

Government Health Expenditure in India: A Benchmark Study

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I. Introduction

It is well known that health expenditure in India is dominated by private spending. To a large extent this is a reflection of the inadequate public spending that has been a constant if unfortunate feature of Indian development in the past half century. This is particularly unfortunate because of the large positive externalities associated with health spending, which make health spending a clear merit good. The greater reliance on private delivery of health infrastructure and health services therefore means that overall these will be socially underprovided by private agents, and also deny adequate access to the poor. This in turn has adverse outcomes not only for the affected population but for society as a whole. It adversely affects current social welfare and labour productivity, and of course harms future growth and development prospects.

This is why the perceptions that government spending on health has been further undermined during the period of economic liberalisation since the early 1990s create concern, and need to be investigated. This study seeks to examine the actual pattern of government spending on health and related areas (particularly, family welfare and child development) by both central and state governments. In this section, the theoretical arguments for public intervention and need for public expenditures in health are discussed, and the international experience in this regard is considered. In the following section, the broad patterns of aggregate health spending in India are analysed, along with the shares of public and private expenditure and the significance of health spending in household budgets. The third section contains an analysis of central government budgets on health, family welfare and child development over the period 1993-94 to 2003-04. The fourth section takes up the health budgets of state governments, with special attention to patterns in 15 major states. The fifth section considers some of the implications for health outcomes – not only life expectancy, infant mortality and similar indicators, but also evidence on morbidity. Some of the recently released results of NFHS-3 for 5 states are considered in relation to the evidence on government health expenditure in these states. The final section draws some preliminary conclusions and suggests areas of future

research and specific question that merit more detailed investigation in the basis of these conclusions.

The theoretical case for public expenditure on health

There is a consensus among social scientists that health care is different from other goods and services, because of greater likelihood of “market failure”. The two main characteristics of health care which lead to market failure and thus necessitate state intervention are the presence of externalities and information asymmetries.

An externality results when an action of an agent has an effect not only upon the agent but also upon others. If a good or service not only benefits those who purchase these but others as well, then there is said to be a positive externality in its consumption. Conversely, a particular action of a producer may generate a negative externality, such as pollution. In the case of positive externalities, the operation of market forces alone would lead to sub-optimal consumption and production of the relevant good or service. This necessitates state intervention in order to ensure that sufficient resources are directed to the production of such goods or services, which in turn would result in an increase in the society’s welfare.

It has been argued that such externalities are less evident for general health care services such as physician and hospital care, and greater in the area broadly known as “public health”. The latter relate to interventions targeted at overall conditions of nutrition and sanitation that determine health, as well as communicable diseases which are passed either directly among humans or indirectly through the physical environment. An action taken by one person (e.g. ensuring clean, safe water, immunizing oneself against, or seeking treatment for, a communicable disease) generates direct health benefits for other individuals, through reduced rates of disease. Clearly, purely market-oriented or individually based activities would ignore the wider positive external effects, and therefore yield less than socially optimal levels of such activity. However, even general health care services that apparently affect only individuals have positive externalities, not only because of the social costs of morbidity, but because inequalities in

health care create other social concerns. These positive externalities make government intervention essential. Such intervention can take the form of price subsidies to encourage or spread the consumption of health care services, or direct public provision of such services.

Asymmetric information reflects any situation in which one party to any contract or exchange has access to some information that is not known to the other party. Such information asymmetries, primarily between the service provider and patient, pervade the health sector and cause market failure in both health care and health care insurance markets. For example, in any society, patients know best how improvements in the health affects their own well-being, while providers have better information regarding both the causes of ill-health and the effectiveness of alternative health care services in restoring health or preventing the further deterioration of health. There are also problems of “incentive incompatibility”, in which the interests of the patient and the health care provider need not coincide. These point to the need for government intervention in the form of regulation. Such regulation can take the form of licensing of health care providers, limits on advertising, insistence on some professional norms that prohibit low quality, etc. Such regulation has to ensure balance between the need to increase welfare by improving or ensuring quality, and the welfare reducing effects of inadvertently granting monopoly powers to providers.

Therefore from both the efficiency and equity grounds there, is no alternative to the public provision of health care. Even for the success of an insurance system based on private provision, increased public health spending and reforming of public health facilities are necessary. This is what makes the theoretical case for health expenditure by the government.

The international experience

Health expenditure is highly unequal across the globe. As is to be expected, the developed countries spend the most on health per person. OECD countries accounted for less than 20 per cent of the world's population in the year 2000 but were responsible for

almost 90 per cent of the world's health spending. Therefore 80 per cent of world's population spent only 10 per cent of the total expenditure on health. This includes people in the Asia-Pacific as well as African and Latin American countries. Africa accounts for about 25 per cent of the global burden of disease but only about 2 per cent of global health spending. (World Health Report, 2003).

Similarly, health expenditure, both in terms of percentage of GDP spent on health and per capita health expenditure, is much higher in the developed countries, as evident from Table 1. The share of GDP spent on health ranges from a low of 1.6 per cent in Azerbaijan to 13.9 per cent in the USA. Similarly there is a very wide variation of per capita health expenditure across countries, which is typically extremely low in developing countries compared with most of the developed countries. The range in 2001 was from \$14 in Ethiopia to \$4877 in the USA.

What is also notable from Table 1 is the much higher ratio of public health spending to private spending in the developed countries. By contrast, in middle developed and low developed countries, either private expenditure dominates or there is very little difference between the shares of private and public expenditure, although in general both tend to be low. It is notable that India has the lowest ratio of public to private health expenditure among all the countries described in this table, including the poorest countries. Further, all the private expenditure in India (as in some other countries) is constituted by out-of-pocket expenses. This is inherently regressive and puts a disproportionate burden for health care on poor households.

Table 1: Health Expenditure and Health Indicators in selected countries.

HDI Rank	Country	Health Exp. as % of GDP (2001)		Per Capita Exp on Health (PPP US \$)	Out-of-pocket Exp as % of Private Exp (2001)	Life Expectancy at Births (2001)	Infant Mortality Rate Per 1000 live Births (2001))	Per Capita GDP (\$) (2001)
		Public	Private					
1	Norway	6.9	1.2	2,920	96.8	78.7	4	36974
2	Iceland	7.6	1.6	2,643	55.2	79.6	3	27032
3	Sweden	7.5	1.3	2,270	100	79.9	3	23680
4	Australia	6.2	3	2,532	59.6	79	6	19054
7	U S A	6.2	7.7	4887	26.5	76.9	7	34946
8	Canada	6.8	2.8	2,792	52.3	79.2	5	22385
9	Japan	6.2	1.8	2,131	74.9	81.3	3	32540
11	Denmark	7	1.5	2,503	90.8	76.4	4	30265
13	U K	6.2	1.4	1989	55.3	77.9	6	24186
18	Germany	8.1	2.7	2,820	42.4	78	4	22418
21	Italy	6.3	2.1	2,204	82.1	78.6	4	18928
25	Cyprus	3.9	4.3	941	98	78.1	5	11566
47	Croatia	7.3	1.6	726	100	74	7	4558
52	Cuba	6.2	1	229	76.8	76.5	7	2234
55	Mexico	2.7	3.4	544	92.4	73.1	24	6150
58	Malaysia	2.1	1.8	345	92.8	72.8	8	3748
59	Panama	4.8	2.2	458	81.2	74.4	19	3383
65	Brazil	3.2	4.4	573	64.1	67.8	31	2888
64	Colombia	3.6	1.9	356	65.2	71.8	19	1924
86	Maldives	5.6	1.1	263	100	66.6	58	1947
88	Georgia	1.4	2.2	108	99.7	73.4	24	601
89	Azerbaijan	1.1	0.5	48	97.7	71.8	77	679
96	Turkey	3.6	1.5	294	98.8	70.1	36	2131
99	Sri Lanka	1.8	1.9	122	95	72.3	17	849
104	China	2	3.4	224	95.4	70.6	31	918
112	Indonesia	0.6	1.8	77	91.8	66.2	33	678
109	Vietnam	1.5	3.7	134	87.6	68.6	30	413
120	Egypt	1.9	2	153	92.2	68.3	35	1425
127	India	0.9	4.2	80	100	63.3	67	462
131	Myanmar	0.4	1.7	26	99.6	57	77	1027
139	Bangladesh	1.6	2	58	93.2	60.5	51	332
143	Nepal	1.5	3.6	63	93.3	59.1	66	231
144	Pakistan	1	3	85	100	60.4	84	401
140	Congo	1.4	0.8	22	100	48.5	81	777
163	Zambia	3	2.7	52	71.8	33.4	112	344
165	Chad	2	0.6	17	80.9	44.6	117	198
169	Ethiopia	1.4	2.1	14	84.7	45.7	116	93

Source: World Health Report 2003, Human Development Report 2003 & UNTCAD Report 2002

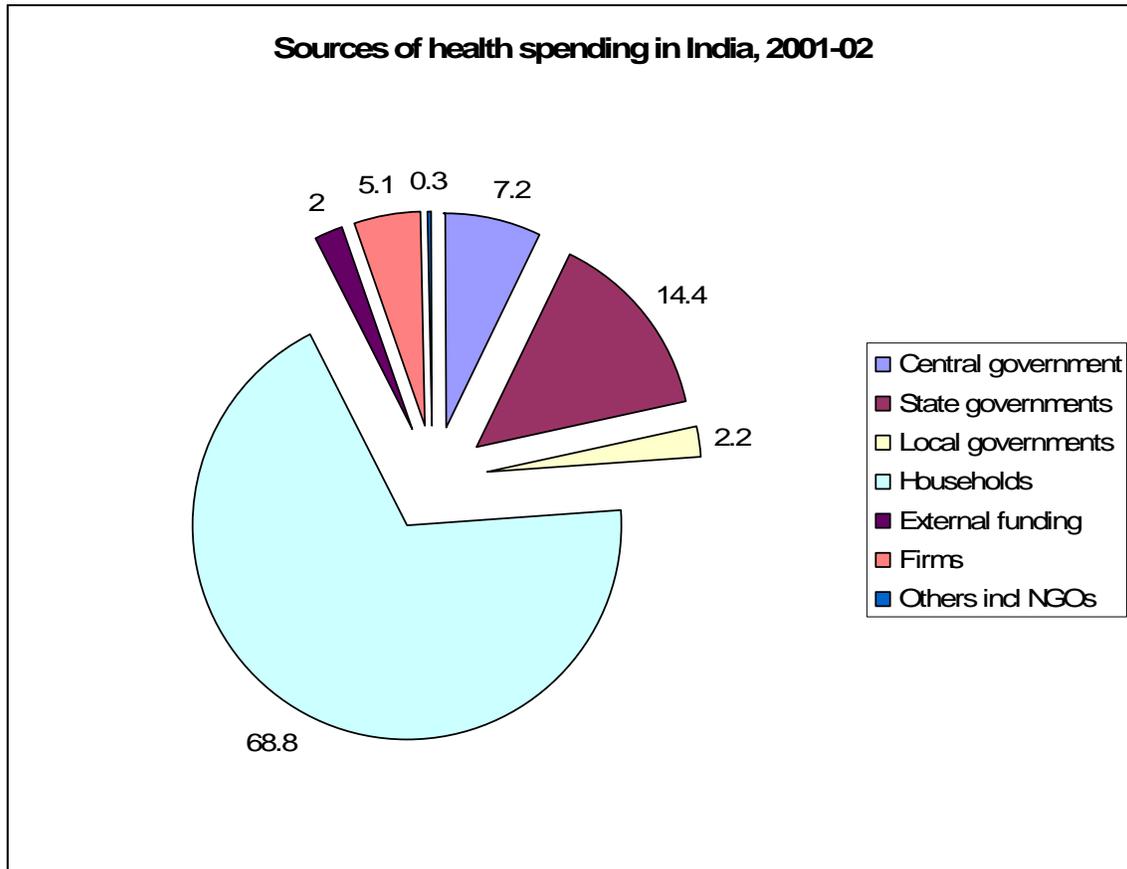
II. Patterns of health expenditure in India

The first systematic analysis of the distribution of health spending in India by source of funds was published in the National Health Accounts of India, 2001-02. The results are shown in Chart 1, and confirm the widespread perception that private households account for the bulk of health expenditure. According to this estimate, households accounted for more than two-thirds of health spending in the country, and around three times the amount of all government expenditure taken together, by central, state and local governments. Employers (firms) account for only 5 per cent, but what is especially notable is the negligible role played by both external sources and others including NGOs. Despite the reported increase in foreign aid for dealing with HIV-AIDS and similar issues, all external sources taken together accounted for only 2 per cent of total health spending¹, while NGOs accounted for only 0.3 per cent.

More recent estimates suggest that the role of households has increased even more substantially in the most recent period. According to the Report of the National Commission on Macroeconomics and Health, 2005, households undertook nearly three-fourths of all the health spending in the country. Public spending was only 22 per cent, and all other sources accounted for less than 5 per cent. As Table 2 shows, both the per capita spending and the share of households in this varied widely across states. Per capita spending in the state with the highest rate (Goa) is nearly 7 times that of per capita spending in the state with the lowest per capita spending (Meghalaya). Interestingly, the share of household spending is lowest in Meghalaya, but was among the highest in Bihar which has relatively low per capita spending. There are many states where households undertake more than 80 per cent of all health spending, indicating an exceptionally high burden upon them.

¹ However, some foreign aid – that going directly to governmental sources – is included in the health expenditure of central and state governments.

Chart 1: Sources of health spending in India



Source: National Health Accounts for India, 2001-02

It should be noted that this distribution is extremely skewed by international standards. as already evident from Table 1. In developed countries, the share of public spending in total health expenditure varies from around half (in the United States) to more than four-fifths (in some countries of the European Union). Even in the developing world, the ratio is 2:1 for public to private health expenditure. The exceptionally high burden placed upon households in the Indian context reflects the inadequate quantity and quality of public health service delivery.

While there is no very clear pattern, in general, it appears that the burden on households is higher where public spending is also low. This is explored in more detail in the final section on health outcomes.

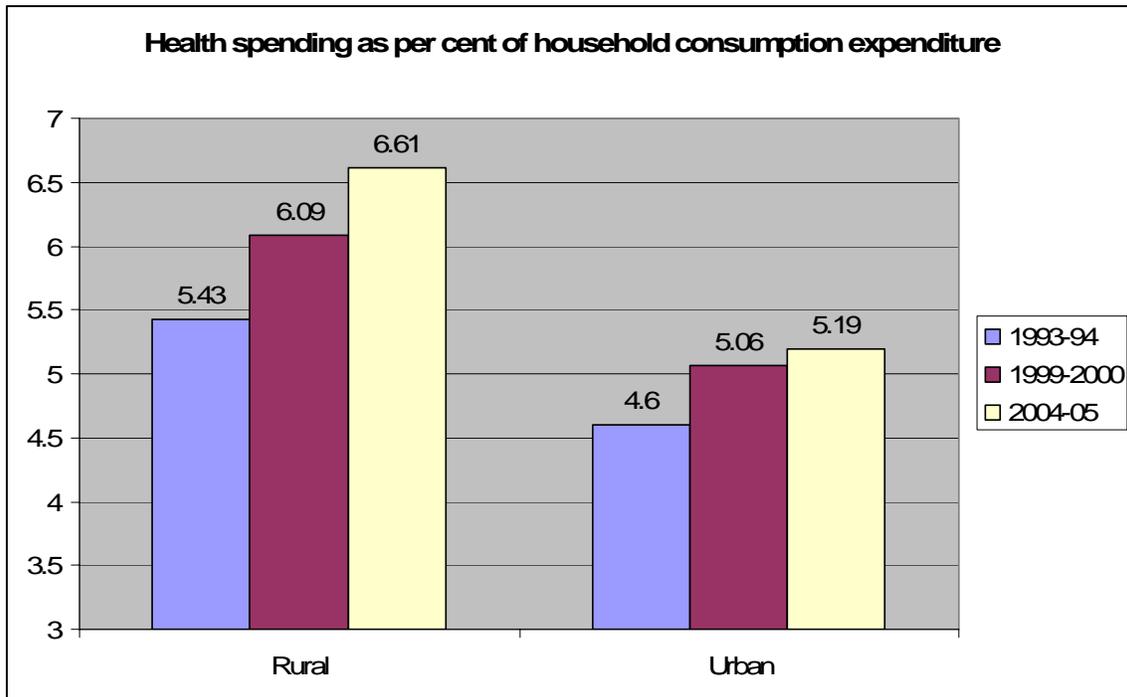
Table 2: Health care spending in India, 2004-05

State	Per capita expenditure (Rs.)	Per cent spent by		
		Household	Public	Other
Andhra Pradesh	1118	73.4	19.4	7.2
Arunachal Pradesh	4365	86.5	13.5	0
Assam	1347	80.8	17.8	1.4
Bihar	1497	90.2	8.3	1.5
Delhi	1177	56.4	40.5	3.1
Goa	4564	79.2	17.5	3.3
Gujarat	1187	77.5	15.8	6.7
Haryana	1786	85	10.6	4.4
Himachal Pradesh	3927	86	12.4	1.6
Jammu & Kashmir	2082	77.3	20.7	2
Karnataka	997	70.4	23.2	6.4
Kerala	2952	86.3	10.8	2.9
Madhya Pradesh	1200	83.4	13.6	3
Maharashtra	1576	73.3	22.1	4.6
Manipur	2068	81.2	17.2	1.6
Meghalaya	664	36.5	58.4	5.2
Mizoram	1027	39.4	60.6	0
Nagaland	5338	91.7	7.6	0.7
Orissa	995	79.1	18	2.9
Punjab	1813	76.1	18	5.9
Rajasthan	808	70	24.5	5.5
Sikkim	2240	56.9	43.1	0
Tamil Nadu	933	60.7	26.6	12.7
Tripura	1101	69	27.4	3.6
Uttar Pradesh	1152	84.3	13	2.7
West Bengal	1188	78.4	17.3	4.3
Union Territories	598	85.1	8.8	6.1
All India	1377	73.5	22	4.5

Source: Report of National Commission on Macroeconomics and Health, Government of India, 2005

This distribution between public and private spending reflects a trend of gradually increasing household expenditure on health care. Chart 2 reveals that spending on health has been gradually increasing as a proportion of total household consumption. The increase has been especially notable in rural areas, where health now accounts for nearly 7 per cent of total household consumption expenditure. This in turn probably reflects three separate trends: the greater valuation placed on health such that even poor households are willing to spend and incur debt to ensure minimal health care; the worsening quality and spread of, and therefore the reduced access to, reliable public health services; and the increase in user charges and other effective charges upon consumers even in the public health system, as government-run hospitals and clinics that are starved of public funds resort to making citizens pay more for medicines, diagnostic procedures and surgical aids.

Chart 2: Health spending as per cent of household consumption expenditure, 1993-94 to 2004-05



Source: NSSO Surveys of consumption expenditure, 50th, 55th and 61st Rounds.

The burden on citizens is particularly high because, even as households bear the brunt of aggregate health spending in the country, systems of affordable health insurance are non-existent or poorly developed. And, as noted earlier, employers (both public and private) account for relatively little in terms of spending on health, and in any case with more than 90 per cent of Indian workers having “informal” or unorganised status, there are few possibilities of ensuring that employers bear at least part of the costs of medical treatment. Therefore instances of accident or severe illness requiring hospitalisation have drastic effects upon the households of the affected persons, even among poor households. This is equally true of urban and rural households but the effects may be particularly sharp among the rural population because of the relative paucity of any publicly provided treatment. For example, recent studies of agrarian distress have also found that health expenditures have been significant in causing or increasing the indebtedness of farmers, which has in turn been a proximate cause of farmers’ suicides.²

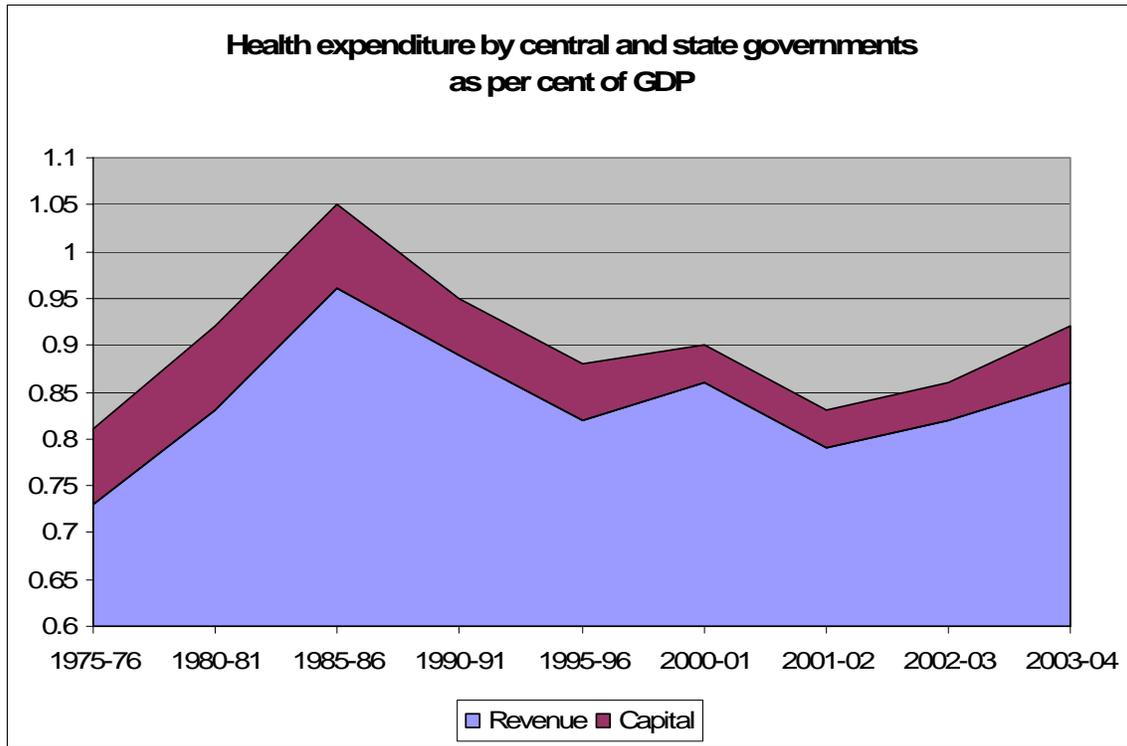
² See for example, the Report of the Commission on Farmers’ Welfare, Government of Andhra Pradesh, December 2004.

III. Central government health expenditure since 1993

One of the more obvious indicators of the inadequacy of public health spending in India is the very small amount of such spending relative to GDP. In developed countries, especially those with ageing populations, government health spending accounts for around 5 per cent of GDP or more. Even in Asian developing countries excluding India, the average is around 3 per cent of GDP. This makes it quite remarkable that India, which is currently seen internationally as an economic powerhouse and one of the success stories of global economic growth in the past decade, has government health expenditure amounting to less than 1 per cent of GDP. Further, this ratio is not only low internationally, but is even low compared to past experience. As Chart 3 shows, even in the mid-1980s, health expenditure of central and state government taken together was more than 1 per cent of GDP, but now it is only around 0.9 per cent. Further, it has fallen as low as around 0.8 per cent in 2001-02. It is also significant that a greater proportion is taken up by revenue expenditure (essentially, the payment of salaries) rather than capital expenditure for creating much-needed basic physical infrastructure.

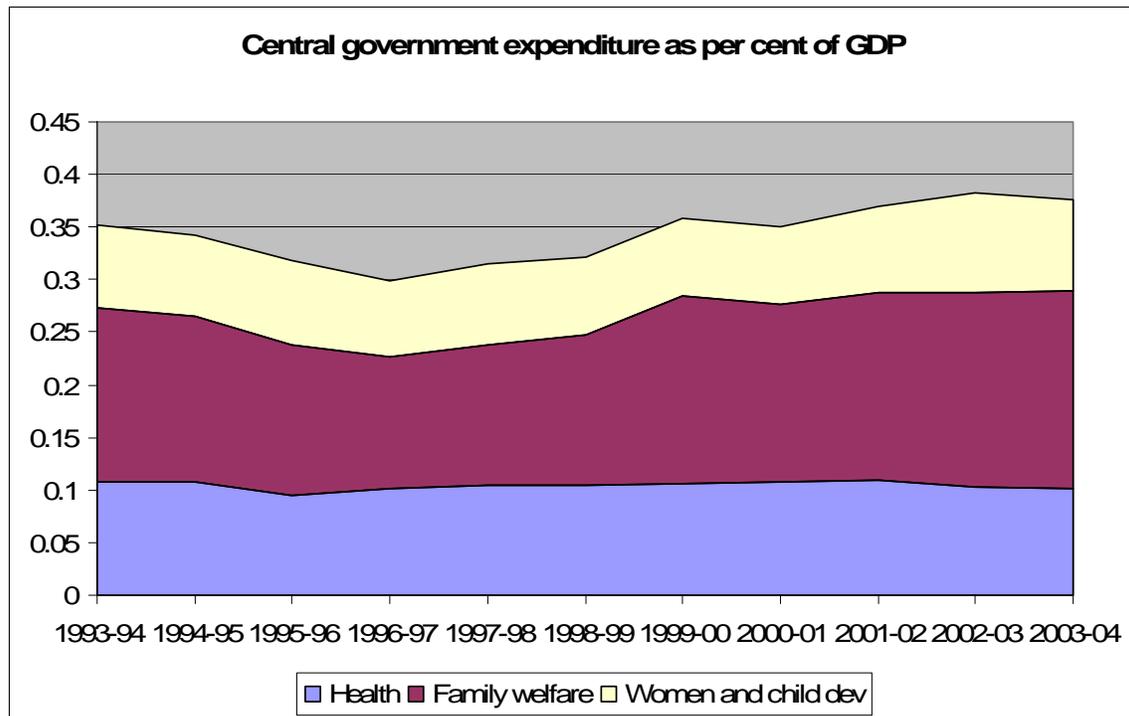
Health is a concurrent subject under the Indian Constitution, but state governments are dominantly responsible for most health provision, both curative and public health aspects. However, in addition to direct central government spending on specific budget items, there is a range of centrally mandated expenditures which are also effectively spent by state governments, as well as some joint spending. While there are some specific central intervention, especially various “Missions” as well as high-end curative facilities, the bulk of the health provision that affects most of the citizenry is the result of spending by state governments. The National Rural Health Mission, which is a very recent central programme, involves only central expenditure.

Chart 3: Health expenditure of central and state governments as per cent of GDP



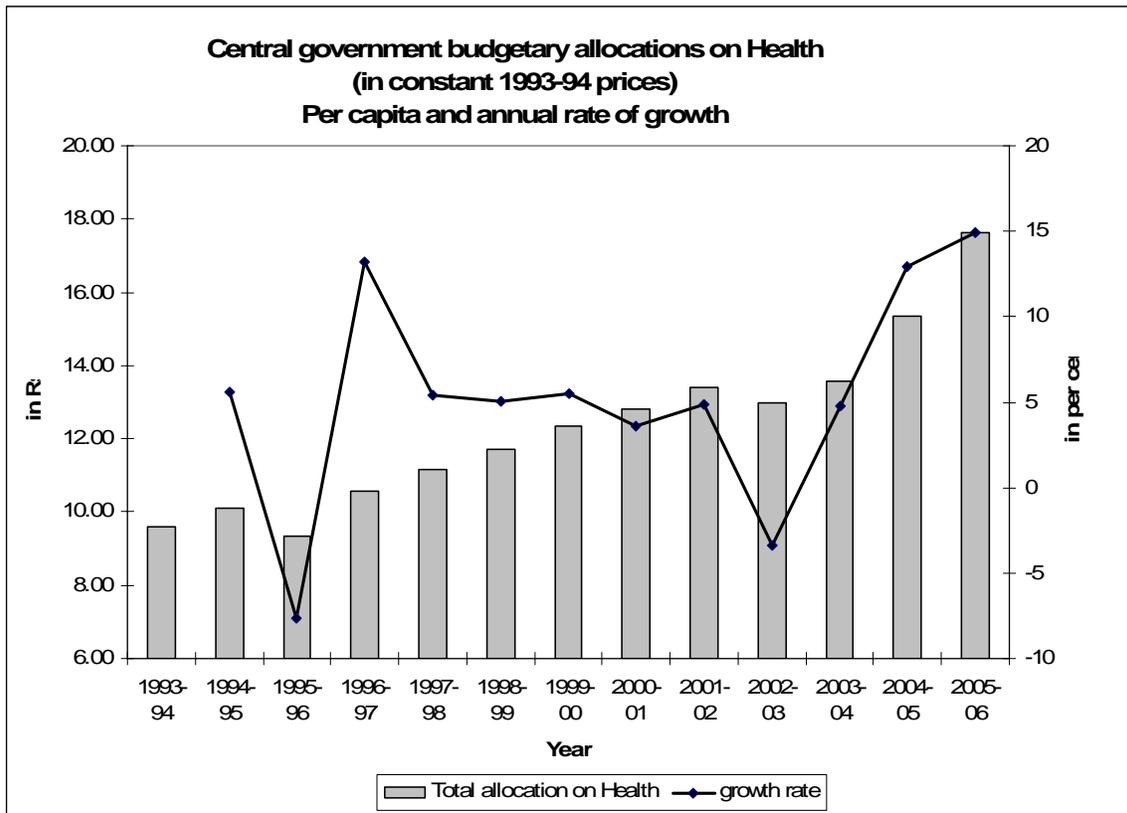
The ratio of central government spending to total state government spending is currently around 1:2. In the past decade, as evident from Chart 4, central government expenditure on health and related areas has been relatively flat at around 0.35 per cent of GDP, with a small downturn in the mid-1990s and a small increase in the very recent period. Within this, expenditures on health alone have been completely flat at only 0.1 per cent of GDP. There has been some slight increase in expenditures on family welfare, which include some expenditure for reproductive health. However, spending on women and child development has remained relatively constant as share of GDP. This is surprising, because the last category is dominated by the ICDS. The government has been instructed by the Supreme Court to universalise the ICDS to cover all habitations and provide one anganwadi for every 1000 population, which would require a very large increase in expenditure. As shall be seen later, such additional expenditure has still not been forthcoming from the central government.

Chart 4: Central government health expenditure as per cent of GDP



While health expenditure of the central government has been low and relatively stable as share of GDP, it has shown some slight improvement in real per capita terms. Chart 5 suggests that real per capita spending by the central government was broadly constant in the mid-1990s but grew slightly from 1997 to 2001. It was again stagnant until 2003 (in fact showing absolute decline in aggregate terms in 2002-03), but since then has shown an increase in the last two years. It is likely that it will increase further in the current budgetary year because of anticipated expenditures on the National Rural Health Mission. Even so, the increase is rather minor and involves central government health expenditures that are not only well below the standards of comparable developing countries, but very far from the amounts required to provide minimally acceptable levels of health care to the entire population.

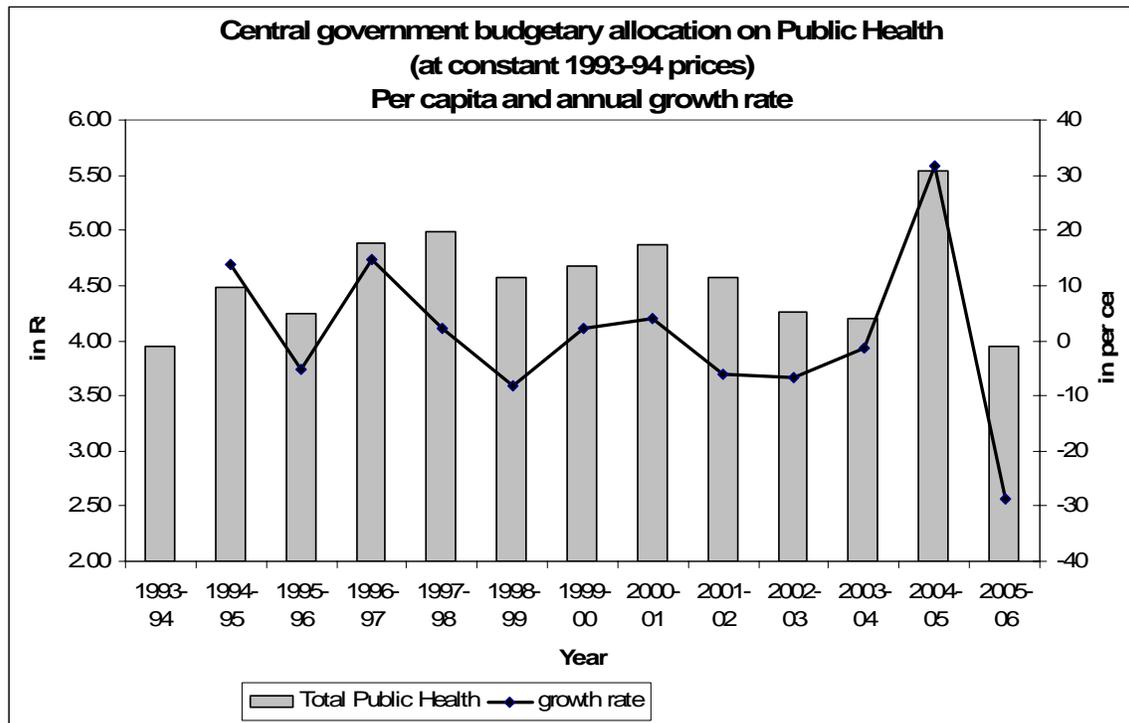
Chart 5: Central government spending on Health, real per capita and growth rate



However, within this, the share of expenditure allotted to public health appears to be declining. Chart 6 shows that there has been stagnation in public health expenditure since 1999-2000 except for one year (2004-05), and that there has been quite a sharp drop in spending on public health in per capita terms over the past five years.

It is worth noting that this has occurred despite a substantial increase in budgetary allocations to the National Aids Control Organisation, which by 2005-06 accounted for 37 per cent of all public health expenditure of the central government. It has meant reduced budgetary resources provided (especially in per capita terms) for dealing with several other major communicable diseases as well as non-communicable diseases such as trachoma and blindness control.

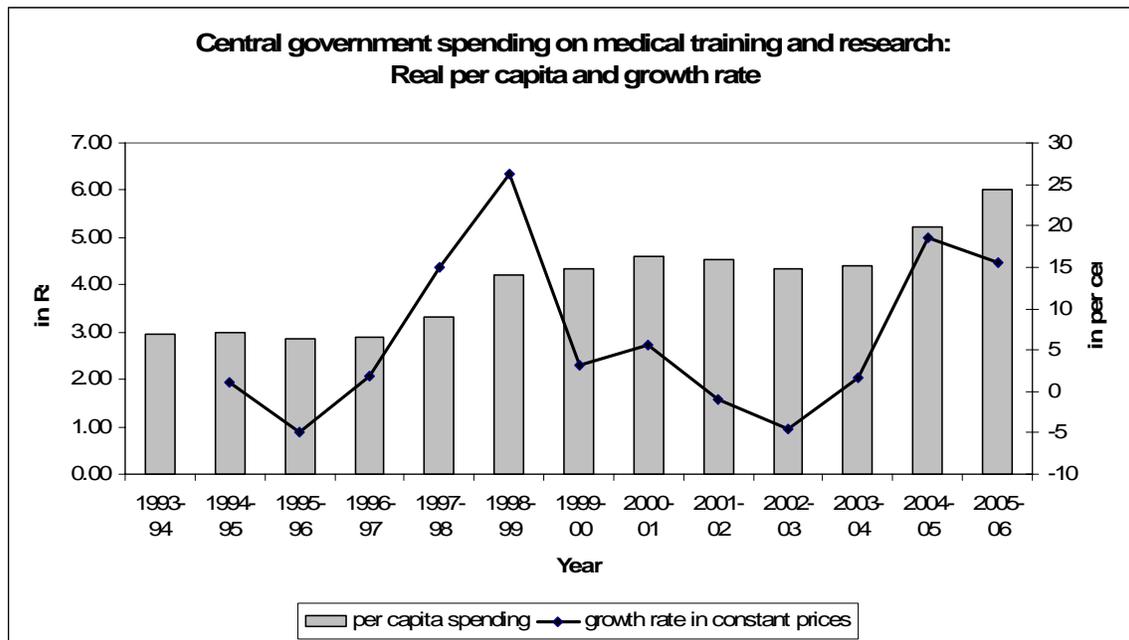
Chart 6: Central government spending on Public Health, real per capita and growth rate



An important area of public health expenditure which is dominantly the responsibility of the central government is medical training and research. Here too, the per capita spending has increased only slowly over the 1990s although recent years have shown some increase. However, it could be argued that this is an area where much greater public spending is required, and it must necessarily be undertaken by the central government. There are two important reasons for this, especially in the field of medical research. First, international experience has shown that much medical research undertaken in the world, increasingly by large multinational companies and labs based in developed countries, does not engage very much with those drugs and medical interventions that are of specific relevance to tropical countries or particular contexts such as India. For example, out of more than 2000 drugs patented in the developed world in the past decade, only 4 relate to tropical diseases. So it is imperative for countries such as India to direct larger amounts of public money towards relevant medical research to be used nationally and in developing countries with similar conditions. Second, recent legislation which has made Indian patent law TRIPS-compatible has also entailed a

significant reduction in the adaptive capabilities of many India firms which had based their production on reverse engineering processes. Therefore it is crucial to enhance the technological innovation capability of Indian producers, which once again requires public expenditure. In this current context, therefore, the levels of public spending indicated in Chart 7 appear to be grossly inadequate.

Chart 7: Central government spending on medical training and research



In contrast to public health, expenditure on family welfare by the central government appears to have increased in the aggregate as well as per capita, as shown in Chart 8. Within aggregate family welfare, the most important segment is family welfare services, which has accounted for around an increasing part of the total, from 38 per cent in 1993-94 to 73 per cent in 2006-06. Except for 2000-01, when both the aggregate and per capita spending on family welfare services fell, this broad category has shown a generally increasing trend, even in per capita terms.

Chart 8: Central government spending on Family Welfare

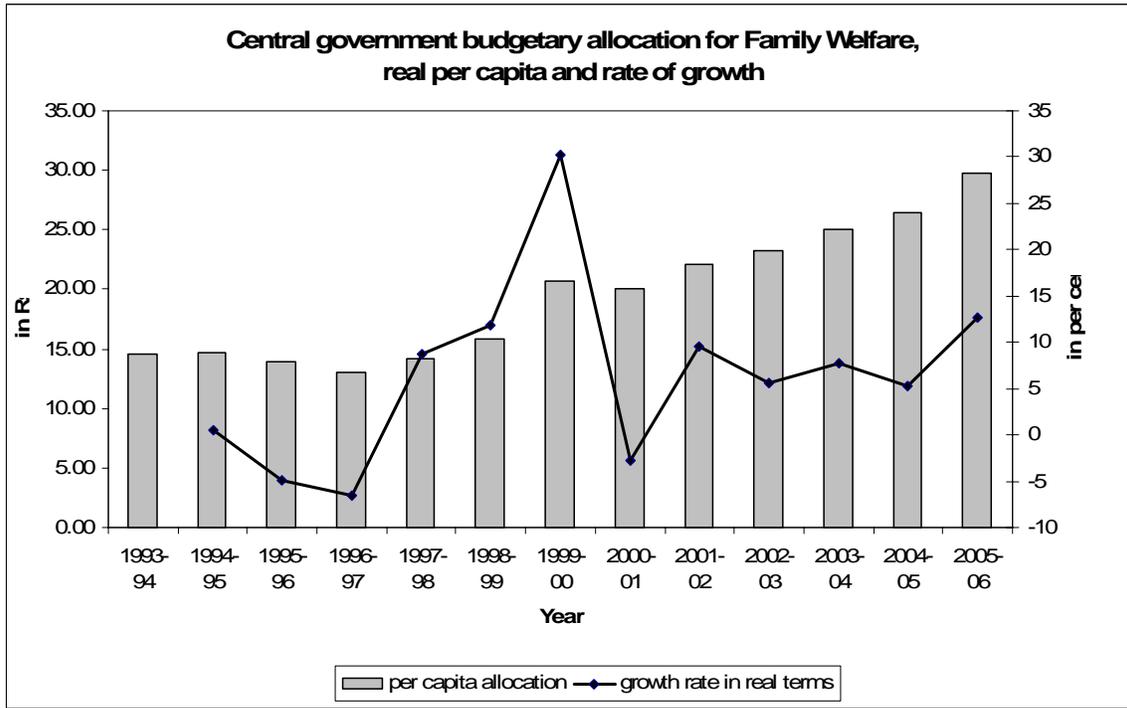
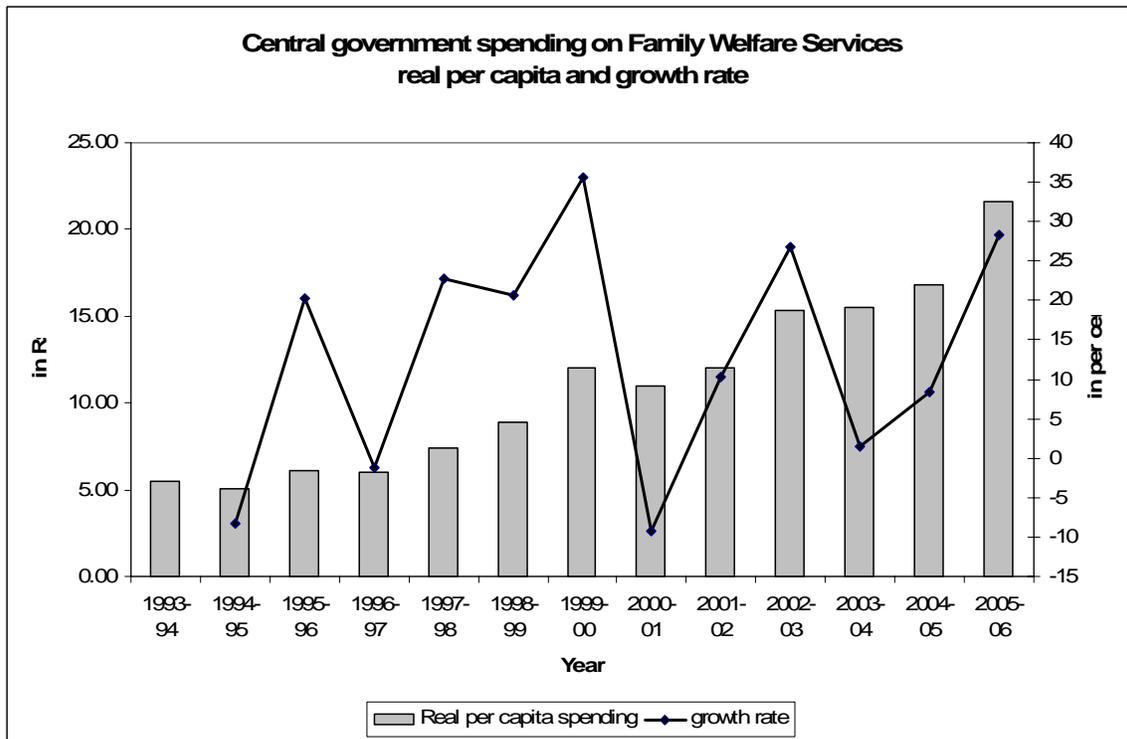
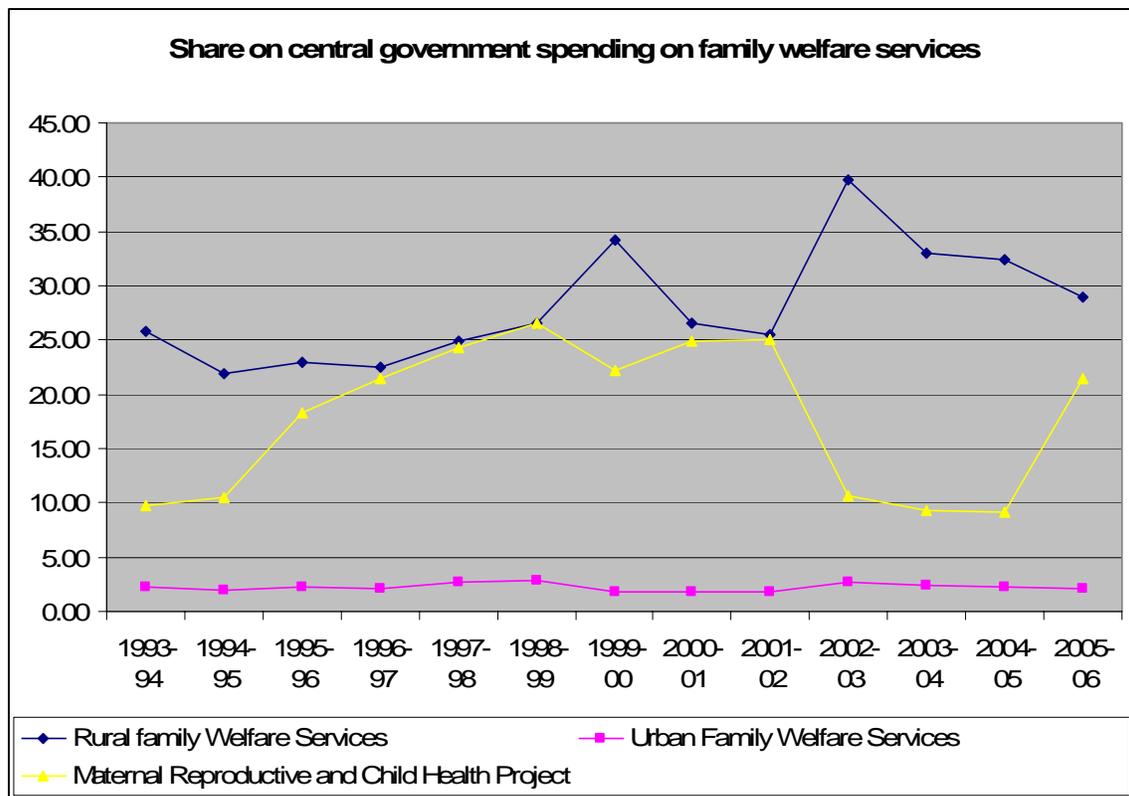


Chart 9: Central government spending on Family Welfare Services



But within this, the shares of particular heads show remarkable variation, as Chart 9 indicates. In particular, rural family welfare services and the Maternal Reproductive and Child Health Project appear to have moved in contrary fashion as shares of this category. The Maternal Reproductive and Child Health Project received continuously increasing central funds in the latter half of the 1990s, and then after a dip in 2002-03, again showed a substantial increase. This shows an inverse pattern with rural health services. This clearly merits further investigation.

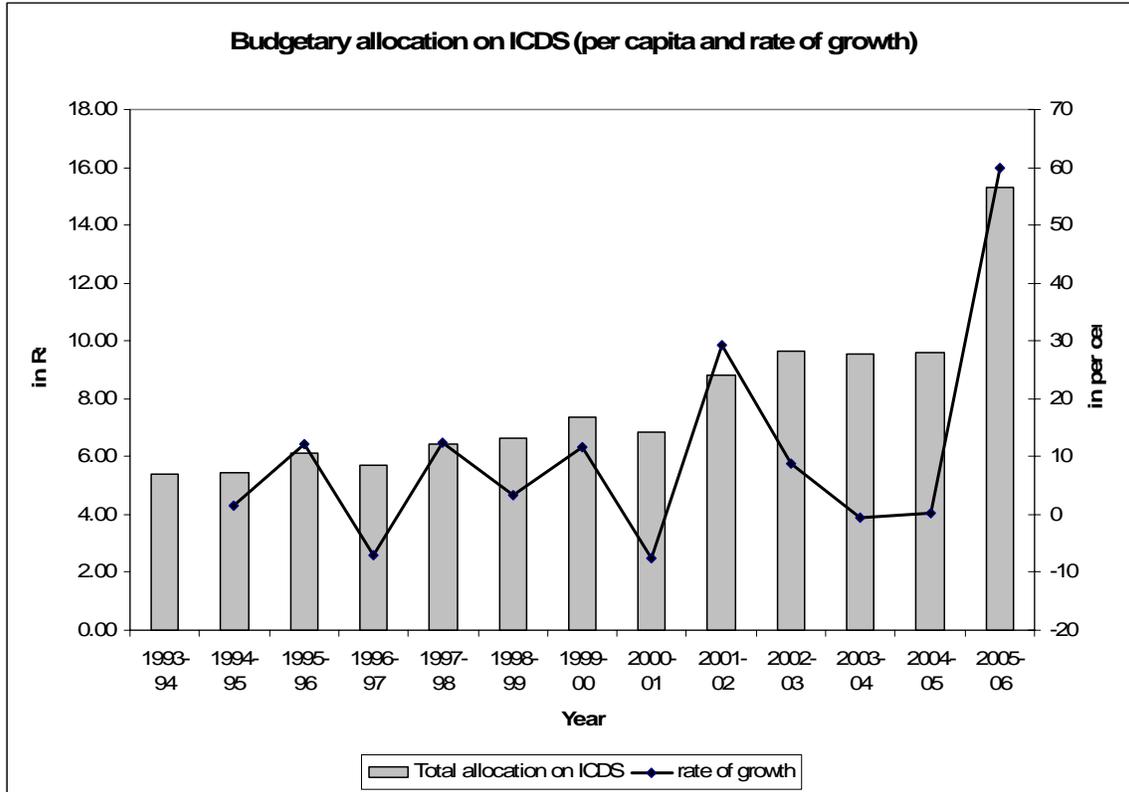
Chart 10: Shares within spending on family welfare services



The case of Child Development is somewhat different. Spending within this category is dominated by expenditure on the Integrated Child Development Scheme (ICDS) which has continuously accounted for well above three-fourths of total spending under this head. And spending on ICDS in turn, while absolutely critical from the point of the view of both welfare and development, has been very inadequate and hardly increased even in the first years of this decade, until the Supreme Court’s judgement

about universalising ICD and the Court's strictures on the central government for its tardy response have forced some increase in spending in the very recent past.

Chart 11: Central government spending on ICDS



IV. Health expenditure of 14 state governments since 1993

According to the Indian Constitution, the health sector falls under the concurrent list and thus, the provision of public health care in India is a responsibility shared by both the Central and State governments. For state government health expenditure, the financing responsibility is primarily that of the state government with some overlapping responsibilities in a series of centrally sponsored schemes. As noted earlier, state governments account for about two-thirds and the centre about one-third of the total public spending on health. However, there are of course large variations in this ratio across states.

The total health budgetary allocation of any state government in India mainly consists of expenditures on the medical, public health and on family welfare. In the allocation of the medical health, the major heads that are covered are the allocations on urban health services, rural health services and medical education and training. The other major heads are the expenditures on the public health and family welfare. Here we analyse the behaviour of the per capita health allocations under these major heads since 1993-94 to 2002-03 for 14 major states in India. (Bihar has been excluded because of data inadequacies.)

Table 3 provides data on the annual rate of growth of the total health budget (medical and public health including family welfare) of these 14 states, measured in constant 1993-94 prices. It shows that increases in state government health expenditure have generally been below the rate of growth of aggregate real GDP. Only in four states did health expenditure grow at an annual rate of more than 7 per cent – Andhra Pradesh, Karnataka, Punjab and West Bengal. In three states, real health expenditure actually declined in aggregate terms - Assam, Madhya Pradesh and Uttar Pradesh. Furthermore, there is evidence of deceleration over this period. In the latter half of this decade, i.e. 1998-99 to 2002-03, the rate of growth of such spending declined compared to the earlier period 1993-94 to 1997-98, in 9 states in India (except the states of Andhra Pradesh, Assam, Kerala, Maharashtra and Orissa). In this sub-period there were absolute declines

as well, in Gujarat, Haryana, Madhya Pradesh, Rajasthan, Tamil Nadu and Uttar Pradesh.

Table 3: Annual rates of growth of total expenditure on Health by state governments

	1993-94 to 2002-03	1993-94 to 1997-98	1998-99 to 2002-03
Andhra Pradesh	7.24	4.58	6.54
Assam	-0.15	0.05	3.50
Gujarat	6.03	8.33	-5.93
Haryana	4.34	3.65	-1.24
Karnataka	7.31	5.01	3.60
Kerala	3.93	1.56	3.99
Maharashtra	5.59	3.81	6.58
Madhya Pradesh	-2.59	3.47	-16.36
Orissa	4.65	1.29	2.22
Punjab	7.47	5.64	0.63
Rajasthan	4.08	8.65	-1.70
Tamil Nadu	3.74	4.50	-1.47
Uttar Pradesh	-1.54	2.35	-0.46
West Bengal	7.26	2.97	1.46

It is worth undertaking a disaggregated analysis of trends in aggregate spending on medical and public health, and family welfare, separately. Table 4 provides these data – from which it is apparent that in all the 14 states, the medical and public health component followed the same trend as the aggregate health expenditure. However, expenditure on the department of family welfare shows greater variation. Only in Madhya Pradesh did both forms of expenditure decrease over the decade as a whole. Over the entire period, medical and public health expenditure increased while family welfare spending decreased in four states – Haryana, Orissa, Punjab and Uttar Pradesh. In Assam on the other hand, family welfare expenditure increased while that on medical and public health fell.

Table 4: Annual rates of growth of expenditure by category

	1993-94 to 2002-03	1993-94 to 1997-98	1998-99 to 2002-03
Andhra Pradesh			
Medical and Public Health	7.50	4.95	6.97
Family welfare	6.26	3.14	4.88
Assam			
Medical and Public Health	-0.56	1.22	3.22
Family welfare	2.07	-6.18	4.81
Gujarat			
Medical and Public Health	6.54	9.05	-6.02
Family welfare	3.18	4.60	-5.52
Haryana			
Medical and Public Health	5.81	6.63	-1.09
Family welfare	-2.05	-7.41	-2.03
Karnataka			
Medical and Public Health	7.16	4.67	2.49
Family welfare	7.96	6.66	9.38
Kerala			
Medical and Public Health	4.46	2.42	4.71
Family welfare	0.81	-2.99	-0.62
Maharashtra			
Medical and Public Health	6.18	4.36	6.05
Family welfare	0.45	0.05	11.59
Madhya Pradesh			
Medical and Public Health	-1.82	4.11	-16.32
Family welfare	-6.85	0.36	-16.60
Orissa			
Medical and Public Health	5.88	1.72	4.15
Family welfare	-0.69	-0.29	-6.69
Punjab			
Medical and Public Health	8.84	6.84	1.16
Family welfare	-4.11	-2.41	-6.32
Rajasthan			
Medical and Public Health	4.60	8.71	-1.59
Family welfare	1.87	8.50	-2.48
Tamil Nadu			
Medical and Public Health	3.73	5.66	-2.49
Family welfare	3.80	-1.28	3.53
Uttar Pradesh			
Medical and Public Health	0.05	4.24	-1.47
Family welfare	-5.53	-0.45	12.30
West Bengal			
Medical and Public Health	7.64	3.81	1.83
Family welfare	4.84	-2.24	

In general, the budgetary head of family welfare showed much greater variation across the sub-periods than the other category. In the states of Karnataka, Tamil Nadu, Uttar Pradesh and West Bengal, the rate of growth of budgetary allocations on Family Welfare increased in the second sub-period, despite declines in the rate of growth of the total budgetary allocations. In Orissa, the opposite trend is clearly visible, with accelerated spending on medical and public health, but accelerated declines in spending on family welfare.

Of course, what is more significant than the aggregate spending is the per capita public spending on health and family welfare. This show very large variation across states, as is evident from Table A1 in the Appendix. Table 5 shows the absolute levels and change in per capita spending between 1993-94 and 2001-02 for the 14 states considered here (data were not available for 2002-03 for some states).

Table 5: Per capita spending by state governments on health and family welfare together
(in constant 1993-94 prices)

	1993-94 (in Rs.)	As per cent of highest	2001-02 (in Rs.)	As per cent of highest
Andhra Pradesh	75.93	68.3	106.17	70.5
Assam	80.25	72.2	73.64	48.9
Gujarat	83.17	74.9	97.06	64.5
Haryana	81.3	73.2	86.88	57.7
Karnataka	86.43	77.8	135.06	89.7
Kerala	100.73	90.7	128.4	85.3
Maharashtra	87.76	79.0	115.38	76.7
Madhya Pradesh	64.14	57.7	35.97	23.9
Orissa	58.92	53.0	72.24	48.0
Punjab	111.09	100	150.51	100
Rajasthan	85.46	76.9	110.08	73.1
Tamil Nadu	98.64	88.8	122.35	81.3
Uttar Pradesh	67.71	61.0	48.29	32.1
West Bengal	74.31	66.9	102.31	68.0

The first important point that emerges from this is that there is very wide variation across states, and further, these gaps have actually widened over time. In 1993-94, per capita spending by the state government of Orissa on all health and family welfare was only Rs. 58.92, which was the lowest - just above half the level in the highest-spending state, Punjab. By 2001-02, the differences had grown even sharper. By then, per capita expenditure in Madhya Pradesh, which was the lowest in that year, was less than a quarter of that in Punjab! And in 2001-02 there were three other states whose per capita spending was less than half of the level in Punjab: Assam, Orissa and Uttar Pradesh.

The second important point is that in three major states, real per capita spending on health actually declined over this period – Assam, Madhya Pradesh and Uttar Pradesh. In Madhya Pradesh, the decline was particularly sharp, to almost half the level of the earlier period in constant price terms. This has obvious implications for the state of public health services in general, and is particularly worrying because these declines occurred in backward states where public health facilities were already grossly inadequate in quantity and poor in quality, and therefore required much more expenditure rather than less.

In two other states – Gujarat and Haryana – per capita expenditure on these heads did not increase very much, largely because of the stagnation or decline of the family welfare component. In fact, the expenditure on medical and public health comprises the major share (about three-fourths) of total expenditures for all the states, and generally tends to follow the evident trends in aggregate expenditure.

Table 6 provides data on absolute levels of and changes in real per capita expenditure on family welfare, once again in 1993-94 prices. It is evident from this table that the budgetary allocations towards the department of family welfare have been very low in most of the states. Once again, it is clear that there are wide and growing differences across states in per capita real expenditure in this category. Further, the highest spending state changed over this period, from Haryana to Karnataka (where per capita spending under this head more than doubled in constant price terms). However, on

average Rajasthan showed the highest spending in this category over the period as a whole.

Table 6: Per capita spending by state governments on family welfare

	1993- 94 (Rs.)	per cent of highest	2001- 02 (Rs.)	per cent of highest
Andhra Pradesh	15.9	78.7	21.16	77.1
Assam	14.41	71.3	13.11	47.8
Gujarat	14.14	70.0	11.8	43.0
Haryana	20.21	100	13.29	48.4
Karnataka	13.63	67.4	27.44	100
Kerala	16.81	83.2	17.44	63.6
Maharashtra	12.8	63.3	12.78	46.6
Madhya Pradesh	11.53	57.1	4.35	15.9
Orissa	13	64.3	10.09	36.8
Punjab	17.94	88.8	9.81	35.8
Rajasthan	17.26	85.4	23.93	87.2
Tamil Nadu	18.11	89.6	21.85	79.6
Uttar Pradesh	18.37	90.9	12.62	46.0
West Bengal	11.18	55.3	12.35	45.0

What is even more remarkable is the number of states that show a decline in real per capita spending under this head. In seven states – Assam, Gujarat, Haryana, Madhya Pradesh, Orissa, Punjab and Uttar Pradesh – there were declines in per capita spending on family welfare in constant price terms. Once again, this decline has been sharpest in Madhya Pradesh where the absolute level was already very low. But the declines are significant even in Punjab and Haryana, which are among the wealthier states. Andhra Pradesh and Karnataka had growing allocations in real terms, and relatively high per capita expenditure.

In most of the states there is a wide rural-urban disparity in the per capita budgetary allocations of the state. Details are providing in Table A3 in the Appendix. The only exceptions to this are the states of Punjab and Rajasthan, where the real per-capita allocations in the rural and the urban health sectors have been almost at par. From Charts 12 and 13, it is clear that in these two states the per capita allocations in the rural areas in the early 1990s even exceeded those in the urban areas, though marginally. However,

subsequently urban has outpaced rural per capita expenditure even in these states, in line with the trend in other states and All-India.

Chart 12: Health expenditure in Punjab, Rural and Urban

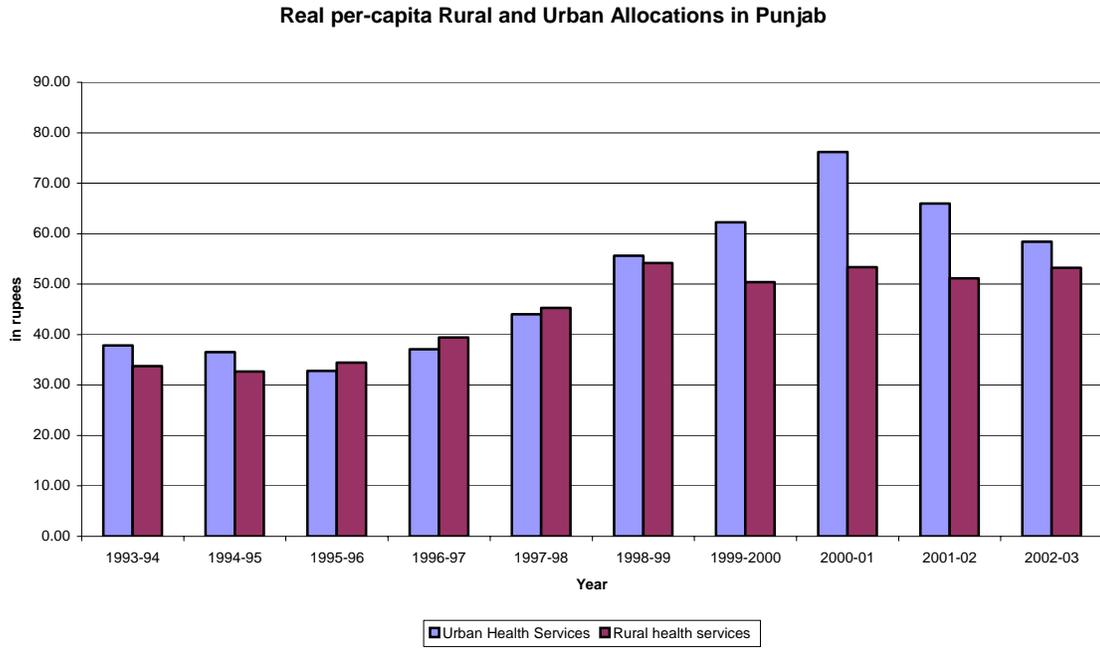
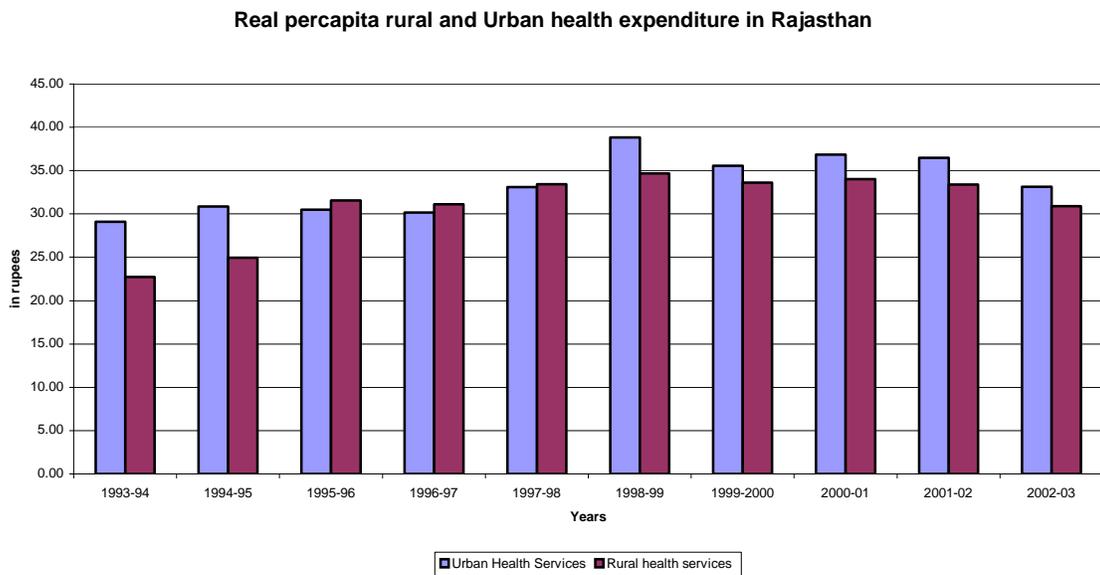
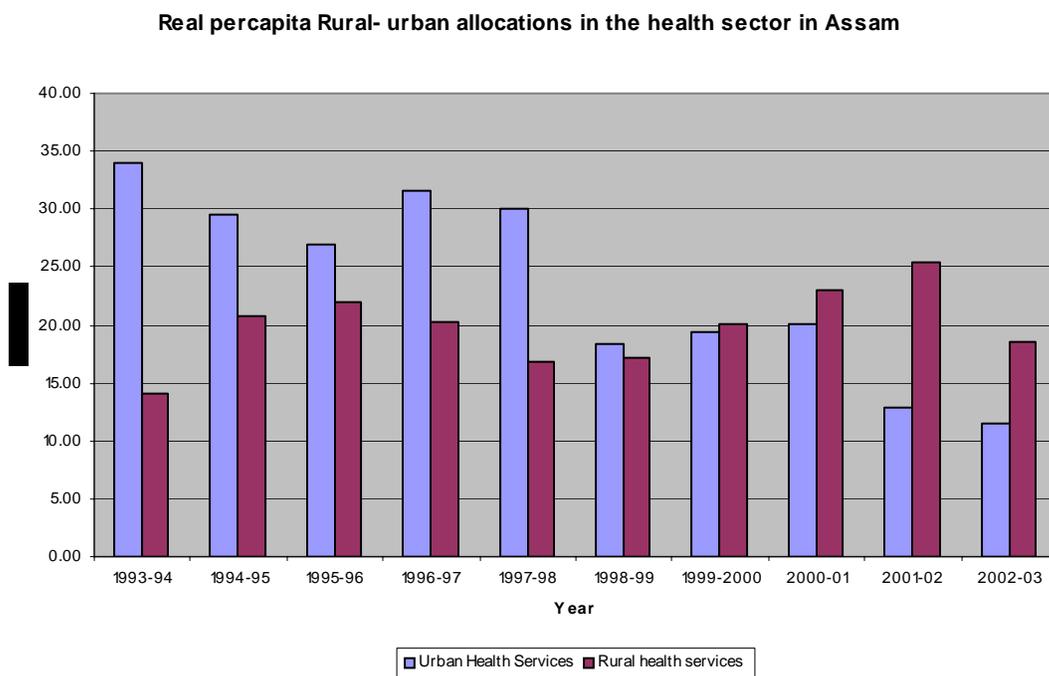


Chart 13: Per capita health expenditure in Rajasthan, Urban and Rural



With reference to the rural-urban disparity, an interesting trend is exhibited by the state of Assam. While urban per capita allocations showed a declining trend, rural per capita allocation in the rural sector suggest a slightly rising trend, as shown in Chart 14. Real per capita allocation for urban areas came down from Rs. 34.05 in 1993 to 11.49 in 2002-03. However, the same allocation for rural areas has gone up from Rs. 14.11 in 1993-94 to 18.57 in 2002-03, and is now significantly higher than the urban allocation.

Chart 15: Per capita health expenditure in Assam, Urban and Rural



Per capita real allocations towards Public Health show even more variation across states than medical expenditures and spending on public health. Maharashtra spent around Rs. 34 per head on public health in 1993-94 and such spending increased by more than one and half times in real terms by 2001-02. In 1993-94, the lowest spending state, Karnataka, spent only 17 per cent of that amount, and in 2001-02, the lowest spending state spent only 8 per cent of what was spent in Maharashtra. Indeed, no other state comes anywhere near Maharashtra in terms of per capita spending on public health. (Some of this may be due to differences in classification in Maharashtra relative to other

states, since Maharashtra also shows very low rural medical expenditure and larger “general” expenditure.)

Table 7: Per capita spending by state governments on public health

	1993- 94 (Rs.)	per cent of highest	2001- 02 (Rs.)	per cent of highest
Andhra Pradesh	14.19	41.9	14.42	27.9
Assam	11	32.5	9.35	18.1
Gujarat	14.88	44.0	12.28	23.7
Haryana	11.76	34.8	11.52	22.3
Karnataka	5.71	16.9	5.64	10.9
Kerala	7.85	23.2	8.83	17.1
Maharashtra	33.84	100	51.72	100
Madhya Pradesh	10.84	32.0	3.92	7.6
Orissa	8.83	26.1	9.03	17.5
Punjab	11.01	32.5	9.19	17.8
Rajasthan	8.71	25.7	7.31	14.1
Tamil Nadu	13.36	39.5	15.28	29.5
Uttar Pradesh	10.88	32.2	4.31	8.3
West Bengal	9.05	26.7	9.72	18.8

What is more alarming is the reduced per capita spending on public health in almost all the states – indeed, only Maharashtra, Kerala, Tamil Nadu and West Bengal show any increases, and the latter three. The most dramatic declines in per capita spending have been in Madhya Pradesh and Uttar Pradesh – two states with clear need for more spending rather than less.

V. Evidence on health outcomes

It is fairly obvious that these low and in several cases declining levels of spending on health and related items would have an impact on conditions of health among the citizenry, especially given that most of the population is poor and cannot afford to spend too much on health even if they are forced to spend more and more for private care. One major fallout of inadequate public spending that was highlighted in the first section is the high proportion of total health spending in India that is incurred by households, which is in sharp contrast to the picture in most other countries. Also, this pattern has worsened over time. The growing proportion of household consumption expenditure that is devoted to health, also noted in the first section, is at least partly if not substantially the result of inadequate or reduced public provision.

Obviously, there is no direct and clear linkage that can be made between government health expenditure and health outcomes of the people. However, certain broad tendencies can certainly be identified. In particular, the unacceptably slow improvement in a range of basic health indicators such as life expectancy at birth, infant mortality and maternal mortality, can be partially traced to inadequate public expenditure and intervention. Chart 16 shows that infant mortality rates were highly volatile over the 1990s, did not show a consistent declining trend, and even increased (for India as a whole) for one period in the late 1990s. In several states there is evidence of IMRs stagnating or even increasing in certain periods in the late 1990s, as per details provided in Table A5.

Chart 16: IMR and annual rate of change in IMR for India

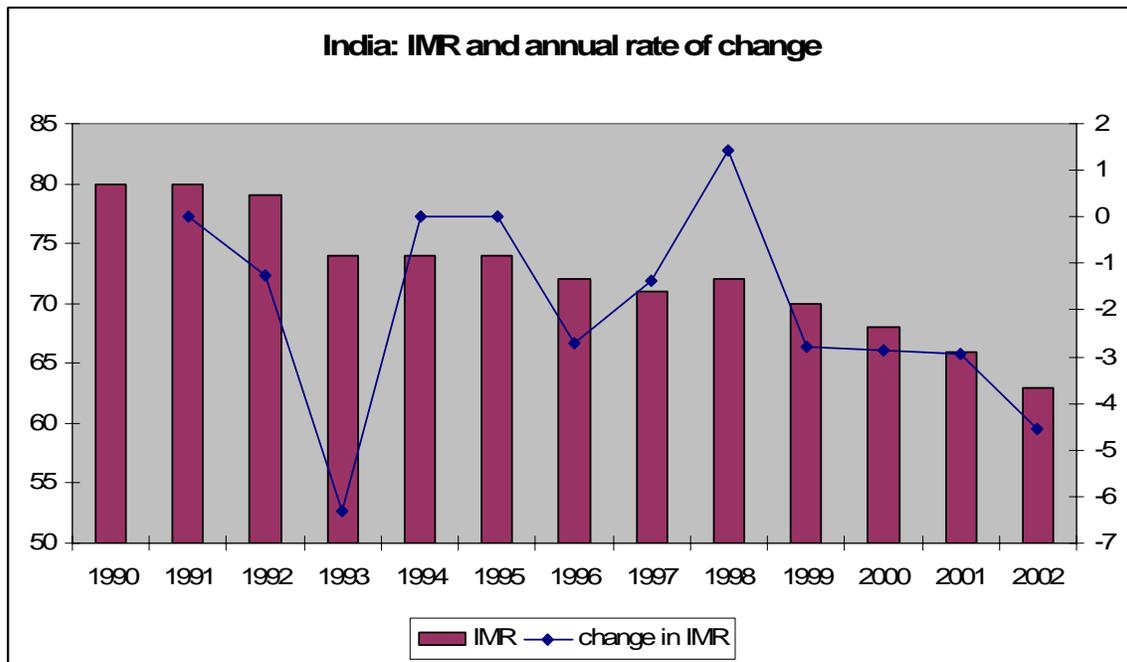


Table on LEB, IMR and MMR trends

Furthermore, the expenditure on public health does have a direct impact on certain health indicators such as the spread of communicable diseases. And, as Table 8 shows, while there may not be a direct and regular relationship, it is certainly the case that there is a broad overall correlation between per capita health spending of the state government and certain basic health indicators. In Table 8, states are placed in descending order according to the state government's per capita expenditure on health and family welfare taken together. Some broad features are evident: the richer states tend to have higher per capita spending, and generally tend to have lower IMRs, greater incidence of full antenatal care and safe deliveries, and better nutrition indicators. However, it is not the case that the richer states all have higher per capita health expenditure – rather, some of them, such as Gujarat and Haryana, have among the lowest per capita expenditure on health. Conversely, Rajasthan, with relatively low per capita income, has relatively higher per capita government spending on health.

Table 8: State government health spending per capita and some health indicators

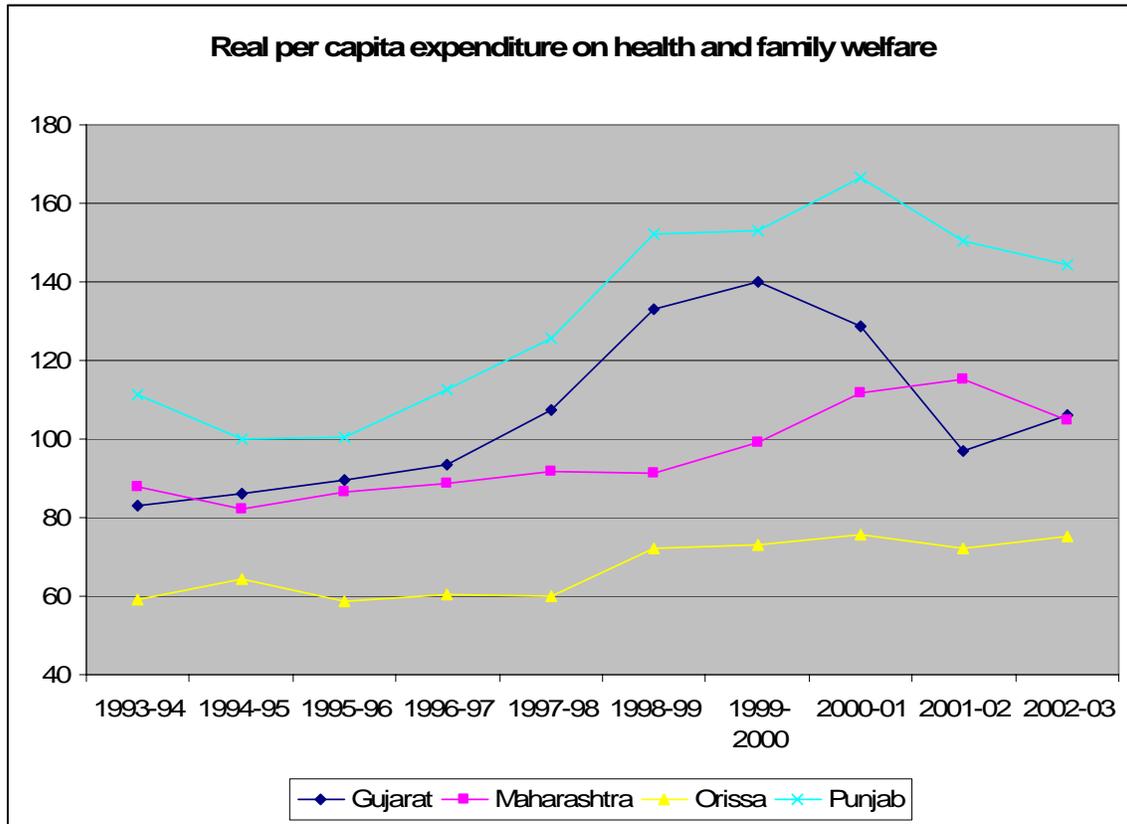
	Per capita state govt health exp in 2001-02 (in Rs.)	Life expectancy at birth (2001-06) Males	Life expectancy at birth (2001-06) Females	IMR (2002)	<5 MR	Children <3 yrs severely mal nourished	Full immunisation coverage (% of children 12-36 months)	Full Antenatal care (3 visits) (%)	Safe delivery (%)
Punjab	150.51	69.8	72	51	72	8.8	74	13.6	61.3
Karnataka	135.06	62.4	66.4	55	69.8	16.5	81	29.5	62
Kerala	128.4	71.7	75	10	18.8	4.7	91	64.3	96.5
Tamil Nadu	122.35	67	69.8	44	63.3	10.6	92	20	80
Maharashtra	115.38	66.8	69.8	45	58.1	17.6	85	23.8	60.8
Rajasthan	110.08	62.2	62.8	78	114.9	20.8	20	3.6	37.7
Andhra Pradesh	106.17	64.1	65.4	62	85.5	10.3	72	35.2	67.9
West Bengal	102.31	66.1	69.3	49	67.6	16.3	78	11.7	42.3
Gujarat	97.06	63.1	64.1	60	85.1	16.2	68	22.1	59.1
Haryana	86.88	64.6	69.3	62	76.8	10.1	56	28.5	44.1
Assam	73.64	59	60.9	70	89.5	13.3	57	-	20.5
Orissa	72.24	60.1	59.7	87	104.4	20.7	56	11.3	36.9
Uttar Pradesh	48.29	63.5	64.1	80	122.5	21.9	27	3.9	25.8
Madhya Pradesh	35.97	59.2	58	85	137.6	24.3	77	5.6	32.1

Source: Public Finance documents, SRS and Report on Macroeconomic s and Health

While there is no exact correlation between per capita health spending and some basic indicators such as life expectancy, IMR and Under 5 MR, there is a broad relationship along expected lines. However, it should be noted that (barring Kerala) most indicators even in the high-spending states are relatively poor by international standards.

Another interesting relationship is that between government health spending over time and health outcomes. The recently released preliminary results of the NFHS-3 allow for a consideration of some health indicators over time in four of the states considered here: Gujarat, Maharashtra, Orissa and Punjab. Chart 17 provides trends in per capita expenditure on health and family welfare by these state governments, in constant 1993-94 prices, and the subsequent charts provide some information on health outcomes in these states based on successive NFHS reports.

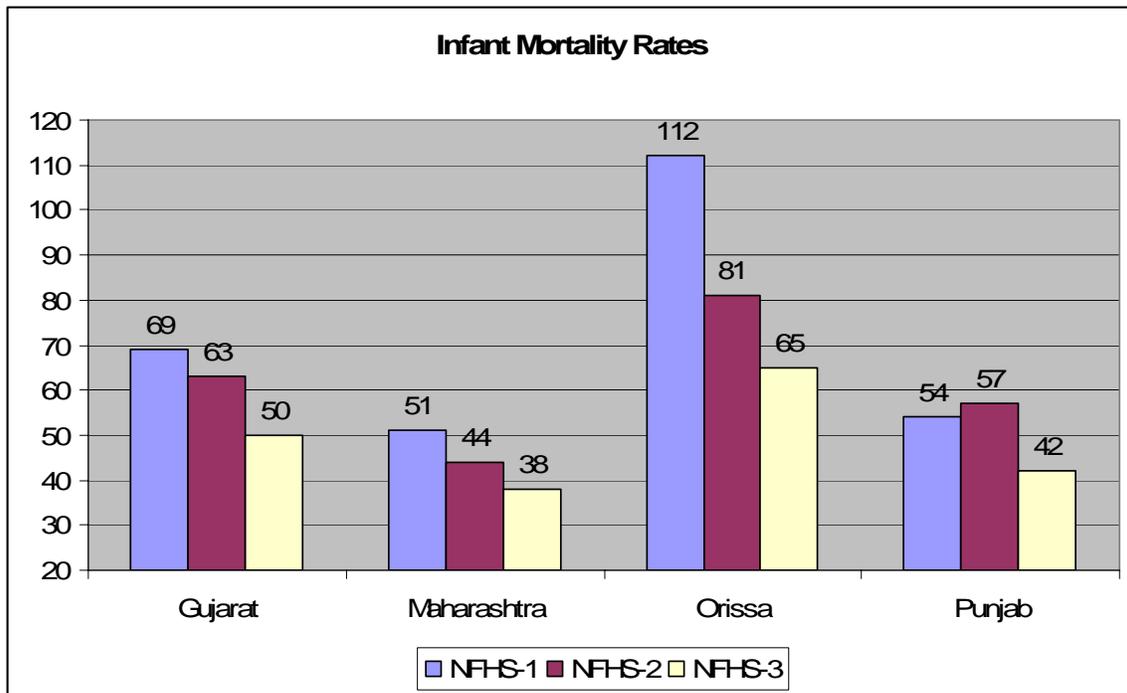
Chart 17: Real per capita expenditure on health and family welfare in selected states



As is evident from Chart 17, real per capita spending on health and family welfare showed a volatile pattern in these states, stagnating or even declining slightly at the start of this period, increasing over the late 1990s and then once again stagnating or declining. There have been relatively sharp falls in Maharashtra and Gujarat from the turn of the decade, uneven pattern in Maharashtra and stagnation in Orissa. While the real per capita expenditure on health and family welfare remained the highest in Punjab throughout the period, the relative ranking of Gujarat and Maharashtra fluctuated, and Orissa continued to have the lowest though the gap narrowed with the middle two states.

However, as Chart 18 shows, this is only partly reflected in infant mortality rates in these states. While that in Orissa was the highest, it also showed the sharpest decline, whereas the IMR of Punjab has been comparable with that of Maharashtra with much lower per capita spending and has also shown a greater variation over time.

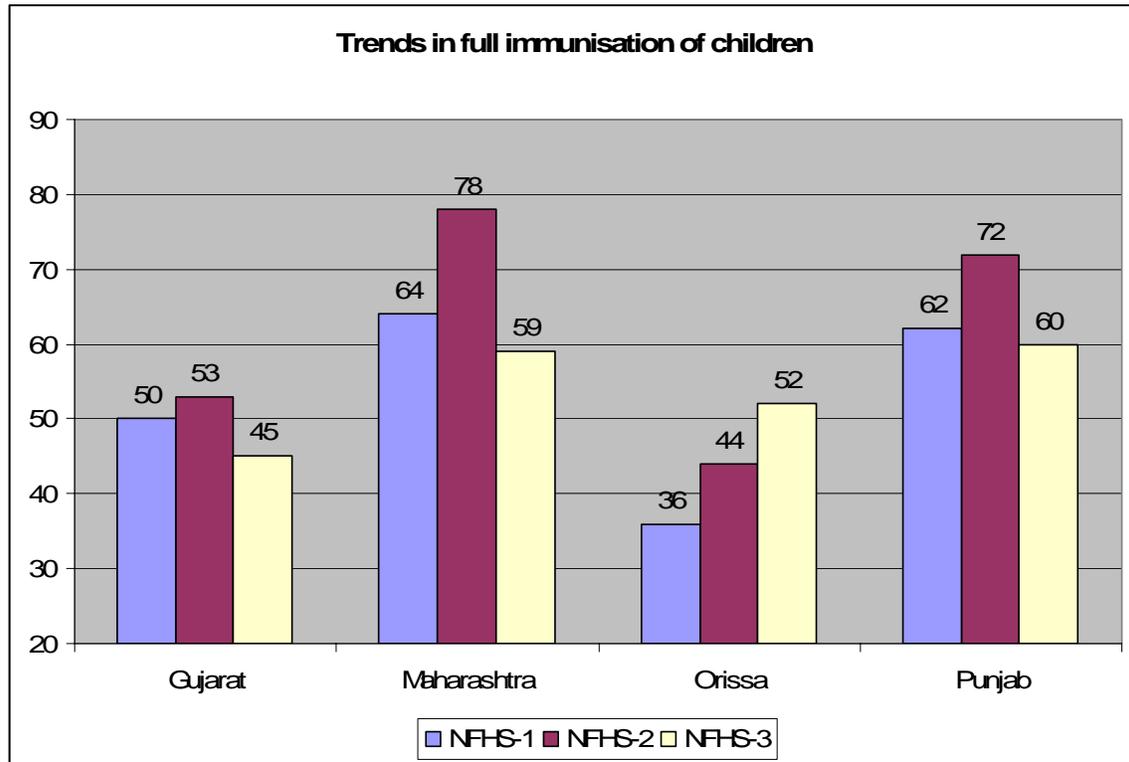
Chart 18: Infant Mortality rates in selected states



But the most direct impact of public spending appears to be felt in a very significant indicator – the proportion of children in the age group 12-23 months who have undergone the full required immunisations, that is BCG plus 3 polio plus 3 DPT plus measles. The shocking fact that emerges from Chart 18 is that, apart from Orissa (where as we have seen, government health expenditure in real per capita terms has increased slightly in the period between NFHS-2 and NFHS-3) in the other states, immunisation rates have actually fallen. The decline is very dramatic in the case of Maharashtra and Punjab, but is also clearly evident for Gujarat. In fact, it turns out that even in Orissa, only measles coverage has improved and coverage of the other vaccines has worsened. In Punjab, Gujarat and Haryana, the decline is essentially because of the much reduced coverage of both DPT and polio. It is worth noting that polio, which was supposed to be eradicated from India, has witnessed a recent upsurge, and that the incidence of both diphtheria and tetanus has increased even though these are both easily and completely preventable through immunisation. The low and declining extent of immunisation coverage therefore suggests greater vulnerability of the population to diseases which are entirely preventable. This worsening of one of the most basic indicators of public health

appears to be the direct result of reduced government expenditure which in turn has reduced the spread of and access to vaccination among the general populations, and particularly in the rural areas.

Chart 18: Trends in full immunisation of children



This suggests that while infant mortality rates may not directly reflect the trends in government health expenditure so clearly (although there are broad relationships that can be discerned), immunisation coverage appears to be directly (and even almost immediately) affected by public spending in this area. The reduced expenditure can therefore have alarming and completely unnecessary adverse effects upon the health of the population, which will eventually reflect not in mortality *per se* but in increased morbidity and reduced capabilities.

VI. Conclusions and directions for further research

This is a preliminary study which has sought to consider the broad patterns of government spending on health and related areas in India in the recent past, and link them to observed health outcomes. The analysis has been conducted both at the central government level and for 14 major states.

A number of important conclusions have already emerged from this preliminary analysis. First, absolute levels of total government spending on health, family welfare and child development are absurdly low by international standards, not only in per capita terms but also as share of GDP. Government spending on health amounts to less than 1 per cent of GDP. This has meant that a disproportionately large and growing share of the burden of health care has been borne by households in India, such that they account for an increasing share of total expenditure (nearly three-quarters in the most recent year for which data are available). Unlike many other countries, this is completely in the form of out-of-pocket expenses, which are inherently regressive. Also, the share of household consumption expenditure devoted to health care has also been increasing over time, especially in rural areas where it now accounts for nearly 7 per cent of the household budget on average.

The central government accounts for roughly one-third of total government expenditure on health, on average 0.35 per cent of GDP over the past decade. In terms of GDP share, expenditure on health has been flat, although there has been a slight increase in spending under the budget head family welfare. Surprisingly, given the constitutional requirement and Supreme Court order on the central government to expand and universalise the ICDS within a very short time period, spending on child development has also been flat in proportion to GDP. Central government expenditure shows sharp fluctuations over the 1990s, with a slight increase since 2003, although within this, the share of public health has declined substantially and budget allocations in this category also declined in per capita terms. The share of spending devoted to medical training and research has also been far too low.

The analysis of state budgets (14 major states) indicates wide variations across states, which are not always explained by differences in income (defined as SDP per capita). There are also differences in the time trend, and worrying indications of declining state government spending in crucial areas. Overall health spending declined over the decade 1993-94 to 2002-03 in 3 states, and declined between 1998-99 and 2002-03 in 6 states. Within the overall spending, family welfare showed the greatest fluctuation over time in most states. There were sharp and generally growing rural-urban disparities in spending in most states. Further, over this decade, the gaps between states in terms of per capita spending increased.

In terms of outcomes, while clear and direct correlations between government spending on health and health outcomes are not to be expected, there was nevertheless indication that there is a broad relationship. In particular, the stagnation or low rate of decline of certain crucial indicators such as the IMR could be related to this. Across states, the per capita spending was seen to be strongly correlated with various indicators including not only life expectancy at birth, infant mortality and child mortality, but also with the extent of antenatal care provided, the proportion of safe deliveries and the spread of immunisation. The state-level analysis of outcomes also considered the very recent evidence from NFHS-3 for the four states of Gujarat, Maharashtra, Orissa and Punjab. The declines in per capita spending on health in constant 1993-94 price terms in three of these states was linked to the actual declines in the extent of full immunisation among children in the age group 12 to 23 months. This pointed starkly to the negative public health implications of reduced real health spending by state governments.

These preliminary conclusions must obviously be refined by much more rigorous empirical analysis of the relevant indicators. Therefore this study also points to a number of areas of future research that are extremely relevant given that broad trends that have been identified as well as the pattern of variation across states. The most important future task involves exploring the disaggregated pattern of health spending both at central government and state government levels, according to more detailed classifications. This

is important because, even within overall expenditures that are growing, the shift across categories can have important effects on both quality and quantity of public health services, and can in turn affect not only the access of citizens and the need to rely on private care, but also health outcomes. Further, the analysis over time and across states of health spending in relation to aggregate and per capita income (GDP and SDP) can be usefully extended to consider a number of other comparisons, through rank correlations, etc. The disaggregated impact of health expenditure on particular groups, not only women and girl children, and across rural and urban, but specifically for socially disadvantaged communities and regions, is also a major area for further research. Clearly, this is an area with huge possibilities in terms of addressing very important questions, which would monitor the need for, the amount and nature of, the distribution and the impact of government health expenditure among the population at large and among specific groups.

Appendix Tables

Per Capita Total Expenditure on Medical and Public Health and Family Welfare- Major State wise										
	(Rupees)									
	(in real terms- measured at constant prices)									
	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Andhra Pradesh	75.93	71.68	69.66	82.19	82.88	93.09	97.69	108.27	106.17	NA
Assam	80.25	76.76	77.58	74.28	74.99	59.44	69.12	75.25	73.64	62.71
Gujarat	83.17	86.13	89.55	93.47	107.54	133.04	140.09	128.87	97.06	106.30
Haryana	81.30	78.30	74.41	78.14	85.90	103.32	92.16	86.19	86.88	88.22
Karnataka	86.43	89.75	87.64	84.61	104.86	111.42	127.40	129.19	135.06	119.11
Kerala	100.73	106.49	105.49	102.57	106.02	111.37	130.68	115.30	128.40	130.62
Maharashtra	87.76	82.04	86.56	88.54	91.92	91.30	98.93	111.81	115.38	104.93
Madhya Pradesh	64.14	66.37	65.51	73.65	75.63	97.71	100.45	59.30	35.97	70.01
Orissa	58.92	64.31	58.80	60.59	60.03	72.18	73.06	75.86	72.24	75.13
Punjab	111.09	99.92	100.34	112.73	125.54	152.03	152.98	166.55	150.51	144.28
Rajasthan	85.46	94.09	100.80	102.16	109.61	116.19	109.78	105.64	110.08	94.01
Tamil Nadu	98.64	103.84	105.62	105.99	115.09	128.89	131.42	123.00	122.35	117.36
Uttar Pradesh	67.71	59.35	58.87	61.21	68.51	52.57	52.59	54.24	48.29	NA
West Bengal	74.31	68.68	71.81	78.43	74.19	97.30	106.20	115.85	102.31	98.20

Per Capita Family Welfare Expenditure- Major State wise										
	(Rupees)									
	(in real terms- measured at constant prices)									
	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Andhra Pradesh	15.90	15.59	14.83	17.97	16.15	19.75	19.37	22.14	21.16	NA
Assam	14.41	10.11	12.95	10.15	9.59	10.17	11.50	14.80	13.11	11.05
Gujarat	14.14	14.41	14.50	13.59	16.46	18.64	18.12	18.62	11.80	15.70
Haryana	20.21	17.56	14.61	13.84	13.67	16.43	13.60	9.93	13.29	13.24
Karnataka	13.63	15.58	16.15	13.06	18.95	15.66	21.00	21.45	27.44	19.79
Kerala	16.81	17.77	15.50	15.10	14.97	15.65	19.52	15.47	17.44	15.34
Maharashtra	12.80	9.59	13.07	11.44	10.61	7.32	8.11	12.61	12.78	9.10
Madhya Pradesh	11.53	11.09	11.29	12.34	11.66	12.22	13.33	8.01	4.35	9.04
Orissa	13.00	13.25	13.59	12.87	12.06	14.82	12.84	12.55	10.09	10.97
Punjab	17.94	11.14	14.73	16.37	11.95	12.20	11.00	11.67	9.81	8.51
Rajasthan	17.26	21.36	20.38	21.22	22.98	21.81	19.86	17.97	23.93	15.46
Tamil Nadu	18.11	19.01	18.84	13.83	18.83	21.16	19.66	19.56	21.85	22.59
Uttar Pradesh	18.37	18.08	14.15	17.14	16.88	9.55	9.30	10.76	12.62	NA
West Bengal	11.18	9.22	10.37	9.52	9.05	12.72	13.09	14.29	12.35	11.37

Per Capita Public Health Total Expenditure- Major State wise										
	(Rupees)									
	(in real terms- measured at constant prices)									
	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Andhra Pradesh	14.19	14.35	12.90	14.82	13.74	13.20	14.05	14.55	14.42	NA
Assam	11.00	10.58	10.46	8.39	13.57	8.57	10.85	11.08	9.35	9.16
Gujarat	14.88	16.17	16.56	17.15	19.51	19.30	21.43	16.76	12.28	14.72
Haryana	11.76	11.59	9.88	11.23	18.46	16.75	14.34	13.04	11.52	11.04
Karnataka	5.71	6.11	5.65	5.53	5.98	5.55	6.59	5.86	5.64	5.56
Kerala	7.85	8.15	8.75	8.55	8.58	9.74	11.58	10.26	8.83	9.79
Maharashtra	33.84	34.46	35.11	36.76	38.11	37.85	36.24	44.86	51.72	45.09
Madhya Pradesh	10.84	10.20	8.78	10.30	10.36	16.43	13.60	8.44	3.92	10.00
Orissa	8.83	9.24	8.66	8.71	8.83	10.56	10.75	10.34	9.03	11.89
Punjab	11.01	10.06	9.22	10.43	13.09	12.51	11.54	10.56	9.19	9.73
Rajasthan	8.71	8.79	9.91	11.30	10.65	9.67	10.99	7.49	7.31	6.69
Tamil Nadu	13.36	13.84	14.29	14.33	15.86	19.26	18.26	17.88	15.28	12.51
Uttar Pradesh	10.88	8.90	9.84	10.18	11.71	8.27	5.20	5.04	4.31	NA
West Bengal	9.05	8.45	8.58	9.59	8.44	11.66	10.92	10.61	9.72	8.97

Infant Mortality Rates in India

States/UTs	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Andhra Pradesh	70	73	71	64	65	67	65	63	66	66	65	66	62
Assam	76	81	76	81	78	77	74	76	76	76	75	74	70
Bihar	75	69	73	70	67	73	71	71	67	63	62	62	61
Chhatisgarh	NA	94	78	79	77	73							
Gujarat	72	69	67	58	64	62	61	62	64	63	62	60	60
Haryana	69	68	75	66	70	69	68	68	70	68	67	66	62
Jharkhand	NA	62	71	70	62	51							
Karnataka	70	77	73	67	67	62	53	53	58	58	57	58	55
Kerala	17	16	17	13	16	15	14	12	16	14	14	11	10
Madhya Pradesh	111	117	104	106	98	99	97	94	98	90	87	86	85
Maharashtra	58	60	59	50	55	55	48	47	49	48	48	45	45
Orissa	122	124	115	110	103	103	95	96	98	97	95	91	87
Punjab	61	53	56	55	53	54	51	51	54	53	52	52	51
Rajasthan	84	79	90	82	84	86	85	85	83	81	79	80	78
Tamil Nadu	59	57	58	56	59	54	53	53	53	52	51	49	44
Uttar Pradesh	99	97	98	94	88	86	85	85	85	84	83	83	80
West Bengal	63	71	65	58	62	58	55	55	53	52	51	51	49
Arunachal Pradesh	NA	44	43	44	39	37							
Delhi	NA	36	31	32	29	30							
Goa	NA	23	21	23	19	17							
Himachal Pradesh	69	75	67	63	67	63	62	63	64	62	60	54	52
Jammu & Kashmir	70	NA	45	52	50	48	45						
Manipur	NA	25	25	23	20	14							
Meghalaya	NA	52	56	58	56	61							
Mizoram	NA	23	19	21	19	14							
Nagaland	NA	N.A.	N.A.	N.A.									
Sikkim	NA	52	49	49	42	34							
Tripura	NA	49	42	41	39	34							
Uttaranchal	NA	58	52	50	48	41							
Andaman & Nicobar Islands	NA	30	25	23	18	15							
Chandigarh	NA	32	28	28	24	21							
Dadra & Nagar Haveli	NA	61	56	58	58	56							
Daman & Diu	NA	51	35	48	40	42							
Lakshadweep	NA	26	32	27	33	25							
Pondicherry	NA	21	22	23	22	22							
India	80	80	79	74	74	74	72	71	72	70	68	66	63

