Health Care Financing Reforms in India

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Introduction

It is very widely acknowledged that health is an important component of human development. Empowerment of people comes from the freedom they enjoy, and this includes, among others, freedom from poverty, hunger, and malnutrition, and freedom to work and lead a healthy life (Sen, 1999). Access to health care is critical to improving health status and good health is necessary for empowerment. Ensuring access to health care helps to minimize absenteeism, enhance labor productivity, and prevents misery. Government intervention in health is also argued for, due to the presence of high degree of asymmetric information in the health sector. Not surprisingly, throughout the world, governments have had a significant role in providing and regulating health services, and their role is particularly important in developing countries with large concentration of the poor.

Despite poor health indicators, government spending on health care in most low- and middle-income countries is well below what is needed. A recent analysis suggests that while low-income countries need to spend $54 per capita for a basic package of health services, the average actual per capita health expenditure in these countries is only $27 (Stenberg and others, 2010). Low revenue collections, competing demands for revenues, and relatively low spending priority contribute to this insufficient spending.[1] Consequently, limited access to public health care facilities forces people to go to private

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[1] Heller (2006) defines fiscal space as "the availability of budgetary room that allows a government to provide resources for a given desired purpose without any prejudice to the sustainability of a government's financial position."

providers, resulting in substantial out-of-pocket (OOP) spending, especially for the poor (WHO, 2004).

The Millennium Development Goals have helped to draw the attention to the need for ensuring universal coverage in many low- and middle-income countries. The 58th session of the World Health Assembly in 2005 defined universal health care as providing "access to key promotive, preventive, curative, and rehabilitative health interventions for all at an affordable cost" (World Health Assembly, 2005). However, most low- and middle-income countries find this a major challenge, as it would require substantial increases in public spending and productivity increases in an environment of severely strained resources. Of course, there has been considerable success in achieving universal health coverage in some middle-income countries, including Thailand and some Latin American countries, while other countries, such as China, Indonesia, and Vietnam, are focusing their attention on improving access. In Africa, Ghana and Rwanda have recorded remarkable success in expanding coverage, which has inspired other countries in that continent to embark on health sector reforms.

The health sector challenges in India, like those in other low- and middle-income countries, are formidable. Public spending on medical, public health, and family welfare in India is much below what is required. Further, the gap between the actual spending and the required amount is larger in the relatively low-income states and this results in marked inter-state inequality. The low levels of spending have had an adverse impact on the creation of a preventative health infrastructure. With over 70 percent of the spending on health being OOP, the low level of public spending and its uneven distribution have been a major cause of the immiseration of the poor.

Of course, there have been some recent initiatives to augment public spending on health care, but these have met with only limited success. The National Rural Health Mission (NRHM), established in 2005, and the recent introduction of *Rashtriya Swastya Bima Yojana* (RSBY) a national health insurance scheme for people below the poverty line are the two most important initiatives by the central government. Several state governments

also have come up with their own insurance schemes. Despite these initiatives, the actual public spending on health has not shown much increase.

This chapter analyzes public spending on health care in India. The second section presents the salient features of the health care system in India and the health status of the population. The third section examines the impact of low levels of public expenditures on the state of health infrastructure in India. The fourth section discusses recent reforms for increasing allocation to health. The fifth section discusses the transfer system and analyses expenditure needs of States to provide essential health infrastructure. It also analyzes the fiscal space for health care in terms of stimulation and substitution effects of central transfers for health to states. The final section summarizes the main findings.

The Public Health Care System in India and Health Status of Population

Salient Features

The three most important features of the Indian health care system are:

i. *Low levels of public spending*: Between 1996-97 and 2005-06, total government spending on health was stagnant at about 1 percent of GDP, and the public expenditure elasticity with respect to GDP was at 0.94, lower than the average for low-income countries (1.16) for the same period (Tandon and Cashin, 2010). Despite efforts to increase public spending after 2005-06 including the adoption of NRHM, the expenditure increased only marginally to 1.2 percent of GDP in 2009-2010.
ii. A resulting *poor quality of preventative care and poor health status* of the population.

iii. The inadequate level of public health provision has forced the population to seek private health providers resulting in *high OOP spending*. OOP spending in India is over four times higher than the public spending on health care.

Thus, reforms in the health sector will have to address the issue of increasing the allocation to health care, focusing on preventative care, ensuring greater access to health care by the poor and significantly improving the productivity of public spending (India MoHFW, 2005a, 2005b, 2005c).

In India, a federal country, the Constitution assigns the states predominant responsibility for the provision of social services and coequal responsibility with the central government for the provision of economic services. However, since all broad-based tax handles except the general sales tax are assigned to the central government, there is a high degree of vertical fiscal imbalance. Further, the wide interstate disparities in revenue capacity make it difficult to ensure comparable levels of public services in different states at comparable tax rates.

The Constitution recognizes the need to resolve both vertical and horizontal imbalances and has provided for the sharing of central taxes with the states and for providing grants in aid to the states based on the recommendation of an independent body, the Finance Commission, appointed every five years. Further, the Planning Commission also makes grants for state plan schemes based on a formula (Rao and Singh, 2005; Rao, 2010). In addition to the general purpose transfers described above, specific-purpose grants are given by the central ministries for various central schemes formulated within each ministry. The Ministry of Health and Family Welfare administers the major transfer scheme under the NRHM, which is discussed in detail later in the chapter. Despite these mechanisms, the transfer system has failed to offset the fiscal disabilities of the poorer states, and the states with poor health indicators are left with large unmet expenditure needs (Rao and Singh, 2005).

As mentioned above, state governments have predominant responsibility for providing health care services. Entry 6 in the "state list" of the Seventh Schedule of the Constitution assigns "Public health and sanitation, hospitals and dispensaries" to the state governments. However, the tasks of "Population control and family planning "(Entry 20 A), "Legal, medical and other professions" (Entry 26) and "lunacy and mental deficiency, including places for the reception or treatment of lunatics and mental deficiencies" (Entry 16) are put in the "concurrent list." Similarly, institutions declared to be of national importance by the Parliament and institutions for professional and technical training and research are in the domain of the national government.

Health service delivery in India is characterized by a three-tier system. At the lowest level are the sub centers, with each covering a population of about 5,000 in the plains and about 3,000 in hilly and difficult terrain. Only paramedical staff is available in these sub-centers. The first points of contact with a doctor are the primary health centers, with each covering about 30,000 people in the plains and about 20,000 in hilly and difficult terrain. Community health centers provide secondary care and are organized at the block levels. The sub divisional hospitals and district level hospitals constitute the higher tiers. In principle, the sub centers, primary health centers, and community health centers are required to handle the preventative aspects of health care, institutionalize deliveries, treat minor diseases, and act as referral centers. The subdivision and district level hospitals would then treat major ailments as referral hospitals. However, in practice this has not been the case, as the sub-division and district-level hospitals deal with all aspects of health care.

Health Status of the Population

India's health achievements are low in comparison to the country's income level. According to UNDP's Human Development Report 2010, in a set of 193 countries, while India ranked 119th on the human development index, it ranked 143rd in infant mortality rate, 124th in maternal mortality rate, 132nd in life expectancy at birth, and 145th in

under-five mortality rate.[2] Scatter plots between Gross National Income across countries and each of the four indicators along with their associated trend lines (shown in Figure 15.1) also indicate that India's health indicators are worse than what is expected at India's level of income for three of the four indicators. The health indicators summarized in various developing regions of the world show that India's performance is only better than that of sub-Saharan Africa (Table 15.2). In fact, among the South Asian countries, the infant mortality rate in India in 2008 was only better (lower) than that of Pakistan and Bhutan (Table 15.1). Furthermore, the rate of improvement in the infant mortality rate over the 1990-2008 period in India was lower than in most other South Asian countries, including Bangladesh, Nepal, and Bhutan.

Table 15.1. Infant Mortality Rate in Selected South Asian Countries, 1990, 2008

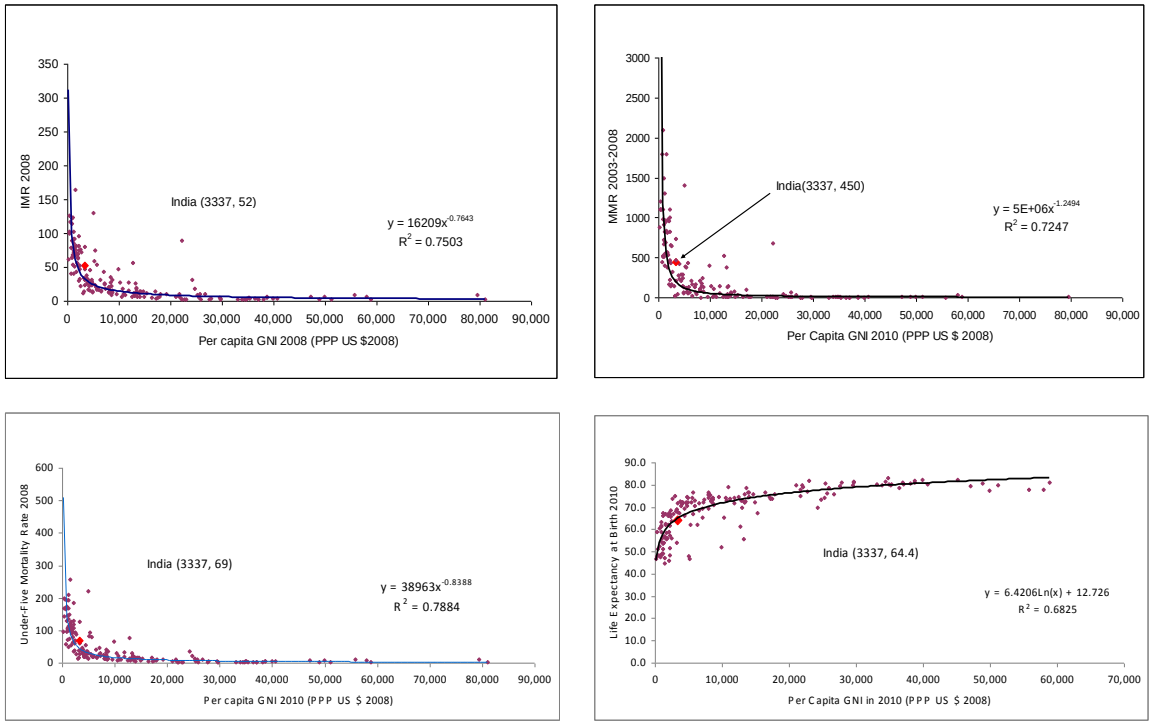
Countries	**1990**	**2008**
Sri Lanka	23	13
Maldives	79	24
Nepal	99	41
Bangladesh	103	43
India	*83*	*52*
Bhutan	91	54
Pakistan	101	72

Note: Infant mortality rate refers to the number of deaths of infants under one year old per 1,000 live births

Source: UNDP Human Development Report 2010.

[2]Since data for all countries are not available for each of the four indicators, countries for which data on the respective indicators were available have been used to arrive at the ranking. Data were available for 193 countries for infant mortality and under-five mortality rates, for 171 countries for maternal mortality rates, and for 180 countries for life expectancy at birth.

Figure 15.1. Scatter Plot of IMR, MMR, LE and UFMR and Per Capita GNI Across Countries



Source: UNDP, Human Development Report, 2010.

An important factor contributing to the slow progress in population health in India is the poor access to primary and preventive health care services.[3] This is evidenced by the fact that India's immunization rates and percentage of births attended by skilled health personnel rank among the worst in the world (Table 15.2). Inadequate preventive health care services results in high incidence of deaths from communicable diseases. According to the *Global Burden of Diseases* data published by WHO in 2008, of the total number of deaths in a sample of 192 countries across the world, India accounted for nearly one fourth of the deaths due to diarrhea, more than a third of the deaths due to childhood cluster diseases (many of which are preventable by basic immunization), more than a third of the deaths due to Leprosy, more than half the deaths due to Japanese Encephalitis and about 30 percent of the deaths due to prenatal conditions (Table 15.3).

[3] The *Mid-Term Appraisal of the Tenth Five-Year Plan*, for example, states, "…A major concern …of the health sector is how best to reach out to the bottom 300-400 million people who perceive health services as unavailable and inaccessible" (p.74) (India Planning Commission, 2005).

Table 15.2. Selected Health Indicators in India and Developing Regions of the World

Regions	Infant mortality rate (per 1,000 live births, 2008	Under-five mortality rate (per 1,000 children under age 5), 2008	Maternal mortality ratio (per 100,000 live births, 2003-2008	Antenatal coverage of at least one visit (%), 1990-2008	Births attended by skilled health personnel (%), 2000-2008	Infants lacking immunization against DTP or measles (% of one-year-olds) 2008	
						DTP	Measles
Arab States	38	50	238	74	77	15	19
East Asia and the Pacific	23	28	126	91	91	8	9
Europe and Central Asia	20	22	41	95	96	5	4
Latin America and the Caribbean	19	23	122	95	91	10	7
South Asia	*56*	*73*	*454*	*70*	*45*	*28*	*25*
Sub-Saharan Africa	86	144	881	73	48	29	28
India	*52*	*69*	*450*	*74*	*47*	*34*	*30*

Source: UNDP Human Development Report 2010.

Table 15.3. Estimated Total Deaths ('000s) by Cause, 2004

	Cause of death					
	Diarrhea	Childhood Cluster Diseases	Leprosy	Japanese Encephalitis	Dengue	Perinatal Conditions
India	*516*	*295*	*2.1*	*6.1*	*5.2*	*920*
World (among 192 WHO member countries)	2,162	847	5.4	11	18.1	3177
Share of deaths in India (percent)	***23.8%***	***34.8%***	***38.2%***	***55.1%***	***28.8%***	***29%***

Source: Global Burden of Diseases, WHO 2008.

Note: India's share of population in the sample of 192 countries was about 17.4 percent.

The overall level of health status masks the large intra-country variations across states. In 2008, the difference in infant mortality rate (IMR) between the best state in India (Kerala) and the worst state (Madhya Pradesh) was nearly six fold (12 in Kerala and 70 in Madhya Pradesh). In general, the IMR in the four states with the highest rates (Madhya Pradesh, Orissa, Uttar Pradesh, and Rajasthan) was about double the IMR in the best four states in the country (Kerala, Tamil Nadu, West Bengal, and Maharashtra) (Table 15.4). Moreover, the rate of decline in IMR in the four worst states (highest IMR) has been much lower than in the four best states (lowest IMR). The average improvement index (based on Kakwani [1993] and Sen [1981]) indicate that in the 20-year period from 1988 to 2008, the average improvement index in the top four states was markedly higher than the average improvement index in the bottom four states (Table 15.4).

Table15.4. Level and Improvement in Infant Mortality Rate in Selected Indian States, 1988 and 2008

States	**IMR**		**Improvement Index 1988–2008, based on…**	
	1988	**2008**	**Kakwani (1993)**	**Sen (1981)**
Top Four States				
Kerala	28	12	0.25	0.70
Tamil Nadu	74	31	0.20	0.62
Maharashtra	69	33	0.17	0.56
West Bengal	68	35	0.16	0.53
Average (Top four)			*0.19*	*0.60*
Bottom Four States				
Madhya Pradesh	121	70	0.12	0.44
Orissa	122	69	0.13	0.45
Uttar Pradesh	124	67	0.14	0.48
Rajasthan	103	63	0.11	0.41
Average (Bottom four)			*0.12*	*0.45*

Source: IMR across states is based on figures of the Sample Registration System, reported by the Registrar General, India, in various issues of the *SRS Bulletin* and the Compendium of India's Fertility and Mortality Indicators 1971-1997, Registrar General 1999.

Note: Kakwani's index and Sen's index have been used to compare improvement in IMR because these indices take into account the differences in IMR in the base year across states. For calculating the improvement indices, the maximum and minimum values of IMR have been assumed to be 130 and 5, respectively.

Public Spending on Health and Health Infrastructure

Public Spending on Health: Important Features

It is believed that an important factor contributing to India's poor health status is its low level of public spending on health, which is one of the lowest in the world. In 2007, according to WHO's *World Health Statistics*, India ranked 184 among 191 countries in terms of public expenditure on health as a percent of GDP. In per capita terms, India ranked 164 in the same sample of 191 countries, spending just about $29 (PPP). This level of per capita public expenditure on health was around a third of Sri Lanka's, less than 30 percent of China's, and 14 percent of Thailand's (WHO, 2010). What is more, public spending on health as a percent of GDP in India has stagnated in the past two decades, from 1990–91 to 2009–10, varying from 0.9 to 1.2 percent of GDP.

While public spending on health care is low, the OOP expenditure by households has been large. In 2007, total expenditure on health in India (public and private) was about 4.1 percent of GDP, which was higher than the level in Thailand and around the levels of Sri Lanka and China (Table 15.5). In 2007, private spending in India constituted nearly 74 percent of the total spending on health (in contrast to 18 percent in the United Kingdom (Figure 15.2). Nearly 90 percent of this private expenditure in India was in the form of OOP expenditure on health by households (WHO, 2010), a share that is one of the highest in Asia (Van Doorslaer and others, 2007). The high OOP expenditure has put an increasing financial burden on the poorer sections of the population. Data from the National Sample Survey Organization (NSSO) in India indicate that between 1986-87 and 2004, the share of ailments not treated due to financial reasons has increased from around 15 percent to 28 percent in the rural areas. Part of this increased financial burden arises from the fact that the share of visits to private health facilities has increased in recent years. According to the NSSO data, the share of outpatient visits to public facilities has dropped from 25 to 20 percent and for inpatient visits from 60 to 40 percent (Selvaraj and Karan, 2009, cited in Shahrawat and Rao, 2011). Notably, outpatient treatments account for nearly three-fourths

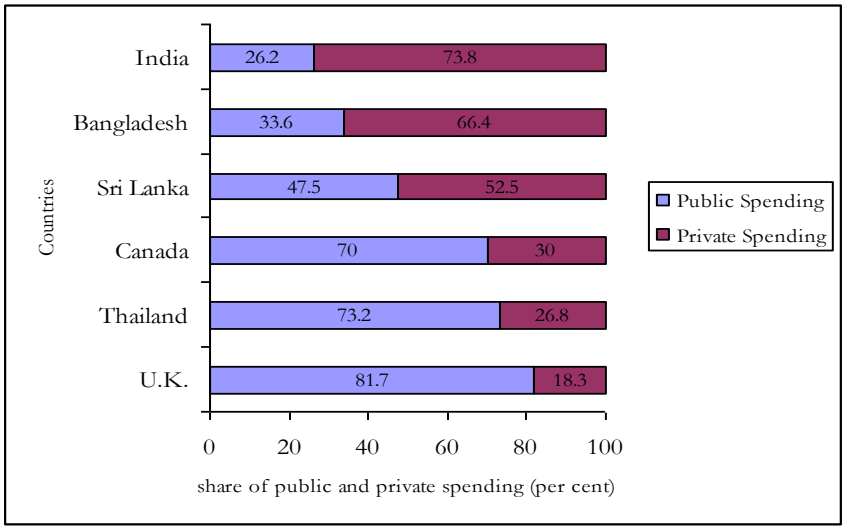
of OOP expenditure by households; a large part of this could be reduced through adequate provision of primary and secondary care (NSSO, 2007).

Table 15.5. Expenditure on Health in Selected Countries, 2007

	Public expenditure		Total expenditure	
	as percent of GDP	per Capita (PPP int $)	as percent of GDP	per Capita (PPP int $)
India	1.1	29	4.1	109
Bangladesh	1.1	14	3.4	42
Sri Lanka	2.0	85	4.2	179
China	1.9	104	4.3	233
Thailand	2.7	209	3.7	280

Source: World Health Statistics, 2010, WHO.

Figure 15.2. Public and Private Expenditure on Health in Selected Countries, 2007



Source: World Health Statistics, 2010, WHO

The skewed composition of public spending further reduces its effectiveness. A significant share of the spending is directed toward curative and tertiary health care services as opposed

to preventive, primary, and secondary care. According to the latest National Health Accounts data (for 2004-05), about 28 percent of total public expenditure was allocated for tertiary health care services, significantly higher than the target of 10 percent recommended by the National Health Policy of India. Also, an overwhelming portion of the expenditure is for wages and salaries, leaving little for non-salary (complementary) expenses like drugs and other material supplies. The expenditure is particularly skewed toward salaries in some of the poor performing states. For example, wages and salaries constituted around 83 and 85 percent of total health spending in the states of Madhya Pradesh and Orissa—the two states with the worst health indicators.

The nature of public spending has resulted in a grossly inadequate health infrastructure. The number of allopathic doctors, nurses, and midwives in India (when adjusted for their qualification) is less than a fourth of the WHO benchmark (Rao and others, 2011). This has led to recourse to unqualified medical practitioners in the rural areas (Rao, Bhatnagar and Berman 2009). Besides, the ratio of nurses to doctors in India is extremely unfavorable in comparison to some of the better performing countries. When adjusted for qualification, the ratio of nurses to doctors is about 0.6:1, that is, it is less than one nurse per doctor (Rao and others, 2011). In many developed countries this ratio is about 3:1, three nurses to one doctor. The low share of non-salary expenditure has also resulted in inadequate essential drugs at sub-centers (SCs), primary health centers (PHCs) and community health centers (CHCs) – the first three tiers of primary and secondary health care facilities in the rural areas. According to the facility survey conducted by the International Institute of Population Sciences (IIPS) in 2007-08, about 35 percent of the SCs and 30 percent of PHCs had less than 60 percent of the essential drugs required for primary care. Similarly, about a third of the PHCs had less than 60 percent of the basic refrigeration facilities required for primary care (IIPS, 2010).

Inter-State Differentials in Public Spending and Health Infrastructure

The level of public expenditure and health infrastructure as a whole is dragged down by some of the states. In 2008–09, the level of public spending on health in Bihar (the state

with the lowest per capita health spending) was less than half the level in Kerala and Tamil Nadu – the top two states in terms of health spending. Moreover, in recent years, the inter-state inequalities in health spending have increased. Thus, the difference between the per capita public spending in the top three states (Kerala, Tamil Nadu, and Punjab) and the bottom three states (Bihar, Madhya Pradesh, and Orissa) has increased, leading to a divergence between the two categories of states (Figure 15.3).

In general, the variation in per capita expenditure across states has increased over the years. Between 1993–94 and 2008–09, the coefficient of variation in per capita public spending across states has increased from 0.19 to 0.26 (Table 15.6). It is important to note that public expenditure on health is positively correlated with income levels by states. The correlation coefficient between per capita public spending on health and per capita GSDP were 0.7 and 0.8 respectively for 1995-96 period and 2004–05 period (Rao and Choudhury, 2008).

The low-expenditure states are also the states with relatively low per capita GSDP and have some of the poorest health indicators and infrastructure in the country. Madhya Pradesh and Orissa, the two states with the worst IMR in the country, have significantly worse access to health infrastructure and professionals than Kerala and Tamil Nadu, the two best states in the country in terms of IMR (Table 15.7). Apart from this low level of access to health facilities, there are large vacancies for doctors and paramedical staff in these states. Part of the reason for the large vacancies is the low availability of health workers. The number of health workers per 1,000 people in these states is, on average, half of that in the relatively better performing states. An important reason is that medical colleges are concentrated in the better performing and higher income states (Mahal and Mohanan, 2006).

Figure 15.3. Deviation of Per Capita Public Expenditure (from the Mean Value Across States) in Top Three and Bottom Three States in Terms of Health Expenditure, 2005–06 to 2008–09

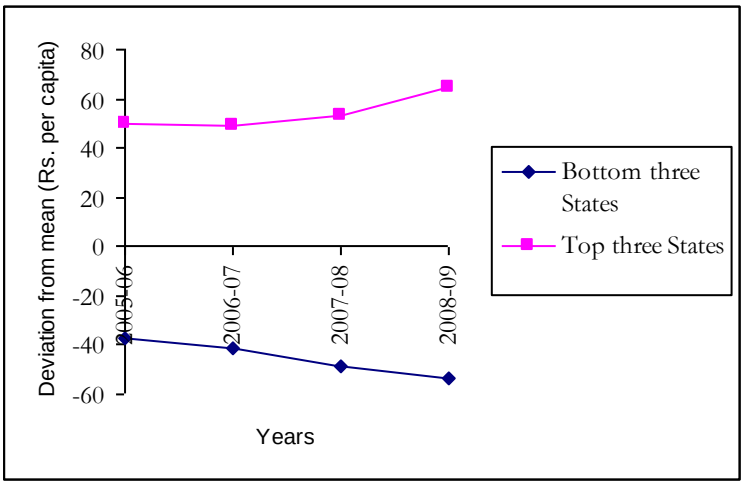


Table 15.6. Per Capita Public Expenditure on Health in 14 Major States

(Rupees)

	Per capita health expenditure		**Per capita NSDP**
	1993-94	**2008-09**	**2008-09**
Andhra Pradesh	75	402	40,902
Bihar	53	166*	13,663
Gujrat	82	320	49,251
Haryana	80	364	68,614
Karnataka	85	405	41,513
Kerala	100	507	49,316
Madhya Pradesh	81	214*	21,648
Maharashtra	86	351	54,867
Orissa	58	303	29,464
Punjub	110	348	52,879
Rajasthan	84	405	27,001
Tamil Nadu	98	421	45,058
Uttar Pradesh	70	269*	18,710
West Bengal	73	292	36,322
Standard Deviation	*15.3*	*89.1*	
Mean	*81.1*	*340.5*	

Coefficient of Variation	*0.19*	*0.26*	

Source: Per capita expenditure has been estimated using data from the finance accounts of individual states, compiled by the Comptroller and Auditor General of India. Per capita NSDP has been taken from Economic Survey 2010–11, Government of India.

Note: * Data for the year 2008–09 for Bihar is inclusive of the data for Jharkhand. Similarly, Data for Madhya Pradesh is inclusive of data for Chhattisgarh and that of Uttar Pradesh is inclusive of Uttarakhand. Data for 2008–09 includes off-budget expenditure under the National Rural Health Mission (NRHM).

Table 15.7. Indicators of Access to Health Care in Selected High and Low Expenditure States

Indicators	High expenditure states		Low expenditure states	
	Kerala	Tamil Nadu	Madhya Pradesh	Orissa
Average number of villages covered by a PHC, 2009	2	13	48	40
Percent of PHCs having at least 60% of cold chain equipment, 2007-08	97.2	94.8	49.4	34.9
Percent of vacancies for doctors at PHCs, 2009	0	0.5	53	38
Percent of GDMOs at CHCs, 2009	0	0	56	N.A.
Percent of PHCs having regular power supply, 2007-08	96.9	86.5	20.4	41.5
Percent of habitations connected by roads, 2009	91.15	98.55	40.68	50.15

Source: Data for the year 2009 has been taken from the *Bulletin on Rural Health Statistics* 2009, compiled by the Ministry of Health and Family Welfare. Data for the year 2007–08 has been taken from District-Level Household and Facility Survey (DLHS III) 2007-08, conducted by International Institute of Population Sciences (IIPS).

Recent Reforms for Increasing Allocation to Health Care

National Rural Health Mission (NRHM)

Low public expenditure allocation and its skewed interstate distribution were the major reasons for the central government's launching in 2005 of a major program, the National Rural Health Mission (NRHM). NRHM is a comprehensive program initiated to improve

access to effective health care for the poor residing in rural areas. The program covers the entire country but has a greater focus on 18 lagging states. It is being implemented since 2005 and spending on health care is expected to increase to 2-3 percent of GDP (from about 1 percent of GDP in 2005).

The important components of NRHM include the initiation of an Accredited Social Health Activist program -- a voluntary female community health program aimed at improving immunization rates, institutionalized deliveries, reproductive health care, and nutrition. NHRM also mandates improvements in health infrastructure, human resources for health, and availability of drugs. It is a flexible, decentralized program comprising

i. a mission flexible pool
ii. a reproductive-health flexible pool
iii. pulse polio immunization
iv. infrastructure maintenance, and
v. a national disease control program.

For allocating funds in the first two schemes, the states are divided into high-focus states and non-focus states. The states with poor health status are categorized into focus states. The funds for these schemes are allocated according to population, with focus states getting 30 percent higher weight.[4] The program was supposed to substantially increase the central government' allocation for NRHM (by 30 percent for the first two years and thereafter by 40 percent) until 2012, and the states were required to contribute an additional minimum of 15 percent of the central government's allocations or an increase of 10 percent in their health budgets every year over the period 2007 to 2012. In order to ensure that the funds would be transferred to the implementing agencies without delay, the transfers were made directly to the state-level societies, bypassing the budgets.

[4] Focus States with difficult terrain are given an additional weight age for the higher cost of service provision. The north-eastern States are considered as 'Special Category States' and are given a significantly higher weight age.

There are a number of problems with both the design and implementation of this program. In terms of the design, allocating financial resources on a per capita basis with an additional weight of 30 percent assigned to the focused states does not adequately take account of the requirements. Second, although the program requires the states to make matching contributions, it does not stipulate that the contribution should be additional, so the states can substitute expenditures on health in other areas to fulfill their matching requirements.

The implementation problems have been even more formidable. The large increases in central funding simply did not take place, and the actual expenditure incurred on the program by the central government was only a fraction of what was allocated. In 2009-2010, for example, the funding allocated for the program was Rs 115.9 billion, but the actual expenditure was just Rs 46.6 billion or 40 percent of that amount. Second, the pattern of distribution of actual expenditure was vastly different from the original allocation. That is because, when the states are unable to make matching contributions or unable to provide utilization certificates to the central government as required under the scheme, the funds are reallocated to the states by the central government, thereby completely altering the original pattern of interstate allocation.

Thus, although the program held much promise, the actual improvement in increasing the health expenditures in poor performing high-focus states has been lower than what was expected from the program. Public expenditure could not be increased as proposed, because neither the central government nor the states could find enough fiscal space. Secondly, the involvement of the states in the reform program was much less than desired. As the funds were directly transferred to the implementing societies, the states gave up their own supervisory and management role as well.

[B] Rashtriya Swasthya Bima Yojana (RSBY)

Another important reform initiative was the introduction of an insurance scheme, not by the Health Ministry, but by the Union Labor Ministry. In an attempt to provide financial protection against high OOP expenditure, in 2007 the Government of India introduced

Rashtriya Swasthya Bima Yojana (RSBY), a health insurance scheme. The scheme provides insurance coverage for selected hospitalization expenses and daycare procedures to people below the poverty line.[5] Under this scheme every poor (below the poverty line) family can access free hospitalization care and daycare procedures up to Rs 30,000 per annum in selected private and public health facilities. A maximum of five members of a family can be covered under the scheme on a floater basis. A transportation allowance of Rs 1,000 (with a maximum of Rs 100 per visit) is also extended to these families under the scheme.

While the state governments are responsible for identifying the eligible poor families for the scheme, the actual implementation of the scheme is done by insurance companies, which are selected through bids at the state level. The eligible families are provided with a smart card by the insurance company, and treatment can be received at the selected health facilities without cash transactions. The premium for the scheme (estimated to be a maximum of Rs 750 per family per annum) is shared between the central government and the state in the ratio of 75:25, subject to a maximum subsidy of Rs 565 per family per annum by the central government. For northeastern states, Jammu and Kashmir, the premium burden is shared between the central government and the states in the ratio of 90:10. Additionally, the central government also bears the cost of the smart cards at the rate of Rs 60 per card. The beneficiary family does not contribute to the premium but needs to pay Rs 30 per annum as a registration fee.

As of July 2011, the scheme was being operated in 385 (of the 640) districts and spanned 26 states. About 27 percent of all poor families in the country were enrolled under the scheme. However, even in the districts where the scheme was being operated, the scheme covered less than 50 percent of the poor population. While some states, like Andhra Pradesh, have chosen not to implement RSBY but implement their own state insurance scheme (like *Aarogyasri*), others, like Karnataka, have implemented RSBY in selected districts along with state-level health insurance schemes (like *Vajpayee Aarogyasri*).

[5]The scheme was initially aimed at providing financial protection to informal workers and was therefore initiated by the Ministry of Labour and Employment. As the bulk of the informal workers were poor, the scheme was designed to cover the entire below-poverty population.

Expenditure Needs of States, the Transfer System and Fiscal Space for Health Care Expenditure in States

Expenditure Needs of States and the Transfer System

The provision of health care in India is predominantly the responsibility of state governments. However, the ability of these governments to spend on health care, particularly the low-income states, is constrained by a number of factors. First, most of the low-expenditure states are also low-income states (as discussed in the previous section) and have limited capacity for generating additional resources. Central transfers to these states have not been able to offset their fiscal imbalances fully, and this is mirrored in the strong correlation between per capita health spending and income levels across states. Besides, most of the existing resources of the states are used up to meet their committed liabilities toward wages, salaries, interest payments, and pensions, leaving little room for re-prioritizing expenditures toward the health sector. Fiscal responsibility legislation has now been enacted in all states as well, and there is very little room to increase allocations to the health sector. Since these states have some of the poorest health infrastructures, improving the level of expenditure and the state of health infrastructure in these states assumes particular importance.

For these reasons, and considering the significant externality associated with the health sector, it is necessary for the central government to introduce specific-purpose transfers to these states to ensure a certain minimum standard of basic health services. At present, transfers from central government to states (specifically for health) are primarily through the NRHM, and as discussed in the previous section, the grants given under the program do not have any relationship with the requirements. The Twelfth Finance Commission provided grants to selected states for improving health indicators, but in effect, they recommended that the grants cover only 30 percent of the gap between the state's per capita health expenditure and the expenditure requirements assessed by them for each of the states.

Interestingly, most of the low-income states assign greater priority to spending on the health sector, as evidenced by a relatively higher share of their income GSDP as well as higher percentage of their total expenditures on health. Despite this, they have some of the lowest per capita expenditure on health in the country. An analysis of health expenditure as a percent of GSDP across states indicates that the low-income, low-expenditure states spend a relatively higher share of their GSDP on health. In 2008–09, health expenditure as a percent of GSDP in low-income states like Bihar and Uttar Pradesh was more than double that in high-income states like Punjab, Haryana, Maharashtra, and Gujarat (Table 15.8). As a percentage of total budgetary expenditure also, states like Uttar Pradesh and Rajasthan spend a significantly higher share than the high-income states. In fact, the four highest-income states of Punjab, Haryana, Maharashtra, and Gujarat rank at the bottom in terms of health expenditure as a percent of budgetary expenditure.

Additional transfers from the central government have to be directed toward primary care and the first level of secondary care by strengthening the related health infrastructure and personnel at the state level. At present, according to the norms set by the central government, a three-tier health care system, which includes the sub-centers, primary health centers and the community health centers, should be set up depending upon the population. As mentioned, a sub center must be provided for every 5,000 people in the plains and for every 3,000 people in the hilly or tribal regions; a public health center must be established for every 30,000 people in the plains and every 2,000 people in the hilly/tribal regions, and a community health center must be provided for every 120,000 people in the plains and for every 8,000 people in hilly/tribal regions. The requirements for the subcenters, health centers and community health centers as well as referral hospitals are specified in norms of the Indian Public Health Standards. Strengthening these tiers would be important not only to facilitate basic primary and secondary care but also to reduce the burden and expenditure share at the tertiary level.

Designing the transfer scheme would require estimating the gaps between the expenditure needs and actual expenditures. A preliminary estimation of expenditure needs of different states based on the norms indicated above suggests that an additional amount of about Rs 3

billion (at 2008-09 prices), or about 0.6 percent of GDP, will be required to be spent across 16 major states in India.[6] About 65 percent of these additional transfers will be required in just the six states that have the poorest health indicators in the country, namely, Bihar, Uttar Pradesh, Madhya Pradesh, Orissa, Assam and Rajasthan. If the states are enabled to incur expenditures as required according to the norms, it is clear from Table 15.8 that the coefficient of variation of per capita expenditure across the 16 states would decline from about 0.3 in 2008–09 to about 0.15 after such a transfer of resources to states.

Much of the additional expenditures will have to be generated at the central level for two important reasons. The states do not have broad-based taxes except the sales tax, and considering the fact that they have predominant responsibility for providing social services and coequal responsibility for providing physical infrastructure, resources will have to come by way of transfers from the central government. Second, the significant externalities implicit in health expenditures warrant that the central government should bear a substantial proportion of the cost. Given the high degree of externality in health spending, it is important for the central government to ensure a certain minimum specified level of spending on health, which is best achieved through specific purpose matching transfers. However, while designing the specific-purpose transfers, it is important to ensure that the transfer system is incentive-compatible in the sense that it leads to stimulation and not substitution at the state level and also that the states with low revenue capacity can utilize the funds by making matching contributions. In other words, matching ratios can be varied among the states depending on their capacity to make matching contributions[7].

[6]The norms have been adjusted for the percentage of tribal population in each state. State-level gaps in the number of SCs, PHCs and CHCs have been estimated on the basis of the number of facilities reported in the *Bulletin of Rural Health Statistics 2009*. In existing SCs, PHCs and CHCs, gaps in manpower, drugs and equipment have been considered for costing. Data on gaps in availability of medicines and equipments in existing facilities have been compiled from the District-Level Household and Family Survey (DLHS III) 2007-08. On gaps in availability of manpower, data have been compiled from both Bulletin on Rural Health Statistics 2009 and District-Level Household and Family Survey (DLHS III) 2007-08. The ratio of salary to non-salary expenditure in each facility is assumed to be 70:30.

[7] During the Eleventh Plan period, under the NRHM, the states were required to contribute 15 percent of the central government's contribution. However, only a few states could contribute this amount and the shortfall was particularly glaring in the case of the focus states. In the event, the states could not utilize the funds from the central government. Furthermore, even those states that made the contribution seem to have cut down other aspects of health expenditures.

Table 15.8. Additional Resources Requirement and Per Capita Expenditures in 16 Major States

	Additional resources required (Rs crore) (2008-09 prices)	Per capita expenditure (2008-09) (current prices) (Rs)	Per capita expenditure (after transfer) 2008-09 prices (Rs)	Ratio of per capita expenditure (*after* to *before* transfer) (Rs)
Andhra Pradesh	2,191	353	617	1.7
Bihar	4,396	137	602	4.4
Chattishgarh	701	258	549	2.1
Gujrat	1,219	280	494	1.8
Haryana	555	315	764	2.4
Jharkhand	1,097	257	440	1.7
Karnataka	1,502	358	617	1.7
Kerala	764	463	688	1.5
Madhya Pradesh	2,202	198	515	2.6
Maharashtra	1,906	316	491	1.6
Orissa	1,480	234	604	2.6
Punjub	538	305	497	1.6
Rajasthan	1,251	315	506	1.6
Tamil Nadu	1,170	374	550	1.5
Uttar Pradesh	6,404	257	589	2.3
West Bengal	2,777	248	566	2.3
All India (including special category States)	30,152	430	689	1.6

Fiscal Space for Health Care, Stimulation and Substitution Effects:

The estimated additional expenditure requirement just to provide subcenters, health centers, and community health centers according to the norms is estimated at 0.6 percent of GDP.

There are additional administrative expenditures and requirements for providing health facilities in urban areas, and these could add up to another 0.4 percent. Thus, a minimum of one percent of GDP will be required in the medium term to ensure minimum levels of health care as per the norms. The High Level Expert Group on Universal Health Coverage for India has recommended that public spending on health should increase to 2.5 to 3 percent in the medium term (GoI, 2011).

Finding this additional fiscal space will be a formidable challenge. On the one hand, calibrating a sustainable fiscal policy in India requires significant compression of consolidated fiscal deficit (of both the central government and the states) as a ratio of GDP, and the Fiscal Responsibility Act requires the compression of fiscal deficit from 7.6 percent in 2010–11 to 5.4 percent by 2014–15. At the state level, there are competing demands on the resources of the states and additional fiscal space from mobilizing more resources, and reprioritization may not be large. The pattern of unconditional transfers from the Finance and Planning Commissions in the medium term is predictable and is not likely to lead to substantial increases in health care spending. Much of the increase, therefore, will have to come from specific-purpose transfers from the central government to the states.

It is important in this context to determine the impact of the central government transfers – both unconditional and specific-purpose transfers—on states' expenditures on health. In a median voter model, it is shown that unconditional transfers are a "veil" for tax cuts, and even when there are increases in unconditional transfers, the response to this on health care spending would be similar to the response to general increases in incomes (or own revenues), although in actual empirical studies there is considerable evidence of the "flypaper effect," that is, of a significantly higher response of expenditures to unconditional transfers.[8]

As far as specific-purpose transfers are concerned, whether the expenditures of the aided sector get stimulated or substituted depends on the way in which the transfer scheme is

[8] For a recent analysis of the "flypaper effect", please see Inman (2008).

designed. As mentioned in the previous sections, despite a substantial increase in central government transfers to augment spending on the health sector, the aggregate spending has not shown much increase. However, there are no econometric estimates of the extent of stimulation or substitution. A recent cross-country study of international aid to the health sector in developing countries shows a significant substitution of domestic financing of health sector with international aid (Lu and others, 2010).

Considering the importance of increasing the overall public spending on health and the fact that the central government will have to make substantial additional grants to augment spending on the sector, the fiscal space analysis should incorporate the effect of central grants on actual health expenditures. Measurement of the impact of central grants on states' own spending on health care is important for evaluating the design of the transfer system, which is attempted in the following:

In India, given that the states have a predominant role in the provision of health care, the possibility of additional fiscal space at the state level can be due to: (i) increase in own revenues of the states; (ii) increase in general-purpose transfers from the Finance and Planning Commissions, which includes shared taxes and plan and non-plan grants; (iii) increase in specific-purpose transfers for the health sector; and (iv) changes in prioritization in favor of the health sector. In India, foreign aid is not an important factor in determining the fiscal space nor are earmarked taxes important.

Thus, increases in per capita expenditure on health in a state excluding the specific-purpose transfers in a year [$(\Delta\ (PC\_OHE)_{it})$] depend on increases in own revenues of the state [$\Delta\ (PC\_SOR)_{it}$], increases in unconditional transfers received from the central government [$\Delta\ (PC\_GPGC)_{it}$], increases in specific-purpose transfers [$\Delta\ (PC\_CGH)_{it}$] and changes in priority assigned to the health spending in overall budget allocation [$\Delta\ (SPH)_{it}$]. Thus,

$$\Delta\ (PC\_OHE)_{it} = \alpha + \beta\ \Delta\ (PC\_CGH)_{it} + \gamma\ \Delta\ (PC\_SOR)_{it} + \psi\ \Delta\ (SPH)_{it} + \tau\ \Delta\ (PC\_GPGC)_{it} + \varphi\ (\text{State Dummies}) + \sigma\ (\text{Year Dummies}) + \varepsilon_{it}$$

Where:

Δ $(PC\_OHE)_{it}$ = $\{(PC\_OHE)_{it}$ - $(PC\_OHE)_{it-1}\}$ or changes in per capita own health expenditure (from the previous year) of state 'i' in year 't';

Δ $(PC\_CGH)_{it}$ = $\{ (PC\_CGH)_{it}$ - $(PC\_CGH)_{it-1}\}$ or changes in per capita central government's grant (from the previous year) for health to state 'i' in year 't' ;

Δ $(PC\_SOR)_{it}$ = $\{ (PC\_SOR)_{it}$ - $(PC\_SOR)_{it-1}\}$ or changes in per capita own revenues (from the previous year) of State 'i' in year 't';

Δ $(SPH)_{it}$ = $\{ (G_{hi}/G_{bi})_t$ - $(G_{hi}/G_{bi})_{t-1}\}$ or changes in the ratio of public expenditure on health to total budget expenditure of the 'i^{th}' state in the year 't' over the previous year; and

Δ $(PC\_GPGC)_{it}$ = changes in per capita general purpose grant by the central government to state 'i' in year 't' = (tax devolution + plan and non-plan grants).

The estimate of β in the model measures the impact of a one-unit increase in the per capita health grant on the per capita health expenditures of the state from its resources including unconditional transfers. A significant negative sign for β would indicate that all else being equal, additional central health grants lead to a lowering of states' own health expenditure – an indication that states substitute their own health expenditure with additional central government health grants. A significant positive sign would indicate stimulation of a state's spending when higher central health grants were received. States' own health expenditure may also be affected by changes in other sources of state revenues and by priority accorded to health by the state. We use a set of 'control variables' in the regression specification to account for the effect of these factors.

We have taken the data for 14 major states in India for the period 1991-92 to 2007-08 to estimate the effect of changes in states' per capita own revenues, unconditional central

transfers, specific-purpose central transfers for the health sector, and changes in priorities of the states on the changes in states' per capita health expenditures (excluding per capita specific purpose transfers) (Table 15.9). A two-way fixed effects panel data model has been used to estimate the above specification. All variables (excluding population) have been sourced from the finance accounts of individual states published by the Comptroller and Auditor General of India. Variables expressed in per capita terms have been converted at constant prices for estimation (1999-2000 prices). Population figures have been sourced from the Central Statistical Organization. Since 2001-02, some of the central government health grants to states were being transferred directly to implementing agencies, bypassing the states' budgets, so the regression has also been estimated separately for two sub-periods: 1991-92 to 2000-01 and 2001-02 to 2007-08.

Table 15.9. Regression Results - Dependent Variable: Changes in Per Capita Health Expenditure of Central Health Sector Grants

	1991-2007 (Model I)	**1991-2000 (Model II)**	**2001-2007 (Model III)**
Center's Health Grant	– 0.952*** (0.074)	– 0.777*** (0.114)	– 1.059*** (0.109)
States' Own Revenues	0.012*** (0.003)	0.015*** (0.004)	0.0001 (0.006)
States' Priority to Health	17.649*** (1.828)	15.03*** (2.038)	19.487*** (4.231)
General (unconditional)Transfers by Center	0.019*** (0.007)	0.014 (0.011)	0.013 (0.01)
Constant	18.252*** (3.561)	17.17*** (3.885)	3.552 (5.035)
State Specific Fixed-effects	Yes	Yes	Yes
Time Specific Fixed-effects	Yes	Yes	Yes
Number of Observations	224	126	84
R-square	0.69	0.62	0.77

***p < 0.01; **p < 0.05;

Note: t-statistics are given in parentheses. The standard errors are robust to cross-sectional heteroskedasticity and within-panel serial correlation.

In the two sub-periods as well as for the entire period, the coefficient of central government health grants β is significantly negative, which implies that increases in the health grants by the central government result in the substitution of health expenditure by the states from their own resources. The sign and significance of the coefficient is consistent across all the sub-periods. Thus, the results clearly show that increases in the central government grants for the health sector have not led to increases in the states' health expenditure.

The states receiving the additional grants have been reducing the expenditures on health from their own resources. Interestingly, the magnitude of the coefficient is significantly larger in the later sub-period than in the earlier period. With most states experiencing relatively higher fiscal stress in the later period than in the earlier period, this possibly indicates that the substitution effect is stronger in the later sub-period, which is a period of fiscal stress.

The regression estimate presented in Table 15.9 also shows that the changes in per capita revenues have a significant impact on per capita health expenditures when the whole period (1991-2007) is considered. This is also true of the first sub-period (1991-2000), but the coefficient is not significant in the second sub-period. Perhaps the reason for not increasing health expenditure in response to increased revenues in the post-2000 period may be explained by the focus on fiscal adjustment to adhere to the targets set by fiscal responsibility legislations. It is also seen that the coefficient of unconditional transfers does not show evidence of a significant flypaper effect. The coefficients are broadly similar to those of per capita own revenues. The changes in priority assigned to the health sector clearly show a significant impact on changes in per capita health expenditures.

Also, all the control variables are significant in the entire time period (Table 15.9 Model 1), which reflects the importance of these variables in determining the level of health expenditure in states. Besides, in the later sub-period (Table 15.9 Model 3), the coefficient of states' own revenues is insignificant possibly due to the fact that in the later period, due to the Fiscal Responsibility and Budget Management Act, states were constrained to expand expenditure from their own revenues as they were mandated to bring down the fiscal and

revenue deficits. On the whole, the preceding analysis points toward the fact that states substitute health expenditures incurred out of untied resources at the state level with additional grants received from the central government for the health sector. This substitution effect appears to be higher in periods of higher fiscal stress.

Concluding Remarks

This paper analyzes public spending on health care in India. Specifically, it analyzes the nature of public spending on health and its impact on health infrastructure and health status of the population It also discusses the recent reform attempts to augment spending on health care through specific-purpose transfers to states and the health expenditure needs of States. Further, it analyzes the fiscal space for health care expenditure at the State-level and the stimulation and substitution effects of Central transfers for health.

The Indian health care system is characterized by low levels of public spending on health care; poor quality in health care services, with adverse effects on the population's health status; a lack of focus on preventative health care; and dependency of the population, particularly the poor, on private health care providers and consequently high OOP spending and immiseration.

Reforms in the health sector will have to address the need for increasing public spending on health care, focus on preventative health care, ensure greater access to health care by the poor, and significantly improve the productivity of public spending. Not only is public spending on health care in India too low, but its distribution across the country is very uneven. Per capita health care expenditure in the poorest state, Bihar, was Rs. 166 in 2008-09, whereas that same year it was Rs 421 in Tamil Nadu and Rs 507 in Kerala, relatively more affluent states. This is in spite of the greater emphasis given by the low-income states to health care spending. The correlation coefficient between per capita expenditures and per capita GSDP was 0.7 and 0.8 respectively for 1995-96 period and 2004-05 period.

Considering both the existence of a significant vertical imbalance and the fact the health is an important merit good, much of the additional resources for health care will have to come from the central government. Increasing public spending on health care in low-income states will require designing specific-purpose transfers with matching contributions from the states. Such transfers should be equalizing and should not lead to a substitution of states' expenditures on health care from their own resources.

The paper reviews the introduction of NRHM, an important specific-purpose transfer program introduced by the Government of India in 2005. It shows that the objective of increasing the expenditures to 2 percent of GDP has not been fulfilled, partly because the low-income states could not avail the grants by making their own contributions and could not afford to pay for the current component of spending. Furthermore, econometric estimates show significant substitution of central grants with states' spending from their own resources. These findings underline the need to redesign the transfer system. Furthermore, the focus of NRHM is on rural areas, and there is no program to create health infrastructure in urban areas.

It is imperative for the central government to embark on a major expansion of health infrastructure in both rural and urban areas of the country in its 12th Plan (2012-13 to 2016-17). This calls for a significant increase in expenditure. Our estimates show that an additional one percent of GDP would be necessary in the medium term to provide basic health care services as per the norms. Finding additional fiscal space will be a major challenge. Calibrating a sustainable fiscal policy will require additional fiscal adjustment of over two percentage points of GDP as set out in the Fiscal Responsibility Act, and with competing demands for additional spending for education and food security, which are supposed to claim an additional 2 percent of GDP, creation of fiscal space for spending on health care during the 12th Plan will be very challenging.

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