Primary Health Care in India: Coverage and Quality Issues

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Abstract

India's achievements in the field of health have been less than satisfactory and the burden of disease among the Indian population remains high. Infant and child mortality and morbidity and maternal mortality and morbidity affect millions of children and women. Infectious diseases such as malaria and especially TB are reemerging as epidemics, and there is the growing specter of HIV/AIDS. Many of these illnesses and deaths can be prevented and/or treated cost-effectively with primary health care services provided by the public health system. An extensive primary health care infrastructure provided by the government exists in India. Yet, it is inadequate in terms of coverage of the population, especially in rural areas, and grossly underutilized because of the dismal quality of health care provided. In most public health centers which provide primary health care services, drugs and equipments are missing or in short supply, there is shortage of staff and the system is characterized by endemic absenteeism on the part of medical personnel due to lack of oversight and control.

As a result most people in India, even the poor, choose expensive health care services provided by the largely unregulated private sector. Not only do the poor face the double burden of poverty and ill-health, the financial burden of ill health can push even the non-poor into poverty. On the other hand, population health is instrumental for both poverty reduction and for economic growth, two important developmental goals. India spends less than 1% of its GDP on public health, which is grossly inadequate. Public investment in health, and in particular in primary health care, needs to be much higher to achieve health targets, to reduce poverty and to raise the rate of economic growth. Moreover, the health system needs to be reformed to ensure efficient and effective delivery of good quality health services.

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Primary Health Care in India: Coverage and Quality Issues

1. Introduction

Health is an important dimension of well-being. While a country's per capita income is one indicator of how well it is doing, health and educational outcomes are equally, if not more important indicators of a country's level of development. In the last two decades, India has grown at an average rate of five percent. Literacy rates have also been steadily climbing. Overall literacy rate was 65.3 percent in 2001, and the absolute number of illiterates actually fell for the first time historically by 32 million (Census of India, 2001). Health wise, however, the picture for India is bleak. Even though life expectancy has risen for both males and females and overall life expectancy at birth in India is now 63.3 years, in general, health outcomes are far from satisfactory. There are very high levels of premature mortality and widespread morbidity in the population, especially in the younger age-groups, among women and among the aged. Millions of children die due to infectious diseases and childhood illnesses and pregnancy and child birth related complications take a toll on many women. In 2000, the infant mortality rate was 68 per 1000 live births and under-five mortality was 96 per 1000 live births. The Indian maternal mortality rate of 407 per 100,000 live births was one of the highest in the world, higher even than many sub-Saharan African countries. Another bitter statistic is the lopsided sex-ratio of 927 females per 1000 males, largely due to discrimination against girls and women in nutrition and medical care. Malaria and Tuberculosis claim more than 500,000 lives every year. Added to this is the specter of AIDS: there are an estimated 4 million HIV positive cases in India and their numbers are expected to grow rapidly.

From Health to Economy

Improvement in people's health is important for the attainment of the twin developmental goals of poverty reduction and economic growth. In poor countries, poverty status and health status are closely related. The poor are more likely to be suffering from ill-health than the non-poor. Thus, a reduction in poverty can be expected

to lead to improved population health. Economic growth and population health are also positively correlated. However, in the case of the relationship between economic growth and health status of population, it is difficult to identify the direction of causality – whether higher economic growth leads to better population health or vice-versa. New research has sought to analyze the effects of better population health on economic growth as well as on people's economic status. Using panel data for Indian states, Gupta and Mitra (2004) find that economic growth is positively correlated to health status and that the relationship is bi-directional: higher economic growth improves health status and better health status enhances economic growth. Moreover, they find that while economic growth reduces poverty, health status is also significantly important for poverty to fall. Bhargava et al (2001) show that better health raises wages in low income countries. Initial health status of populations also seems to be a strong conditioning factor of the economic growth of countries: better initial population health status increases a country's growth rate of income (Bloom et al, 2004).[1]

The current very high burden of disease in India is a barrier to its economic growth and poverty reduction efforts. With the threats posed by HIV/AIDS, TB and other infectious diseases, we can expect the future burden of disease to increase dramatically. If unchecked, it has the potential of wiping out past development achievements as has been the case in many sub-Saharan African countries. The costs of investing in people's health is much less compared to the cost of paying inadequate attention to it. Following upon the adoption of the Millennium Development Goals at the Millennium Summit of the United Nations in September 2000, the Report of the Commission on Macroeconomics and Health in 2001 (CMH 2001) argued that poor health was one of the most important

[1] Studies show that when the concept of 'full income' – change in GDP per capita plus the change in the value of mortality decline – is used to rank countries in terms of economic performance, the picture changes dramatically, both at a point in time and over time.

determinants of poverty and urged the governments of developing nations to upscale their health systems and commit to the improving and investing in their people's health.[2]

Public Provision of Primary Health Care

People value health for its own sake, and improvement in people's health is both a developmental goal and a measure of successful development. Health is also instrumental in generating higher incomes as it increases people's productivity. Rising income and education levels as well as spread of literacy in the population, greater understanding and practice of sanitation and hygiene, clean water supply, greater availability of food, technological advance, all contribute to the growing health of nations. Public health measures to combat infectious diseases further reduce the vulnerability of populations to illnesses. Additionally, adequate, appropriate and easily accessible health care is essential to protect, maintain and enhance people's health. Good health is now recognized as a fundamental human right. Most governments of the world accept the provision of health care as part of the state's social contract with its citizens and seek to attenuate the link between a person's access to health care and his/her ability to pay.

In India, where many people earn their livelihood using physical power, being healthy is often a question of survival – ill-health can push people into extreme poverty from which they may never recover. Moreover, much of the burden of the disease in India comprises of infant and child mortality and morbidity, maternal mortality and morbidity, infectious diseases and micronutrient deficiencies. Many of these are amenable to low-cost interventions and preventative actions that can be undertaken via the public health system, which makes up the bulk of the health infrastructure in the country. Within the public health system, primary health care services provided through sub-centers and primary health care centers in rural areas and urban health posts and family welfare

[2] With greater global interdependence between nations, the likelihood of diseases spreading from one part of the world to another is also higher. The CMH 2001 therefore also urged high income countries to help relieve developing countries of their heavy burden of disease and ill-health with sustained and well-targeted supply of resources.

centers in urban areas, are generally the populations' first point of contact with any health care when seeking medical help. As the bulk of the Indian population lives in rural areas, provision of essential health services through sub-centers and primary health care centers is crucial in determining any access to health care services for most people, especially women and children.

In this paper, we describe the primary health care scenario in India, focusing on coverage and quality of health care provided. Section 2 provides a description of India's achievements in health. In Section 3, the state of primary health care in India in terms of coverage and quality is discussed. Section 4 looks at some ways of improving the primary health care system and Section 5 concludes.

2. Health Achievements and Outcomes

Table 1 shows selected health indicators over time for India as a whole. All health indicators register an improvement over time. Nevertheless, their levels are still unacceptable. Even though infant mortality rates have declined from a high of 110 in 1981 to 68 in 2000, it is still very high compared to other countries at comparable or even lower levels of development. Total fertility rates are 3.2 for India as a whole, still above replacement levels. Overall life expectancy at birth has doubled for both males and females between 1941-1951 and 2000: from 32.4 years to 63.3 years for males and from 31.7 years to 65.6 years for females. Although female life expectancy is slightly higher than male life expectancy, achievements along other dimensions of women's health in India are very low. India has one of the highest maternal mortality rates in the world, registering as many as 407 maternal deaths per 100,000 live births in 2000.

The average figures for India hide a great deal of variation in the performance of different states, which are on different points along the health transition path. Health transition has three components: demographic which involves lowering of mortality and fertility rates and an aging population; epidemiological wherein the pattern of diseases prevalent in the population changes from communicable diseases to non-communicable

diseases such as the chronic diseases of adulthood; and social whereby people develop better ability to self-manage their health and have better knowledge and expectations from the health system. While Kerala, Maharashtra and Tamil Nadu are much further along in the health transition trajectory, the densely populated states of Orissa, West Bengal, Bihar, Rajasthan, Madhya Pradesh and Uttar Pradesh are still in the early part, with the other states falling in between.

Higher incomes and higher literacy rates are positively related to health levels. Simple regressions of state level infant mortality rates against state per capita incomes and state literacy rates show that higher per capita incomes and higher literacy rates are negatively correlated with infant mortality rates.[3] However, literacy rates seem to be more important than per capita incomes. Similar results are obtained when state poverty rates are used instead of state per capita incomes – lower poverty rates are associated with lower infant mortality rates; the coefficient on literacy rates becomes significant and larger in magnitude.[4]

Apart from variations due to income and education, health status in India varies systematically between rural-urban location, membership of scheduled caste and tribe, and by age and gender. All health indicators for rural areas compare unfavorably with those for urban areas; people belonging to scheduled castes and tribes have much poorer health compared to those who belong to the upper castes; and children and women in India suffer grossly from the burden of disease and ill-health. Morbidity among women and children is endemic in India.

Infant and Under Five Child Mortality and Morbidity

Over time, infant mortality has been falling in India, though it is still high at 68 per 1000 live births. Table 2 provides infant mortality rates for states of India and over time. In 2001, Kerala had the lowest infant mortality rate of 16 per 1000 live births; Orissa on the other end had as many as 98 infant deaths per 1000 live births. The densely

[3] Regression results not shown here are available from the authors upon request.
[4] The regression results have to be interpreted with a great deal of caution as they are only meant to be illustrative of correlations and not to establish causality.

populated states of Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh all had infant mortality rates above 80. Though, infant mortality rates have fallen for all states between 1961 and 2001, the rate of decline has been higher in the twenty years between 1981 and 2001 compared to the two decades between 1961and 1981. The decline has been uneven across Indian states. More disturbingly, in some states, namely Tamil Nadu, Andhra Pradesh and Haryana, infant mortality rates have actually increased between 1981 and 2001.

As can be seen in Table 4, there is great variation in infant and child mortality by rural-urban location and by membership into caste/tribe. Infant mortality is much higher for all castes in rural areas compared to urban areas, and within each geographical location, scheduled castes and tribes and other backward classes experience much higher infant mortality rates compared to the upper castes. Similar patterns obtain for child mortality which is much higher for all castes in rural areas compared to urban areas and scheduled castes, tribes and other backward classes experience higher child mortality rates compared to upper castes.

Infant and child health depend on household resources, the quantity and quality of care received in the household, nutrition and medical care. There is widespread morbidity in the younger age groups in India. Nearly half of all children in India are underweight, with 45.5 percent chronically undernourished which leads to stunting and 15.5 percent are severely undernourished which leads to wasting. Only 42 percent of children have received all vaccinations in India with 14 percent having received none at all as Table 5 shows. With endemic and chronic undernourishment, any medical care received by these children, however, becomes ineffective.

Maternal Mortality and Morbidity

India has one of the highest rates of maternal mortality[5] in the world. In 2000, it was 407 per 100,000 live births which meant that one in every 200 pregnancies ended in

[5] Maternal mortality is defined as annual number of deaths of women from pregnancy related causes when pregnant or within 42 days of termination of pregnancy, per 100,000 live births.

maternal death. By contrast, the average maternal mortality rate in Latin America and Caribbean countries is 190, in East Asia and Pacific countries it is 140 and for industrialized countries it is 12 (UNICEF Statistics, 2003).[6] Most maternal deaths occur due to complications in child birth caused by infection, hemorrhage, eclampsia, obstructed labor, abortion and anemia. In India, only 42 percent of all births are attended by trained medical personnel; 30 percent of all births are attended by a doctor, 11 percent by a trained nurse, more than one-thirds (35 percent) of births are attended by a traditional midwife and as many as nearly a quarter (22 percent) are attended by friends or relatives (NFHS II). Most births take place in extremely unhygienic conditions and for most women, especially in rural areas, there is no recourse to referral to appropriate health facility in case of emergencies.

Furthermore, most maternal deaths in India occur between the ages of 15-29 years which are the prime childbearing year and maternal deaths are more likely among the rural and the poor women. Most rural women receive almost no prenatal care. According to the NFHS II, the average figure for India for women who received at least one prenatal check up in the three years preceding the survey was only 65 percent. In Uttar Pradesh and Bihar, only 35 percent of women received any prenatal check up, in Rajasthan 47.5 percent and in Madhya Pradesh 61 percent.

Nearly half of all women between the ages 15-49 in India suffer from anemia. Table 6 shows the percentage of women in 1998-1999 who had any anemia by rural-urban location and by caste/tribe membership. Rural women and women belonging to scheduled castes and tribes were more likely to suffer from anemia, but even among upper caste women the prevalence of anemia was as high as 47.6 percent. Recent research shows that there is wide prevalence of postnatal depression among women: as many as one in five women suffer from depression after giving birth (Patel et al, 2004). Mothers suffering from postnatal depression have higher levels of disability and most remain ill for six months or more after termination of pregnancy. Moreover, mother's

[6] The data is for 1995.

poor mental health has severe consequences for growth and development among infants and children.

Malaria in India

Malaria, a vector-borne disease transmitted by the female anopheles mosquito, is the second most fatal communicable disease in the world. According to the World Health Report 1999, there are nearly 300 million cases of malaria incidence per year around the world with 1 million cases resulting in death.

Before 1953, when the National Malaria Control Programme was launched in India, the incidence of malaria per year in the country was 75 million cases, of which 800,000 cases resulted in deaths. The National Malaria Control Programme was reshaped into the National Malaria Eradication Programme in 1958, and by 1965, efforts to control malaria largely using DDT were successful: in 1965 there were 100,000 malaria cases in India and no fatality was reported. However, from the 1970s onwards, malaria has reemerged as an epidemic in India and has become a major public health problem. In 2001, 2.01 million malaria cases were reported and around the same number were reported in 2000 (Economic Survey, 2002-3).

Among the plasmodia that cause malaria, the P. Falciparum is the more virulent variety. In 1998, there were 2.09 million malaria cases reported of which 910,000 were Falciparum. According to a National Malaria Eradication Report, the incidence of Falciparum malaria cases in India increased from 9.34 percent in 1972 to nearly 36 percent in 1995, while the incidence of P. Vivax, the less virulent plasmodium, fell to 60-70 percent. Not only is there greater incidence of Falciparum, there is evidence of increased resistance of this parasite to chloroquine and other anti-malarial drugs. One of the major strategies to control the spread of malaria in the early years was spraying of insecticides such as DDT, HCH and Malathion. However, insecticides have now become less effective in malaria control due to development of vector resistance and reduced human resistance to chemical control. While in the early years, malaria was mainly a disease of the rural areas, with greater urbanization, malaria is now a disease that occurs

in urban areas and other non-rural ecological environments. When malaria reemerged in the 1970s, the worst affected states in India were Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh, Orissa, Karnataka and Pondicherry. Now, however, it is an epidemic in nearly all the regions of India with the poorer and more densely populated states of Uttar Pradesh, Bihar and West Bengal accounting for a very high proportion of malaria incidence (Sharma, 2003).

Tuberculosis in India

India accounts for almost a quarter of all Tuberculosis (TB) cases in the world – every year, on an average, 2 million TB cases occur in the country. TB causes more deaths annually in India – 421,000 deaths per year – than malaria, hepatitis, meningitis, nutritional deficiencies, sexually transmitted diseases, leprosy, and tropical diseases combined, which cause around 258,000 deaths per year (World Health Report 1999). TB is a 100 percent curable disease and requires relatively simple and inexpensive interventions. Yet, it is a major killer in India due to a combination of factors, not only medical and public health related, but also societal and economic.

Tuberculosis control programs have existed in India for nearly four decades. The National Tuberculosis Programme (NTP) was launched in 1962. However, the NTP was not able to achieve any significant control over TB even after decades of implementation. The reasons for the relative failure of the NTP were: over-reliance on X-rays for diagnosis, use of non-standard treatment regimens, low rates of treatment completion and lack of any systematic records of treatment outcomes. The NTP was ineffective also due to poor program implementation and inadequate funds. The Revised National Tuberculosis Control Programme (RNTCP) was launched in 1993 wherein the use of the DOTS strategy recommended by the World Health Organization was undertaken. The DOTS (Directly Observed Treatment, Short Course) uses microscopic sputum diagnosis and prescribes a uniform treatment regimen; it emphasizes the use of quality drugs, directly observed treatment, and strict record-keeping of treatment outcomes. RNTCP was implemented in pilot areas in 1993 and then expanded to more areas in 1998. Under the RNTCP, the sub-district level is the administrative unit and one microscopy center

where sputum diagnostics is done, catering to three primary health centers or 100,000 persons is provided. The RNTCP is one of the largest public health programs anywhere in the world and has been a successful one. Whereas interventions before 1993 cured three out of ten TB patients, by 2001 with the RNTCP, the curative success rate had risen to eight of ten TB cases. However, the emergence of HIV infection has complicated the TB scenario in India. People with HIV are more likely to actively develop TB and it is estimated that in India, 7 percent of those infected with HIV also develop TB (Narayan et al, 2003).

AIDS in India

AIDS, if unchecked, can supplant TB and Malaria as the number one cause of death in India. HIV is a lentivirus. This means that it acts slowly over time and people with HIV can live many years in good health before they develop full-blown AIDS; in the meantime, they can infect many people. HIV is also a retrovirus, i.e. that it converts its genetic material from RNA to DNA when it inserts itself into a host's cell where it multiplies very rapidly. Due to both these factors and the fact that the main channel of HIV/AIDS being sexual transmission, adults in their productive years are most vulnerable to HIV/AIDS. According to the National AIDS Control Organization, there are currently 4 million people, or 3.8 persons per 1000, in India living with HIV/AIDS. The national prevalence level is estimated to be 0.8 percent of the population (Kadiyala and Barnett, 2004). Both these numbers are considered to be very conservative and gross underestimates, yet in themselves they are very large numbers. They are sufficient cause for action now and for overcoming the culture of denial and stigma that currently informs official attitudes towards HIV/AIDS.

Burden of Disease in India and Other Countries: A Comparison

The World Health Organization (WHO) publishes the burden of disease for different countries. The goal of measuring the burden of disease is to quantify the burden imposed by ill-health in general and specific diseases in particular on a country's population. Table 7 provides WHO estimates for 1998 for the burden of disease for India

for selected diseases. It also provides estimates for high income as well as low/middle income countries by way of comparison with India. Half the burden of disease for India is accounted for communicable diseases, maternal and perinatal conditions and nutritional deficiencies. The share of communicable diseases alone is one fifth in the overall burden of disease. Moreover, the burden of disease in India for almost all diseases is higher compared to both high income and other low/middle income countries. It is lower only for non-communicable diseases, which forms a large part of the burden of disease in high income countries. Over time, however, with aging populations and decline in communicable diseases, the share of non-communicable diseases can only be expected to grow which will further strain the already constrained health system in India.

3. Primary Health Care: Coverage and Quality

On the 12th of September, 1978, the International Conference on Primary Health Care being held in Alma-Ata, in the erstwhile USSR, adopted the 'Declaration of Alma-Ata' which proclaimed a positive view of health as complete physical, mental and social well being and a fundamental human right. The declaration envisaged primary health care as the first level of contact between individuals and families with their country's health system. According to this declaration, primary health care was to have its basis in the community it served; the notion of primary health care included maternal and child care including family planning, immunization against major infectious diseases, prevention and control of locally endemic diseases, appropriate treatment of common diseases and injuries, provision of essential drugs, education concerning prevailing health problems and ways to deal with them, provision of adequate food and nutrition and adequate supply of clean water. The Declaration of Alma-Ata set a goal for the year 2000 for all the people of the world to achieve a level of health such as to enable them to lead socially and economically productive lives. India, along with other countries, ratified the declaration.

Primary Health Care in India: Coverage

India has a large public health care system. Primary health care is provided through a network of sub-centers, primary health care centers, community health centers and district hospitals. In rural areas, most primary health care is provided either by sub-centers or primary health care centers; whereas in urban areas it is provided via health posts and family welfare centers.

For the provision of health centers, the Indian government has set the following targets:

- One sub-center with one trained female and one trained male health worker per 5,000 persons in the plains and 3,000 persons in hilly and tribal areas.
- One Primary Health Center (PHC) staffed by a medical officer and other paramedical staff per 30,000 persons in the plains and 20,000 persons in hilly, tribal and backward areas. Each PHC is to supervise six sub-centers.
- One community health center (CHC) or upgraded PHC with 30 beds and other basic facilities per 80,000-120,000 persons. The CHC is to operate as a referral center for up to four PHCs.

In 1998, there were 137,006 sub-centers, 23,179 PHCs and 2,913 CHCs in India. There were 665,639 hospital beds or 6.9 hospital beds per 10,000 persons. Based on data collected by the National Family Health Survey II 1998-99 (NFHS II), in terms of population coverage, only 13 percent of rural residents had access to a primary health center, 33 percent had access to a sub-center, 9.6 percent had access to a hospital and 28.3 percent had access to a dispensary or clinic.

One of the major determinants of the use of a health care facility, when it exists, is the distance to the location of the facility from the user's home. This is especially true for women and children in rural areas. Table 8 disaggregates access in terms of distance to the nearest sub-center, primary health center, hospital and dispensary or clinic. Overall, 47.4 percent villages had access to any health facility within village and 38.9 percent villages had access to any facility within less than five kilometers. According to the

Human Development Report India 1999, only 22 percent of villages had a sub-center within their village based on the population criteria. Coverage varies across Indian states. In Bihar, Orissa and Punjab, the proportion of villages with sub-centers was as low as 5-6 percent; less than 30 percent of villages had access to a primary health care center or hospital in Bihar, Gujarat and Madhya Pradesh. There was better coverage quantitatively in Tamil Nadu with 50 percent villages having access, and in Maharashtra and Haryana, between 30-36 percent. Tamil Nadu, Kerala and Karnataka also had greater access to a hospital within five kilometers of the place of residence (Human Development Report India, 1999).

Apart from the number of health centers providing primary health care, the quantity of primary health care also depends on the number of doctors, nurses and other medical personnel positioned in these centers. The public health system in India faces a critical problem of staff shortage, especially in rural areas, as medical personnel in general do not want to locate to rural and remote areas. As a result many posts in sub-centers and PHCs in rural areas remain vacant. For example, in 1996, as many as 4,281 of 29,699 doctors posts sanctioned remained unfilled in rural health institutions (Misra et al, 2003).

Thus, the existing extensive network of public health centers falls far short both in terms of population coverage and the guidelines set out by the government. As the poor are the pre-ponderous users of primary health care facilities, the rich preferring to use private clinics and hospitals, the absence of public primary health care services means that many people either forego any medical care altogether or use too little too late or choose to seek expensive and unregulated care in the private sector. The public primary health care infrastructure needs to be extended if it is to provide easier and quicker access to the largely poor and rural Indian population. The number of primary health care facilities need to increase and adequate incentives need to be given to doctors, nurses and other supporting medical personnel for them to locate to rural and remote areas.

Primary Health Care in India: Quality

The quality of health care in India is an immensely neglected area of study, though recent efforts have begun to focus on it. Quality of health care services is a complex variable, encompassing as it does tangibles such as availability of drugs and equipment and intangibles such as courtesy and respect shown to patients during visits by providers. In India, the quality of health care services provided by the public health system is extremely low along almost all the criteria on which quality can be judged – infrastructure, availability of drugs and equipment, regular presence of qualified medical personnel and treatment of patients. Instead of being supportive and palliative of people's health, it will not be remiss to say that the health system itself poses a hazard to its intended beneficiaries, especially the poor who are often as reluctant to use public health services as the rich.

Quality of health care services provided can be assessed along the following dimensions (which are by no means exhaustive): (1) an adequately equipped and easily accessible public health facility, (2) appropriate and timely clinical care and (3) patient satisfaction with health care received and the outcome of treatment. Ultimately, the real test of the quality of health care services is how they affect health outcomes, especially of the poor. Below we describe some aspects of the quality of publicly provided primary health care services in India.

At the least, a primary health care service center should have the following in terms of infrastructure: the building in which it is housed be in good condition; availability of electricity and running water; the presence of a telephone or some means of communication for situations where ambulatory and emergency care may be required. Moreover, the facility needs to have basic drugs and equipment such as a refrigerator, sterilizers etc. A Facility Survey conducted by the Department of Family Welfare in 1999, showed that in India a majority of PHCs lacked essential inputs and infrastructure, especially in Bihar, Uttar Pradesh and Orissa. 77 percent of PHCs had an infant weighing machine, 65 percent had a deep freezer, 60 percent had an autoclave and a steam

sterilizer drum and only 16 percent had a refrigerator. Fewer than 20 percent had equipment required for medical termination of a pregnancy. Most lacked essential drugs: only around 15 percent had stocks of iron and folic tablets, 56 percent had contraceptives and 61 percent had vaccines.

Health care provision requires specialized skill and training on the part of medical personnel. This leads to asymmetry of information between the provider and patient and therefore, a medical transaction is fraught with moral hazard. Medical practitioners need to keep up with the latest developments in medicine and also need to respect the right of the patient to informed consent in the treatment prescribed. One of the major lacunae in India's health system is lack of quality control. There is little public enforcement to ensure appropriate standards of care in clinical practices. This is as true of the public sector as of the private sector which is largely unregulated. The Medical Council of India, the main body overseeing standards of care, has no process in place whereby doctors are assessed as to their competence with respect to current standards of care when they renew their registration. Given the lack of effective monitoring, there is little information to go by in terms of competence of medical personnel and actual practice in clinical settings, though there is some evidence of overuse of antibiotics and tranquilizers in public health care centers.

The quality of health care services provided depends not only on the skills and ability of medical personnel but also on the incentives they face to expend effort. Even casual observation especially in rural areas in many parts of India reveal that often the primary health care facility is not open during the hours and days it is supposed to be functioning or the health worker(s) manning the facility are not available. Delivery of public health care services in India is marked by pervasive absenteeism. According to one study, absenteeism among doctors was as high as 43 percent and among other health workers 39 percent, in government health care facilities across Indian states (Chaudhury et al, 2003).[7] A survey conducted by Banerjee et al (2003) in Udaipur in Rajasthan found greater absenteeism in PHCs and CHCs than in sub-centers. Moreover, the absenteeism

[7] Absenteeism is also endemic in the public school system in India.

did not display any regularity with respect to the time of the day or day of the week. This meant that for people seeking health care services from these facilities, there was considerable uncertainty attached to a visit that is costly in terms of time and money, whether they would find it open and if open, finding someone there. Such uncertainty further attenuates people's incentives to make use of public health facilities.

Under the family welfare program, health or family planning workers are required to make regular visits to each household in their area of assignment to monitor women and children's health, provide family planning information and counsel and deliver selected services. Only 13 percent of women in India, according to the NFHS II, reported receiving a visit from a health or family planning worker in the last 12 months preceding the survey.

Another means to judge the quality of care is patient satisfaction with health care services received, treatment and outcome. With regards to patient satisfaction with health care services received, the NFHS II asked respondents specific questions about the quality of services received in their most recent visit to a health facility. Specifically, the respondents were asked whether they received the service they went for, their waiting time, whether the staff spent adequate time with them and were respectful and respected their privacy, and general cleanliness of the facility visited. 99 percent of the respondents received the service for which they had visited the facility. The median waiting time was 30 minutes which did not differ between the rural and urban areas. 95 percent of the respondents were satisfied with the amount of time the health facility staff spent with them. 52.1 percent reported that the health facility was clean. The satisfaction with care received varied greatly across states with Uttar Pradesh, Rajasthan, West Bengal and Orissa ranking consistently lower along different dimensions of patient satisfaction.

Public Sector versus the Private Sector

Public perception of government provided health services based on people's experiences with the system is that of being of low quality. This leads to gross

underutilization of 'free' care. In general, in India people depend more on the private sector for health care than they do on the public sector. In fact, the private health sector in India is one of the largest in the world: 80 percent of all qualified doctors, 75 percent of dispensaries and 60 percent of hospitals in India belong to the private sector (Narayan et al, 2003). According to the NFHS II, only 23.5 percent of urban residents and 30.6 percent of rural residents choose to visit a government health facility as their main source of health care services. Even among those who reported satisfaction with the use of government facilities, all rated the private sector facilities higher on all quality indicators.

The choice of health care provider is strongly influenced by household income: as household incomes rise, the use of a private sector facility as the main source of health care provision increases. However, despite the greater financial burden the use of a private sector facility imposes, even among poor households, the use of a public health sector facility is low – only a third of low income households reported using a government health facility according to the NFHS II. According to a World Bank study, 79 percent of all outpatient care among the poor is provided by the private sector (Peters et al, 2002). Clearly, it is the poor quality of care provided by the public health system which pushes people towards making greater use of costlier health care facilities provided by the private sector.

4. What can be done? Public Expenditure, Decentralization and Technology

Increasing Public Expenditure

In most countries of the world, governments play an important role in the health sphere. Governments are involved in the direct production as well as financing of health care goods and services, there is substantial government regulation of health care industries and government spending on health care constitutes a large fraction of all health care spending.[8,9]

[8] Regulation means using non-price mechanisms to control type, quality, price and quantity of a good or service.

[9] In general, the rationale for the government to intervene in the production of a good or service is market failure due to the good or service in question being a public good, due to the existence of externalities and

In 2000, the total expenditure on health in India, both public and private, was only 4.9 percent of GDP. Of this, public expenditure on health accounted for less than 1 percent.[10] In per capita terms, this implies government spending $4 in U.S. dollars. Of the total public expenditure on health, expenditure by the central government was only 0.13 percent of GDP, expenditure by state governments was 0.72 percent of GDP, and another 0.10 percent came from local governments. Both for states and the central government, health expenditure accounts for a very small fraction of all government expenditure. Table 9 shows trends in the share of health expenditure for sixteen major states and for the central government from 1980-81 to 1997-98. For the states, the average expenditure on health as a proportion of all expenditure over this period has been a little less than 6 percent and has been falling since 1990-91. For the central government, it has been around 1.3 percent and also shows a declining trend from 1985-86 onwards.

Not only is public expenditure on health very low, most of it is on recurrent items, in particular on salaries, and little is spent on capital investment and for the maintenance and upgrading the quality of existing infrastructure. Moreover, the allocation of resources in the public health budget seems to follow no particular logic. In India, health is a 'state' subject. The primary responsibility for planning and providing public health care services lies with the state governments, though the central government plays an important part in the shape and content of health policy at the state level and also provides budgetary support, especially with respect to centrally administered programs such as those related to TB, Malaria and AIDS. There is a lot of inertia in terms of allocation of resources to different sectors within the health budget – future budgetary allocations derive from the

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because some markets are incomplete or missing. Health care is not strictly a public good as there is rivalry and excludability in its consumption. However, there are certain aspects of health care that have public goods aspects, such as dissemination of information and research and development. Externalities from health care are another cause of market failure. For example, an individual's inoculation against a communicable disease lowers the probability that the disease will be transmitted to other people. Incomplete or absent markets, such as those for health insurance also provide a rationale for governments to intervene. For developing countries, perhaps the most important rationale for the government to provide health care is poverty reduction and social equity and guaranteeing a minimum level of health and well-being to its largely poor population.

[10] India's public expenditure on health is one of the lowest in the world. By way of comparison, the ratio of public health expenditure to total health expenditure is around 40 percent in East Asia, 50 percent in Latin America and 75 percent in Europe.

past and from the availability of international funds. The differences in health profiles and needs of the populations across regions are not taken into account.

While the rationale for public provision of health care is to provide the poor with easy access to health care services, the distribution of public expenditure on health in India is pro-rich, tilted as it is towards curative care, rather than preventive care. According to one study (Mahal et al, 2002), households belonging to the lowest income quintile get only 10.10 percent of public subsidies to health care; those belonging to the top income quintile capture about 30 percent This means that for every $1 spent on the poor, $3 gets spent on the rich. However, the same study notes that the distribution of benefits from primary health care is slightly pro-poor

Even given the misallocation and inefficient utilization of public funds in the health sector and the inefficiencies and waste generated by the functioning of the public health institutions and associated incentive structures, public health expenditure in India of less than 1 percent of GDP is extremely low. The average for developing countries as a whole is around 3 percent of GDP and for high-income countries, 5 percent of GDP (Sachs and Bajpai, 2001). In India, most expenditure on health comes from private sources. Of the total expenditure on health in 2000, private expenditure in the form of out-of-pocket expenses accounted for nearly 82.2 percent.[11] A large part of the private expenditure on health is for curative primary care and the financial burden of ill-health on the poor is very high. In some states, particularly Uttar Pradesh, Rajasthan, Bihar and Punjab, average private expenditure on health is more than 200 percent of annual per capita consumption expenditure (UNDP, 1997). Thus, the poor spend a very large share of their income on buying health care services, often facing financial ruin and perpetual indebtedness due to health-shocks.

Just to be able to provide its current population with a minimum package of health care services, India needs to increase its level of public health care spending. The primary

[11] India is behind only Cambodia, Dem Rep of Congo, Georgia, Myanmar and Sierra Leone in private financing of health care (Misra et al, 2003).

health care system is the first point of contact for a poor person seeking medical care. Given the current serious deficiencies both in terms of quality and quantity of the primary health care system, the burden of avoidable ill-health, mortality and morbidity on the poor, especially women and children, is tremendous. Gupta and Mitra (2004) find that health status and poverty, both respond to higher health expenditure across Indian states. Many cross-country as well as intra-country studies find that infant and child mortality responds to higher public health care expenditures (Anand and Ravallion, 1993) and maternal mortality rates respond dramatically to timely provided ante-natal and other simple reproductive health services and to the presence of trained personnel at the time of birth. Maternal and child health and family welfare services are essential services that can be cost-effectively provided by the sub-centers and the PHCs.

Moreover, not only is the current burden of disease in India very high, but with AIDS, TB and Malaria threatening to become epidemics, the future burden of disease can be expected to rise dramatically if public investment in the health sector is not stepped up significantly to contain their spread. The health targets set by the 10th Five Year Plan 2002-2007 are even more ambitious than those set out by the Millennium Development Goals (MDGs). The former envisages a reduction in infant mortality rates from 72 in 1999-2000 to 45 in 2007 and to 28 by 2012, whereas the latter sets out a target of 27 for India by 2015; the target for maternal mortality in the 10th plan is 200 per 100,000 live births by 2007 and 100 per 100,000 live births by 2012, compared to the MDG target of 142.5 per 100,000 live births by 2015. For HIV/AIDS, the 10th plan has set the goal of zero percent increase by 2007 and a 25 percent reduction in morbidity and mortality due to malaria by 2007 and by 50 percent by 2010 (UNDP, 2004). These targets cannot be achieved without a substantial increase in public investment in health. Sachs and Bajpai (2001) recommend increasing public expenditure on health to 3 percent of GDP, mainly at the state level and mainly towards prevention and treatment of primary health conditions such as infectious diseases, reproductive health and nutrition.

Improvements in the Delivery of Health Care Services

(a) Decentralization

The failure of India's public health system to deliver basic health services to the poor requires serious rethinking of its institutional design and the structure of incentives that health service providers in the system face.

As noted above, while health is a 'state' subject, the nature of the health policy at the state level is shaped to a significant extent by the central government through budgetary help as well as via the many centrally sponsored schemes. This often leads to misallocation of funds vis-à-vis local needs. The advantages of decentralization are in general local information availability that allows for better matching of needs of diverse local communities and the provision of public services; it can also identify cheaper and more appropriate alternatives in provision and delivery. Moreover, by putting more pressure on local politicians, it can generate greater accountability on the part of the government to the electorate. Also, in some cases, a decentralized institutional setup can outperform even the market by providing a more stable and efficient coordinating device (Bardhan, 1997).

Decentralization, in the sense of devolution of political, administrative and fiscal decision-making power to local governments, has been proposed as a solution to the problems of weak local democracy and local accountability mechanisms. Endemic absenteeism of teachers in the public school system and of doctors in the public health system, especially in rural health centers, are consequences of weak incentives to perform and lack of any institutionalized punitive correctives to such malfeasant behavior. Teachers and doctors are answerable to state governments and not the local community.

India has had a long tradition of interest in some form of decentralization, but serious steps towards making it a reality were taken only in 1992 with the 73rd and 74th amendments to the Indian Constitution. Before 1992, only Gujarat, Maharashtra, West Bengal and Karnataka had some form of decentralization. The 1992 amendments empowers Panchayati Raj institutions as bodies of local self-government. The

amendments provide for direct elections to local bodies every five years at different levels – the village, block/taluka and district in the rural areas and metropolitan and municipal levels in urban areas. These local bodies have the power to assume appropriate local development responsibilities. Women are allotted a quota of one-third seats in these bodies as well as one-third of all leadership offices. Scheduled castes, tribes and other minorities are guaranteed proportionate representation. State legislatures have the power to pass laws that devolve specific taxation powers to these bodies as well as revenue sharing based on the recommendations of independent state finance commissions that are set up for advisory purposes.

Lack of data below the state level makes it difficult to assess quantitatively the successes and prospects of decentralization for the provision of basic services at the local community level. However, some limited remarks can be offered based on experience with decentralization efforts in health and education sectors in some Indian states.

Decentralization of the health care sector has been quite comprehensive in the southern Indian state of Kerala after the constitutional amendments of 1992. In September 1995, the control over PHCs and government dispensaries were transferred to the village panchayats; blocks PHCs, CHCs, block hospitals and government hospitals to block panchayats; and CHCs, block headquarter hospitals and government hospitals in corporation and municipal areas to corporation and municipal councils. Employees of these health care centers came under the direct supervision of the local government bodies, though their salaries, allowances and other dues were paid by the state. Narayan and Hari Kurup (2000) from their study of four districts in Kerala found that the transfer of authority to local government bodies in general had resulted in greater flow of funds to these bodies, more autonomy over spending decisions, faster project implementation, less corruption, and greater advocacy of preventive and curative care and provision of family planning services through PHCs. In Erattupettah village in Kerala, the panchayat fixed the door, flooring and electricity of the PHC in the village, which before then had lacked supplies and basic infrastructure. They purchased new furniture, an ECG machine and a jeep for ambulatory purposes. Regular medical supplies were arranged for by constant

communication between the head of the panchayat and the district medical officer. There was also greater co-ordination and communication between the panchayat, the PHC and the district hospital. In 2000, the number of out-patient visits to the PHC in the village increased to 250 a day from 68 a day in 1996, largely due to more regular attendance by medical personnel and greater availability of medical supplies (Franke, 2002). In another study, Mahal et al (2000) using data for Indian states found some evidence that states with decentralization had lower infant mortality and child mortality rates.

Decentralization of education services has also been undertaken in some states of India. Madhya Pradesh, for example, started the Educational Guarantee Scheme (EGS), a large scale scheme of decentralized provision of education to improve literacy rates in the state which has a large population of scheduled castes and tribes with very low literacy rates. Under this scheme, the government provides a school within 90 days of a local community's request for such a school within one kilometer of habitation, provided no school existed before. As a result, 26,000 new schools have been built in the state since 1997, especially in areas which are predominantly inhabited by tribals and Dalits. The school is jointly managed by the state government, the local government body and the local community. The impressive jump in literacy rates in Madhya Pradesh, from 44 percent in 1991 to 64 percent in 2001 (Census of India, 2001), is largely ascribed to the EGS.

In a cross-country study, Crook and Manor (1998) compared the effects of decentralization in the southern Indian state of Karnataka, and the countries of Bangladesh, Cote d'Ivoire and Ghana. They found that decentralization led to increased attendance of school teachers in Karnataka and there was greater efficiency and speed with which local governments responded to popular pressure, more than in the other three countries.[12]

[12] While, popular participation was higher in Bangladesh, Karnataka outperformed all three countries because of the presence of combination of other factors, namely, a more effective system of democratic accountability, an established party system, and a free press. These factors were missing individually or in combination in the other three countries.

The above case studies suggest that decentralization does seem to have a positive effect on the provision of public services. However, they are too limited to draw any concrete conclusions and more research is needed to understand how decentralization affects both the quantity *and* the quality of services provided. For example, there is little doubt that the Education Guarantee Scheme in Madhya Pradesh has improved access to schools especially for scheduled tribes and other backward classes who were quantity constrained; however, there has been little effect on the quality of schooling offered, and there may even have been a deterioration in school functioning: both the amount of investment in education as well as the quality of teachers and schooling have registered declines. The village councils who have been given the power to recruit teachers hire 'para-teachers' who are inadequately trained, on a short-term contractual basis on much lower salaries (LeClerq, 2003). Moreover, the teachers are burdened with an ever increasing set of non-academic tasks which further reduces their time and motivation to conduct classroom teaching. In effect, EGS may have resulted in more of the same or even worse.

The success of decentralization in the delivery of basic services to the poor also depends on the institutional context in question. Local democracy and decentralization can lead to both positive and negative results depending on the levels of development at the local and national levels and local and national level institutions of governance. One of the major problems with decentralization especially in developing countries is the capture of local governments by local elites. This may give rise to rent-seeking behavior and the distribution of resources away from the poor and the powerless, and the allocation of resources to public goods will reflect the interests and strengths of locally vested interest groups. In India, especially in rural areas, caste, land ownership and gender are often decisive in local level decisions in the provision of basic public services. Moreover, as Bardhan (1997) points out, decentralization with its informational advantages has to be balanced with economies of scale and scope which can be realized at a more central level of government. This may mean that a more efficient system of

governance would involve coordinated tiers each with the responsibility of functions in which it has comparative advantage.

(b) Information Technology:

India's health system is terribly outdated. The health care delivery system in each state is made of a network of PHCs, CHCs, sub-centers, District Hospitals, Teaching Institutes and First Referral Units or FRUs, with overlapping functions and responsibilities and little communication. In order for a more efficient, effective and less wasteful health care system, the need is to streamline health care delivery and develop an integrated health care system that will avoid duplication of duties and make optimum use of personnel, infrastructure and resources. In this endeavor, information technology can play a very important role. Appropriate delivery of health care requires complete and timely information management – to keep track of patients' medical history, to make quick referrals to hospitals and other health facilities, both for more complicated health care needs as well as in the case of emergencies. India has made rapid advances in the field of information technology (IT) and therefore, is very advantageously placed to innovate in the field of health care delivery using IT. Within India, states such as Tamil Nadu, Karnataka and Andhra Pradesh that lead the IT sector, and are also more advanced in terms of health administration can provide leadership and precedent in innovative health management and delivery.

An example of such an innovation is the idea of an Integrated Health Management Information System developed by the Tamil Nadu Department of Health and Family Welfare. Under this system, each service delivery point in the health system at the primary, secondary and tertiary levels as well as the administrative offices in the state health sector would be connected via computers. This would enable speedy flow of information as well as allow the state to monitor both the operation of its health system and health outcomes. It will enable on-line receipt and exchange of information thereby ensuring timely patient and health system management, including crisis management in cases of emergencies.

5. Concluding Remarks: Towards a Healthier India

The primary health care system in India is dysfunctional. While extensive, it is wasteful, inefficient and delivers very low quality health services, so much so that the private sector has become the de facto provider of health services in India. The geographical and quantitative availability of primary health care facilities, though extensive, is far less than the guidelines laid down by the government. As has been pointed out, people are more likely to use a medical facility if it is closely located, especially in rural areas.

Access is important but people's experiences of what the facility has to offer in terms of medical care and whether it is worth their while to use it are equally important in terms of their incentives to utilize health care facilities. People's perceptions of 'free' care is that of it being of low quality, and therefore, even the available infrastructure is grossly underutilized, i.e. the public health care system in India suffers from gross supply side distortions that go beyond physical availability. This affects the delivery of basic services to its large population of poor whose quality of life depends in crucial ways on public goods. The simple availability of a building designated as a public health facility is no guarantee that it is functional, and if functional, accessible to groups of people who may be restricted in their use of public health care services on account of their caste, religion, gender and language. Even setting aside socio-economic barriers to access and assuming the presence of a public health facility close at hand, the delivery of quality health care services is not guaranteed. The infrastructure is of poor quality and there is severe lack of even basic drugs and equipment. This is especially true for rural areas, and with regard to women's and children's health. Maternal, infant and child morbidity and mortality rates are intolerably high in India. Not only social justice but economic efficiency is being compromised as India does little to protect the health and well-being of its future generations.

Like the public education system in India, the large publicly provided health system is also marred by endemic absenteeism and neglect on the part of health care providers. The

structure of incentives whereby public employees are guaranteed a salary and there is little or non-existent monitoring and accountability removes any punitive pressure that can act as a corrective on negligent behavior by public health care personnel. Even the private sector, which provides most of the health services in India, is largely unregulated and there is no gate-keeping on the standards of clinical practices adopted. Health care requires not only physical infrastructure and equipment but also skilled and specialized human capital in the form of medical training and qualifications. Given the asymmetry of information between a doctor and his/her patient, low quality of medical consultancy not only lowers the efficacy of the health system but can endanger people's health. The problem of unavailability of health-care personnel is two-fold, especially in rural and remote areas: in many cases, rural health posts remain vacant because of unwillingness on the part of qualified doctors and other health care workers to accept the placement; and secondly, due to lack of effective monitoring and weak or non-existent accountability, even when a post if filled, the health care provider may simply be absent. While in both cases, public health care services fail to get delivered, absenteeism is costlier because it has an associated salary burden (Chaudhury et al, 2003).

Public expenditure on health in India is grossly inadequate. India spends less than 1 percent of its GDP on health. Only Pakistan spends less among its South Asian neighbors. Sri Lanka and Bhutan which are poorer than India spend 6 percent and 10 percent respectively of their GDP on health. How much of its national resources a country decides to devote to its people's health is a normative issue and largely determined by the orientation of prevailing politics. The National Health Policy on Health 2002 proposes to raise public expenditure on health as a percentage of GDP from the present 0.9 percent to 2.0 percent by 2010[13]. This is still very low given the current burden of disease in India, as well as the burden of illness and disease that can be

[13] The Common Minimum Programme (CMP) of the Congress-led United Progressive Alliance has pledged to raise public spending on health to at least 2-3% of GDP over 2004-09 with focus on primary health care.

expected in the future, even with the current conservative estimates of HIV/AIDS infected people in India.[14]

In India, health has never been a political priority and this is reflected in the unconscionably low level of expenditure on public health as well as its slow increase historically. As a result, India has one of the highest proportions of private expenditure on health care anywhere in the world. Even though, primary health care is in principle 'free', yet households incur substantial out of pocket expenditures on medical care. The poor spend a very high proportion of their household income on treatment of illness compared to the rich. For the poor, an episode of illness can mean a plunge into poverty. This is also true for those above the poverty line. Health insurance and risk pooling mechanisms are conspicuous by their absence. To pay for medical care, people often borrow at high interest rates and/or sell productive assets. This pushes them deeper into poverty from which recovery is not guaranteed.

One government failure in the health sector is the lack of any systematic efforts to track the health system and health facilities. There is no system in place to collect data on a regular and standard basis from service providers; nor is there any periodic evaluation of health personnel on their technical competence and ability to provide medical care. While, on paper, inspection and supervision and visits to health care facilities are provided for, there is little implementation. Without a reliable surveillance system and systematic data collection, the prevalence, magnitude, distribution and modes of transmission of diseases cannot be judged and no rational basis exists for the formulation of appropriate policies. An integrated health management system as discussed above could greatly assist in this task.

[14] The National Health Policy 2002 also proposes to remedy the lopsided focus on curative and tertiary care, seeking to increase the share of primary health care in total public expenditure from 44 percent to 55 percent. It acknowledges the poor quality of public health services and the unevenness of delivery across rural and urban areas and disparities between income classes in access and utilization. However, it does not acknowledge the inefficiencies and waste built into the public health system, and ignores the role played by the largely unregulated private sector.

When we look at health outcomes in India, a bleak picture emerges. To reiterate partially:

- More than one third of married Indian women have chronic energy deficiency; more than half of them are anemic. 1 in every 200 pregnancies results in maternal death.
- 45 per cent of children under three are severely and chronically malnourished..
- Only 42 per cent of children between one and two years of age have completed their immunization schedule; 14.4 per cent have not received a single vaccine.
- Infant mortality is high due to treatable respiratory infections, diarrhea and other preventable illnesses that can be treated with cheap vaccines and basic drugs.
- Infectious diseases, that can be prevented or inexpensively treated via primary health care services, continue to be the number one killer in India. AIDS, TB and Malaria threaten to become pandemic in the future.

These health outcomes do not by any means exhaust all that ails India's population currently. In the future, aging populations, mental illness and non-communicable diseases are also likely to become cause for concern. India's Tenth Five Year Plan goes beyond the MDGs in terms of target health outcomes for India. In order to achieve these targets, India needs to scale-up, reorient and reform its public health system, especially in the provision of primary health care services, with particular focus on women's and children's health. If India is serious about poverty reduction and economic growth, then it needs to invest substantially more in its people's health now.

Bibliography

Anand, Sudhir and Ravallion, Martin (1993) 'Human Development in Poor Countries: On the Role of Private Incomes and Public Services,' *Journal of Economic Perspectives* 4(1) 133-150.

Bajpai, Nirupam and Sachs, Jeffrey D (2000) 'India's Decade of Development', *CID Working Paper No. 46*, Harvard University, May.

Banerjee, Abhijit, Deaton, Angus and Duflo, Esther (2003) 'Health Care Delivery in Rural Rajasthan,' Mimeo, MIT.

Bardhan, Pranab K. (1997) *The Role of Governance in Economic Development: A Political Economy Approach,'* OECD, Paris.

Bhargava, Alok, Jamison, Jean T., Lau, Lawrence J. and Murray, Christopher J. L. (2001) 'Modeling the Effects of Health on Economic Growth,' *Journal of Health Economics* 20 (May) 423-40.

Bloom, E. David, Canning, David and Jamison, Dean T. (2004) 'Health, Wealth and Welfare,' *Finance and Development*, March 10-15.

Census of India, 2001

Chaudhury, Nazmul and Hammer, Jeffrey (2003) *Ghost Doctors: Absenteeism in Bangladeshi Health Facilities*, Mimeo, Development Research Group, The World Bank.

Chaudhury, Nazmul, Hammer, Jeffrey, Kremer, Michael, Muralidharan, Kartik and Halsey, Rogers (2003) *Teachers and Health Care Providers Absenteeism: A Multi-country Study*, Mimeo, Development Research Group, The World Bank.

Crook, Richard C., and Manor, James (1998) *Democracy and Decentralization in South Asia and West Africa: Participation, Accountability and Performance*, Cambridge University Press.

Economic Survey 2002-2003, Ministry of Finance and Company Affairs, Economic Division, Government of India.

Franke, Richard W. (2002) 'Kerala Health and Decentralization Project, Case Study: The Erattupettah "Healthy Village" Project,' Mimeo, Department of Anthropology, Montclair State University.

Gupta, Indrani and Mitra, Arup (2004) 'Economic Growth, Poverty and Health: An Exploratory Study for India,' *Development Policy Review* 22(2) 193-206.

Human Development Report India, 1999, Oxford University Press.

India Human Development Goals (2004), UNDP (http://www.undp.org.in/ihdg.htm#1)

India National Family Health Survey 1998-9 (NFHS –2), International Institute for Population Studies, 2000.

Kadiyala, Suneetha and Barnett, Tony (2004) 'AIDS in India', *Economic and Political Weekly*, May 22.

Leclercq, Francois (2003) 'Education Policy Reforms and the Quality of the School System: A Field Study of Primary Schools in Madhya Pradesh, India,' Working Paper, UR CIPRE.

Mahal, Ajay, Srivastava, Vivek and Sanan, Deepak (2000) 'Decentralization and Public Sector Delivery of Health and Education Services: The Indian Experience,' *Discussion Paper Series in Development Policy*, ZEF, Bonn.

Misra, Rajiv, Chatterjee, Rachel and Rao, Sujatha (2003) *India Health Report*, Oxford University Press, New Delhi.

Macroeconomics and Health: Investing in Health for Economic Development (2001) Report of the Commission on Macroeconomics and Health, World Health Organization, Geneva.

Mahal, A. et al. (2002) *Who Benefits from Public Sector Health Spending in India*, National Council for Applied Economic Research, New Delhi.

Narayana, D. and Hari Kurup, K. K. (2000) 'Decentralization of the Health Care Sector in Kerala: Some Issues,' Working Paper 298, Centre for Development Studies, Thiruvananthapuram.

Narayanan, P. R., Santha, T., and Kumaran Paul P. (2003) 'Tuberculosis Control Strategies: Challenges to Health Management Research,' *Health Administrator*, XV (1&2) 113-17.

Patel, Vikram, Rahman, Atif, Jacob, K. S. and Hughes, Marcus (2004) 'Effect of maternal mental health on infant growth in low-income countries: new evidence from South Asia,' *British Medical Journal*, 328 (3 April) 820-23.

Peters, David H. et al (2002) *Better Health Systems for India's Poor: Findings, Analysis and Options*, The World Bank, New Delhi.

Proposal for Implementing An Integrated Health Management System Using Information Technology, Department of Health and Family Welfare, Government of Tamil Nadu.

Sachs, Jeffrey D. and Bajpai, Nirupam (2001) 'The Decade of Development : Goal Setting and Policy Challenges in India,' *CID Working Paper No. 62*, Harvard University, February.

Sharma, V. P. (2003) 'Malaria and Poverty in India,' *Current Science*, 84(4) 513-515.

UNICEF Statistics (2003) available from http://www.childinfo.org/eddb/mat_mortal/

World Health Report 1999, World Health Organization, Geneva.
World Health Report 2000, World Health Organization, Geneva.

TABLE 1: Selected Health Indicators, India, 1951-2000

Selected Health Indicators				
	1951	1981	1991	2000
Crude Birth Rate per 1000 population	40.8	33.9	29.5	25.8
Crude Death Rate (per 1000 population)	25.1	12.5	9.8	8.5
Total Fertility Rate (per woman)	6.0	4.5	4.5	3.2
Maternal Mortality Rate (per 100,000 live births)	-	-	437	407
Infant mortality Rate (per 1000 live births)	146	110	80	68
Child Mortality (0-4 years)	-	41.2	26.5	20.4
Life Expectancy at Birth				
Male	37.2	54.1	59.7	62.3
Female	36.2	54.7	60.9	65.3

Source: Economic Survey, 2002-3

TABLE 2: Life Expectancy at Birth (Years) 1941-2000

Year	Male	Female	Total
1941-1951	32.4	31.7	32.1
1951-1961	41.9	40.6	41.3
1961-1971	46.4	44.7	45.6
1971-1981	50.9	50.1	50.5
1981-1986*	55.6	56.4	56
1986-1991*	58.1	59.1	58.6
1991-1996*	62.8	64.2	63.5
1996-2000	62.8	64.2	63.5
2000	64.1	65.6	64.9

Source: Ministry of Health and Family Welfare, Government of India; *Estimated

TABLE 3: Infant Mortality Rate (per 1000 live births), 1961, 1981, 2000

State	**1961**	**1981**	**2001**
Kerala	52	42	16
Maharashtra	92	74	49
Tamil Nadu	86	51	53
West Bengal	95	62	53
Punjab	77	74	54
Karnataka	81	74	58
Gujarat	84	78	64
Himachal Pradesh	92	82	64
Andhra Pradesh	91	55	66
Bihar	94	75	67
Haryana	94	52	69
Assam	..	92	78
Rajasthan	114	87	83
Uttar Pradesh	130	99	85
Madhya Pradesh	150	133	97
Orissa	115	125	98
India	**115**	**77**	**71**

Source: Office of the Registrar General of India, Ministry of Health Affairs

TABLE 4: Infant and Child Mortality, 1998-99

	Infant Mortality	Child Mortality	Under Five Mortality
Urban			
Scheduled Caste	60.4	25.2	84
Scheduled Tribe	57.6	23.4	79.6
Other Backward Class	51.2	16.3	66.6
Other	43.5	14.1	57
Male	53.8	14.6	67.6
Female	44.3	19.7	63.1
Low Birth Weight	66.6	..	..
Very Low Birth Weight	124	..	..
Rural			
Scheduled Caste	88.1	43	127.3
Scheduled Tribe	86.9	48.8	131.4
Other Backward Class	82.2	32.7	112.2
Other	69.3	25.6	93.1
Male	80.7	27.9	106.4
Female	78.6	41.7	117
Low Birth Weight	78.2	..	..
Very Low Birth Weight	153.8	..	..

Source: National Family Health Survey II, 1998-99

TABLE 5: Selected Child Health Indicators, 1998-99

Vaccinations in Children	Percentage
BCG	71.6
DPT (3 doses)	55.1
Polio (3 doses)	62.8
Measles	50.7
All Vaccinations	42
Children chronically undernourished (stunted)	45.5
Children acutely undernourished (wasted)	15.5
Children underweight	47

Source: National Family Health Survey II, 1998-99

TABLE 6: Percentage of Women suffering from Anemia, 1998-99

	Percentage Women suffering from Anemia
Total	51.8
Urban	45.7
Rural	53.9
Scheduled Caste	56
Scheduled Tribe	64.9
Other Backward Class	50.7
Other	47.6

Source: National Family Health Survey II, 1998-99

TABLE 7: Burden of Disease, WHO estimates 1998

Total DALYs	**India (percent)**	**World (percent)**	**High Income (percent)**	**Low/Middle Income (percent)**
Communicable Diseases, Maternal and Perinatal Conditions and Nutritional Deficiencies	50.3	40.9	7.2	43.8
Infectious and Parasitic Diseases	20.9	23.4	2.8	25.2
TB	2.8	2	0.1	2.2
STD	1.8	1.2	0.4	1.3
HIV/AIDS	2.1	5.1	0.9	5.5
Diarrhaoel Diseases	8.2	5.3	0.3	5.7
Childhood Diseases	5.4	4.1	0.4	4.4
Malaria	0.2	2.8	..	3.1
Maternal Conditions	2.9	2.3	0.4	2.5
Perinatal Conditions	8.7	5.8	1.9	6.2
Nutritional Deficiencies	4	3.2	0.9	3.4
Non-Communicable Diseases	33	43.1	81	39.8
Injuries	16.7	16	11.8	16.4

Source: World Health Report 2000

TABLE 8: Percent Distribution of ever-married rural women 15-49 by distance from the nearest health facility India, 1998-99

Distance	PHC	Sub-Center	Hospital	Dispensary/Clinic	Any Health Facility
Within Village	13.1	33	9.7	28.3	47.4
<5 km	28.4	39.7	25	32.4	38.9
5-9 km	29.2	16.3	25.1	17.4	9.7
10+ km	28.2	9.6	40	21.7	3.9
Median Distance	4.9	1.3	6.7	2.4	0

Source: National Family Health Survey II, 1998-99

TABLE 9: Share of Health Expenditure in All Government Expenditure, 1980-81 to 1997-98

Year	Sixteen Major States (percent)	Central Government (percent)
1980-81	6.27	1.16
1981-82	6.59	1.4
1982-83	6.73	1.61
1983-84	6.74	1.69
1984-85	6.41	1.61
1985-86	6.49	1.52
1986-87	6.26	1.38
1987-88	6.31	1.39
1988-89	6.27	1.36
1989-90	6.12	1.22
1990-91	5.91	1.26
1991-92	5.44	1.27
1992-93	5.48	1.28
1993-94	5.62	..
1994-95	5.17	1.35
1995-96	5.23	1.23
1996-97	5.13	1.19
1997-98	5.28	1.2

Source: Misra et al (2003)