team that mainly focuses on health-related issues like reproductive health, HIV, Leprosy and Tuberculosis
- Centre For Documentation And Dissemination: This Centre disseminates information on research studies.

Accomplishment and Future aims
MAAS envisions development of the society through a holistic approach by application of theories and methods in anthropological sciences.

8. **MahilaSarvangeenUtkarshMandal(MASUM)**(http://www.masum-india.org/html/about.html)

MASUM is an NGO that was founded by Dr Ramesh Awasthi and ManishaGupte in 1987, in the Purandar block of Pune district.

Goals
Work of MASUM is based on the following goals:
- To increase self-reliance in women and awareness about their rights
- To empower women in the society
- To nurture women by providing vocational training and credit facilities to women for self-employment purposes
- To prevent casteism, sexism, chauvinism etc, to create a progressive society

Core areas of work
The activities at MASUM are based on a feminist approach with an emphasis on Human Rights. MASUM is currently working on the following projects,

- Women's right to life free of violence and discrimination
- Women's right to health
- Women's right to economic empowerment
- Women's right to political participation
- Rights of children, adolescents and youth

9. Foundation For Research in Community Health (FRCH)

Founded in 1975, FRCH is an NGO working in the field of health care. It conducts studies in rural India to identify the factors affecting health and health related services.

Core areas of work
FRCH works on the following themes:
- Developing strategies for effective and affordable health care
- Conducting research and analysis on programs and policies implemented in India
- Identifying the gaps in health care
- Affect the country health policy reforms
- Developing a network for health and health care on a national level

Accomplishments
FRCH has a resource and training center at Parinche that trains health workers across the country.

10. National Centre for Advocacy Studies (NCAS) (http://www.ncasindia.org/people-centred-advocacy)

National Centre For Advocacy Studies strives for a just and humane society. They collaborate with movements in India, South Asia, and Global South. It is a resource centre that supports and strengthens rights based advocacy to empower people.

Core areas of work
NCAS conducts research on social justice issues. They are involved in capacity building activities in the form of workshops, conferences and consultations. They advocate through media on social justice issues and support any campaigns on advocacy issues.

Accomplishment
It forms a bridge between people and perspectives that leads to progress in human rights and social justice.