Government expenditure on health in Andhra Pradesh since the eighties: Has it been appropriate?

Dr. Prasanta Mahapatra[1]

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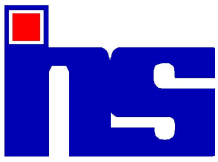

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About the Author:

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His work in the area of health policy include government expenditure analysis, hospital performance measurement, socioeconomic aspects of asthma, estimating burden of disease and cost effectiveness of interventions. He is currently working on a project to estimate burden of disease and cost effectiveness of interventions in Andhra Pradesh. He has been recently selected by the WHO as TDR research fellow to do a doctoral program in health policy, epidemiology and health economics at the Harvard School of Public Health, starting September, 1994. His current interests include burden of disease, cost effectiveness of interventions, setting priorities for research, quality of health care, accreditation systems etc.

Summary

Most analyses of government expenditure on health in India have covered the whole country. As health is a state subject study of health expenditure at the state level provides an opportunity to understand the exact nature of allocations for health services. The trend of Andhra Pradesh government expenditure from 1980-81 till 1993-94, on health and related services is analyzed. First the total health expenditure by government for health related services is looked at from different perspectives. This is followed by an analysis of the health services expenditure on public health type of services and hospital based services. The expenditure on public health services is further decomposed into its components. Composition of hospital services expenditure is analyzed from the perspective of the supportive role desired of the hospitals. Expenditure on health manpower development is then analyzed in relation to the service components.

Per-capita expenditure on health and related services increased from Rs. 43 in 1980-81 to Rs. 100 in 1992-93 calculated at 1980-81 prices. However in terms of share of SDP health services expenditure stagnated around 1% and health related services expenditure increased from 3 to 4%. The increase in health expenditure was a result of growth in the economy rather than any change in allocative emphasis. The increased in health related services was mainly contributed by education and community development. Water supply, sewerage and sanitation did not benefit as much. Sewerage and sanitation services have been particularly neglected.

The structure of allocation with in the health sector provided some reassuring trends and a few disturbing features as well. Government expenditure on public health services viewed as a share of total government health services expenditure, by and large, increased during the eighties and early nineties. This is reassuring. Composition of the hospital sub sector however continues to

be biased in favor of the tertiary level institutions. Composition of the expenditure on education and training also needs to be altered to favor training of health workers and nurses. These are disturbing.

The share of hospital services expenditure in Andhra Pradesh is lower than what has been from most developing country studies. During the 1980s the shift in allocative emphasis away from hospitals was almost equally shared by secondary and tertiary level hospitals. The actual share of secondary and tertiary level hospitals during the eighties has been 50:50 against a suggested norm of around 66:33. Correcting the initial imbalance in resource distribution between the secondary and tertiary level hospital may take many years if it is done solely through changes in allocation at the margin. Deliberate, one time, investments to increase the secondary level hospital stock may be necessary, if the imbalance is to be corrected in reasonable time.

Key words

Government health expenditure, allocation of resources, health services, health related services, hospital services expenditure, first referral hospitals, secondary level hospitals, tertiary level hospitals, public health services, primary health care institutions, primary health care services, primary health center network, water supply, sewerage and sanitation., community development, housing for poor.

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India continues to follow the primary health care (PHC) approach. (Government of India 1983). Andhra Pradesh government has implicitly adopted the National Health Policy (NHP) and the five year plan strategies. Allocation of government's health sector expenditure promoting the PHC approach or at least compatible with it, is an important prerequisite for achievement of the Health for all (HFA) goal.

The general thrust of structural adjustment and liberalized economy in recent years has added another dimension. The approach is to increasingly rely on the private sector. Thus freezing of government expenditure (and /or reducing it) and increasing private sector outlay, it is hoped, will improve availability of services. The structural adjustment policy affects the health sector in two different ways. Firstly recognition of private sector's role and its size. Secondly, the safety net of increased public investments in education and health for the poor. Recent studies have highlighted the large size of the private sector and its dominant presence in certain areas of the medical and health care (Bhat 1993). Though private financing of health services is important in terms of the size of its contribution to total health expenditure, the pattern of allocation within the government sector determines core features of the health sector. On the other hand governments

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ability to achieve equity, provide public goods type of services and handling of market failures is linked to the quantum and composition of health sector expenditure.

Most analyses of government's health services expenditure have covered the whole country (Reddy 1992, Duggal et al 1992, Tulasidhar 1993, Tulasidhar & Sarma 1993, Panchamukhi 1993, Bhaskara Rao et al 1993). They are usually based on aggregated accounts of governments available at the national level. According to India's constitution health is a state subject. All expenditure within a state is incurred by the state government either from its own resources or with funds from the central government. In fact the share of central funds in governmental health services expenditure has been quite small (4% - 7%). It has further gone down in recent years (Tulasidhar 1993). Moreover analysis of government health expenditure has been fraught with may methodological problems mostly attributed to non availability of desegregated data (Berman 1993, Bhaskara Rao et al 1993). Hence study of health expenditure at the state level provides an opportunity to understand the exact nature of allocations for health services.

Composition of health departments expenditure in Andhra Pradesh during the eighties were studied by me and Berman (Mahapatra & Berman, 1991). Narayana and Reddy (1993) have analyzed public expenditure on health. In this paper I have expanded the coverage to include government expenditure in core health services as well as the health related services like water supply, sanitation, education etc. I have updated the analysis till financial year 1993-94. This will help look at the situation emerging out of the recent economic liberalization. It has been possible to pay greater attention to methodological issues. For example probing into the actual nature of expenses booked under certain heads of accounts of government revealed that its true nature is not fully reflected in its description according to the government accounts classification system.

My objective in this paper is to examine the trend of government expenditure in health and related areas. Has there been any increase in allocations to health and related services? What is the magnitude of increase if any? Has the composition of the government's health services expenditure changed? Is the change if any, consistent with public policy at the state and national level?

Methodology of data collection and analysis is first described. I have then analyzed the total health expenditure by government for health and related services from different perspectives. This is followed by an analysis of the health services expenditure on public health type of services and hospital based services. The expenditure on public health services is further decomposed into its components. Composition of hospital services expenditure is analyzed from the perspective of the supportive role desired of the hospitals. Expenditure on health manpower development is then analyzed in relation to the service components.

MATERIALS AND METHODS

Methodology adopted in an earlier study (Mahapatra and Berman, 1991) has been further developed. Data on the health and related services expenditure of the government of AP was obtained from the state office (AG) of the controller and auditor general of India (CAG), who is the constitutional authority for reporting on the states accounts to the legislature. Government accounts are primarily maintained by a network of district treasuries and sub treasuries spread all over the state. Reports from the district treasuries are consolidated by the state finance ministry. Finance ministry compile the accounts for the state and furnish it to AG. AG reconcile finance ministry's accounts with consolidated fund balances reported by the government bankers and the Reserve Bank of India. They undertake sample verification and departmental audit to check

correctness of classification, accounts as well as propriety of expenditure. Hence data from AG is considered most accurate. The next best source being the finance ministry and its budget books which contain an account of expenditure for the pervious year. Most of the data for this study was collected from AG. Wherever there was any gap, data from the finance ministry accounts was used. For the current financial year (1993-94), allocations from the budget book has been used. In case of housing there is usually a gap in release of funds by the state government and actual utilization. Hence actual expenditure data was collected from the two (rural and urban) weaker section housing corporations in the state. These government owned corporations could provide annual expenditure data from 1983-83. The expenditure on housing from 1979 to 1982-83 was available in an aggregated form. It was equally distributed among the four years. The quantum of government expenditure on housing during early eighties was very low in comparison to the later years. Hence this would not affect the present analysis in any significant way. Expenditure on community development was obtained from the panchayatiraj and rural development department of the government. Community development expenditure from the panchayatiraj department consists of employment generation schemes and the beneficiary oriented schemes. Sizable expenditure on beneficiary oriented schemes are also made by various departments under the social welfare ministry of the state. These figures could be gathered within the available time. Hence the community development expenditure is an underestimate.

Government accounts classify expenditure into major heads like; education sports and culture, medical and public health, water supply and sanitation, housing urban development etc. Some major heads may have sub classifications within them. These are called sub-major heads. Expenditure on each program is classified under a separate minor head. Thus for a group of services represented by a major and sub-major head there will be many minor heads each

representing a program. Examples of minor heads under public health are; direction and control, prevention and control of diseases, prevention of food adulteration etc. The next tier of classification viz. the sub head of account under each minor head reflects the identity of schemes undertaken in pursuance of programs represented by the minor head. The major, sub major and minor heads are fixed at the national level and are common for all states. The sub heads are created by each state government according to their needs (Govt of AP, 1988). Though performance budgeting is one important objective of the classification system, in practice government accounts do not lend itself for finer analysis. This is mainly because expenditure for same or similar purposes are classified under different sub heads due to inadequate application at the time of creation of sub heads, generally long gaps between comprehensive revision of classification systems, etc. For example school health program was initiated by the education department to start with. So the expenditure was classified under the major head primary education. Subsequently the health department launched its school health program and this time the expenditure is classified under public health. Hence it is necessary to study the nature of expenditure booked under each subhead and classify it according to the researcher's analytical requirement. For this study expenditure information was collected right up to the sub head level. A set of analytical head. Expenditure items assignable to more than one analytical head were first assigned as overheads. Expenditure booked under each overhead type of account code was then distributed to two or more analytical heads according to formulae arrived at for each such item of expenditure. The formulae for distribution of overheads were arrived at on the basis of its contribution to different analytical heads. Most of the administrative overheads were distributed equally among all services covered by it. In some cases the ratio of expenditure under different

simple analytical heads was studied for different years. This provided some insights to distribute the overhead.

All data correspond to the financial year in India, which is from April to March. In all graphs and tables the financial year is noted by the year in which it began. For example 1980 or simply 80 for the financial year 1980-81, 1981 or 81 for the financial year 1981-82 and so on. All expenditures were adjusted for the base year 1980-81, based on the price index for urban non manual employees[1]

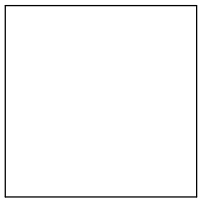
Health expenditure is defined to include expenditure on health services as well as the health related services. "Health services" mainly consist of public health services, hospital services, education and training for health services and alternate systems of medicine. "Health related services" include education, water supply, sewerage and sanitation, housing for poor and community development. Government expenditure on education was separated into primary including adult literacy, secondary and higher. Expenditure on primary and secondary education is included under health related service in view of its stronger relationship with health indicators. The distinction of health services expenditures from health related services expenditures used here is in line with WHO guidelines on indicators for monitoring health for all (WHO 1981).

TOTAL HEALTH EXPENDITURE:

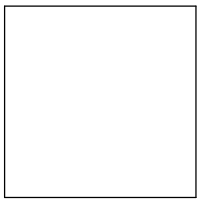
Absolute expenditure by government on health and related services have grown in real terms during the period of study (Figure- 1). In figure 1 the state domestic product (SDP) has been deflated by a factor of 50 to fit it within the scale of the graph. The purpose is to compare the trend of SDP growth curve with that of health and related services. By and large the growth

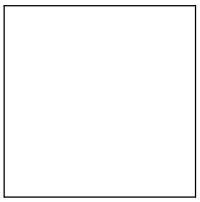
[1] The deflators for various years from 1980-81 to 1993-94 were; 100,111.92, 120.86, 133.33, 144.17, 153.93, 166.12, 177.78, 188.34, 202.98, 214.90, 227.64, 243.09 respectively.

pattern of SDP is reflected in the trend of government expenditure on health related services. However, growth in health services expenditure by government has not been commensurate with the growth in SDP. Per capita expenditure on health related services grew from Rs. 43 in 1980-81 to Rs. 100 in 1992-93 (Figure - 2). Per capita expenditure on health services increased in real terms from about Rs. 17 in 1980-81 to Rs. 28 in 1992-93 (Fig - 2). Growth in health related services has been more in comparison to the health services.

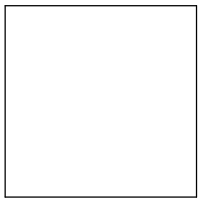


When government expenditure on health and related services is measured as a share of state domestic product (SDP) no clear increase is visible for health services (Fig - 3). The increase during early eighties was followed by constant decline resulting in a lower share by 1992-93. As a result total health expenditure by government stagnated around 1% of SDP. Health related services expenditure by government was a little less than 3% till 1982-83. From 1982-83 it rose constantly to a high of 5.9% during 1986-87. There was then a decline, though less than the earlier rise. As a result government expenditure on health related services have been maintained at around 4% of SDP. When measured as a share of total government expenditure health services maintained its share of about 5%. Health related services increased their share from about 13% to 18%.





In summary there has been a rise in the quantum of government expenditure on health as well as the related services. The rise can be due to general improvements of the state's economy as measured by the size of SDP and an increased emphasis by government for certain services. The increase in government expenditure on health services appears to be mainly a function of the general improvements in the economy rather than any added emphasis on these services by the government. Government expenditure on health services expressed as a share of total government expenditure remained constant at around 5%, expressed as a share of SDP it remained constant around 1%. It is well known that investments in certain health related services have significant impact on improvement of health status of a population rather than direct health care services. Safe water and sanitation are good examples. Thus increased emphasis on health related services and maintenance of the share of health services expenditure is not incompatible with the HFA goal. Hence we need to study the composition of expenditure on these two broad groups of services.

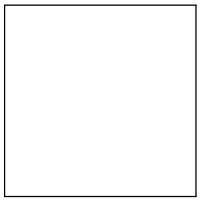


COMPOSITION OF EXPENDITURE ON HEALTH RELATED SERVICES

Absolute expenditure on primary education and literacy programs has shown the maximum increase followed by secondary education (Figure - 5). Expenditure on community development also increased from about 0.2 billion rupees in 1980-81 to about one billion rupees

(at 1980-81 prices) in 1992-93. At the beginning of the eighties allocations to water supply was already about 0.3 billion rupees where as for housing it was very low (0.05 billion rupees). Except for the financial years 1982-83 and 1987-88 there was either an increase in outlay on water supply or the quantum of allocations was maintained. In case of housing for the poor there was a substantial increase during 1983-84. This was maintained till 1987-88. Between 1988-89 1990-91 there was a gradual decline to be followed by restoration of earlier levels of expenditure from 1991-92. There is a further jump in 1993-94. Inquiries with the housing corporations revealed that the expenditure is likely to go up further in the coming years.

Around 62% to 72% of health related expenditure at different points of time has been on education (Figure - 6). The rest is mostly on community development, water supply and housing for poor. Contribution of sewerage and sanitation services has been marginal. It is well known that sewerage and sanitation in addition to safe water have a very direct impact on the health status of any population. Though the growth in health related services expenditure has been quite impressive, most of it has been contributed by growth in the area of education and community development which are important social objectives in their own right. The rise in expenditure on health related services appears to have been the result of these important and independent objective rather than any conscious policy linkage with the impact on health status.

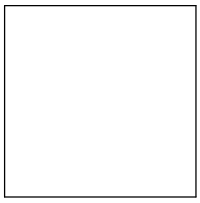
At this stage an explanation of the system of  financing and rendering of some of these services prevalent in the state is necessary. Primary education, water supply, sewerage and sanitation are the responsibility of local bodies. There are broadly two type of local bodies; (a) municipalities and corporations in urban areas and (b) panchayati raj bodies in the rural areas. The urban area local bodies consist of three large municipal corporations and 112 municipalities. Though specific data is difficult to gather it is generally recognized that the financial position of urban area local bodies is relatively better than the rural area local bodies. The state government gives specific grants in aid for various services like primary education, water supply etc. For example primary education is fully funded by the state while most of the facilities are actually run by the expenditure by state government on this head. There is hardly any expenditure on creation of sewerage infrastructure in rural areas neither by gram panchayats nor by the state government. The expenditure by the state government towards sewerage and sanitation reflects a small part of the total public expenditure for this purpose in the urban areas. The rest of it is met by the urban area local bodies from out of their own resources. Though exact data is difficult to gather it was possible to obtain information with respect to 112 municipalities for the year 1993-94 (Parida, 1994). According to this source grants from state government accounted for 30% of the total revenues of municipalities in 1993-94. 15% of the municipal expenditure is spent on maintenance of water supply, sewerage and sanitation systems. Another 18% is spent on “developmental” works like roads, sewerage systems. Storm water drainage, school buildings etc. The size of combined expenditure by the 112 municipalities

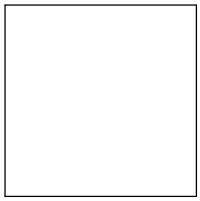
in 1993-94 was 1.789 billion rupees at current prices equivalent to 0.71 billion rupees at 1980-81 prices. About 0.24 billion rupees at 80-81 prices (one third of total) would have been spent on developmental works and maintenance of water supply, sewerage and sanitation systems. Thus the expenditure on water supply, sewerage and sanitation alone would be less than this figure of 0.24 billion rupees prices after setting off the outlays on roads, school buildings etc. Compare this with the 0.67 billion rupees, at 80-81 prices, spent by state government on water supply and sewerage. In all probability the combined expenditure of municipalities on water supply sewerage and sanitation would be around 20% to 25% of the total public expenditure on these services. Hence the state government expenditure can be considered as a proxy to total public expenditure on these services. The whole purpose of the arguments in this paragraph is to suggest that any inference based on the state governments expenditure on water supply, sewerage and sanitation can be considered to be reflecting the overall public investments in the state on these services. As mentioned earlier low investments in the area of sewerage systems is disturbing. Figure - 7 shows the rises and fall in state expenditure on sewerage and sanitation systems. Apart from the relatively low quantum of expenditure, investment in this area seems to be taking place in spurts. State as well as national health policy has to address this issue in order to realize the full potential of the investments made in the area of health services.

HEALTH SERVICES EXPENDITURE

Government expenditure on each major component of health services increased in absolute terms (Figure - 8). The increase was more in case of public health services followed by

the hospitals, medical education and alternate systems of medicine in that order. There was a sudden spurt in expenditure on public health services in the year 1991-92. The upward trend was maintained in 1992-93. This coincides with the post liberalization period. However it is difficult to draw conclusion on the basis of two years. Figure - 9 shows the trend of distribution among these four major components services in percentage terms. Both public health and hospital services started the decade of eighties with their share on either side of 45%. Share of public health services was above 45% of total health services expenditure and that of hospitals below 45%. The curve for public health services has shifted up and that for hospital services moved down in subsequent years. The share of public health services has steadily increased form 48% in 80-81 to 57% in 92-93. Hospital services had a consistent and significant reduction in its share of expenditure from about 39% in 80-81 to about 30% in 92-93.





The share of hospital services in 29 countries reviewed by Barnum& Kutzin (1993) was 25% (Nepal) to 81% (Malawi) of total health services expenditure. The hospital services in only four countries out of these had shares of less than 40% (Indonesia 37%, Mozambique 36%, Nigeria 30%, Nepal 25%). The ORG study (1986) reported an all state average of 45% for medical relief. This included first contact curative services through dispensaries etc. Thus the share of hospital services would have been a little lower than 45%. The share of hospital services

in Andhra Pradesh then was about 32%. Thus Andhra Pradesh with 39-30% of its total public health services expenditure on hospitals can be considered to be among the less hospital oriented health services systems. Unfortunately WHO's PHC strategy and India's national health policy did not anticipate situations where share of hospital component of health services expenditure was lower than what is seen elsewhere in the world.

Though absolute expenditure on medical education and training for health services increased in terms of its share of total health service expenditure there was a decline. It was 10% in 80-81 and reduced to 9% in 92-93. Absolute expenditure on alternate systems like Ayurveda, Homeopathy and Unani services marginally increased. Its share of total health services expenditure remained stagnant.

Another feature worth noting is the annual growth pattern of each component. The upward shift in share of public health services does not mean that it rose from year to year. There was a sudden and substantial increase in 1982-83 and 1983-84 followed by a gradual fall. However the lowest point reached by the falling share of public health services was 7 percentage points higher than that in 1980-81 and 1981-82. Thus there was a net gain in allocations for public health services. The pattern is reversed in case of hospital services. In fact it is almost a mirror image of the curve for public health services. Evidently the gain in share of public health services was compensated by corresponding reduction in share of hospital services. This is largely due to the way I have grouped different components of health services expenditure. Public health and hospital services cumulatively account for between 87 to 91% of total health services expenditure during different financial years covered by this study. So any increase in one is bound to be reflected in the other. Considering that a major part of the policy focus in the post Alma Ata

period has been on hospital versus non hospital interventions, I feel the above grouping is relevant. The trends in Andhra Pradesh are consistent with the national and international objective of emphasizing primary health care strategy as opposed to hospital based strategy.

The year to year variation in growth pattern means that any study of health services expenditure limited to one or two years could show up different picture, depending on the years chosen. For example, a study based on 1982-83 and 83-84 data would show the enormous growth of expenditure in public health services and that in 85-86 to 86-87 will show the reverse. The trust lies in between. Hence study of expenditure patterns over a longer period of say about 10 years is required to get at the true trend of expenditure.

Expenditure on Public Health Service

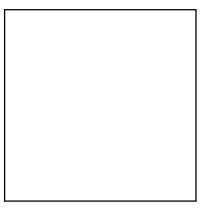
Expenditure on public health services was further broken down in to:

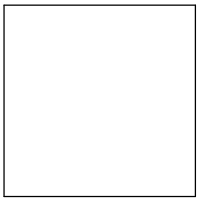
1. Primary health care institutions
2. Primary health care services
3. Disease control programs
4. Family planning services

Figures 10 show the trend of absolute expenditure on each disaggregated component of public health services. In figure 11 the composition of government expenditure on public health services is shown in an area graph. PHC institutions, family planning and disease control programs had almost the same level of funding. These three groups of services have shown a fairly good deal of stability in the level of allocations to them. Expenditure on PHC services has been a little lower. The only two years its share exceeded that of the other three components were 1982-83 and 1983-84 which was also reflected in the allocations to public health services also. This was mainly due to introduction of mid day meals scheme and its subsequent withdrawal. There was

some increase in 1991-92, part of which was lost in the subsequent two years. The sudden spurt in expenditure on public health services during 1992-93 was due to PHC institutions and disease control programs. In addition, PHC services and family planning yielded some more ground to these two groups of programs during 92-93. In recent years (early nineties) share of public health services expenditure on family planning appears to have given way to the other three components.

Primary health care institutions include the PHC network consisting of community health centers, primary health centers, subsidiary health centers, and sub centers. In addition there are dispensaries in certain areas maintained by the state government for general public and those maintained by the employees state insurance (ESI) corporation for the industrial workers. Expenditure on vital statistics, registration of births and deaths, prevention of food adulteration, drug control administration, water testing laboratories, water and food testing components of public health laboratories are all included here. Expenditure on water testing labs maintained by the public health engineering department was added to this. Expenditure booked under small pox was eradicated. The staff are actually being used in primary health centers. Inquiries with the directorate of health revealed that the vaccinators and health inspectors (which constitute a major part of the program staff) were re-deployed to PHC institutions under the multipurpose health workers scheme, in 1987. Though formal re-deployment of the residuary staff is yet to be authorized by the government the directorate of health is in fact using them for various health care programs like immunization and

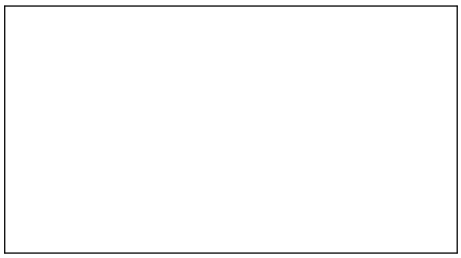




other public health programs (AP Director Health, 1994). Hence this expenditure has been included under PHC network part of the primary health care institutions. Expenditure incurred for development of PHC to improve their overall ability to implement disease control programs were included here. Expenditure on reorientation of medical education and linkage of medical colleges to rural health centers is included here as it mostly is to maintain the rural health centers attached to medical colleges. The India Population Project II (IPP-II) was largely devoted to strengthening of PHC and sub centers. Similarly one component of IPP-VI is for PHC buildings. Hence all expenditure on IPP-II and a part of IPP-VI were included with PHC institutions. Predictably the expenditure on PHC institutions largely consists of the PHC network and has been rising steadily (Figure - 12).

Primary health care services consist of all health interventions except the disease control and family planning programs. These include child survival and safe motherhood (CSSM) cluster of programs funded under general family welfare services. Integrated child development scheme (ICDS) and special nutrition programs (SNP) administered by the women and child welfare department has been included here. The combined expenditure on all these schemes focusing on child survival, child development and safe motherhood have shown consistent and significant increase in absolute terms (Figure - 13). Mid day meals program introduced by education department for some time (1982-83 to 1984-85) was included here. During those years

sizable amounts (146 to 227 million rupees at 1980-81 prices) were allotted for this purpose. To focus on the trend of expenditure on mother and child oriented schemes the scale of the graph at figure - 13 has been suitably reduced. As a result the curve for mid day meals has shot beyond the area of the graph during 1982-83 to 1984-85. Other schemes included as PHC services are health education and miscellaneous rural health services. The level of expenditure on these have been small.

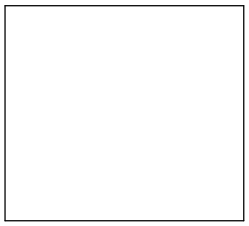


Disease control programs include expenditure on control of malaria, leprosy, tuberculosis, blindness, guinea worm, filariasis, sexually transmitted disease, yaws, Japanese encephalitis, diabetes, AIDs etc. Expenditure booked under general family welfare for Pap smear tests have been classified under control of cancer. Expenditure on control of epidemics is fairs and festivals have been included here. The reason why allocations for small pox is clubbed with PHC institutions instead of disease control has been described earlier. Leprosy and tuberculosis have a small hospital component. Ideally they should have been shown under hospitals. However the exact amount for this purpose could not be arrived at. As the size of the hospital component is small it would not affect the present analysis. Similarly a part of the PHC multipurpose staff and borne on malaria control program. The exact size of this could not be ascertained. In terms of Disaggregation of Exp. on Disease Control Progs expenditure three disease control programs stand out. These are malaria, leprosy and tuberculosis in that order (Figure - 14). The increase in expenditure on other disease control programs during 1992-93 and 1993-94 is mainly due to allocations made for AIDs control and prevention of blindness.

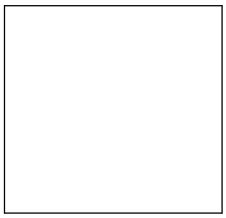
Interestingly the increase in the quantum of expenditure on family planning up to 1991-92 did not show any deviation from the growth of overall expenditure on public health services (Figures 10 & 11). In terms of percentage share of public health services expenditure it remained constant up to 1991-92. After that a decline in the quantum as well as the percentage share is visible. This contrasts with the rising allocations by government under the major head share of family welfare services. This is due to the gradual redefinition of the scope of family welfare services. The original family planning program mostly invested in birth control measures. It was re-designated as family welfare in 1977 to rectify the “nasbandi” (sterillzation) excesses during 1974-76. Gradually allocations under family welfare services have come to include schemes for child survival, safe motherhood, strengthening of PHCs and expansion of sub center network. I have include these components in PHC services and PHC institutions respectively. A minor part of family welfare expenditure is meant for hospital based sterilization beds and post partum schemes. These are included under hospital services. The expenditure for birth control measures and non specific family welfare services have been retained in family planning. Evidently there has been hardly any change in the amount allotted for this purpose since 1980. The stagnation in share of expenditure on core family planning activities is consistent with government policy of redefining the scope of these services.

Expenditure on Hospital Services

Hospital services consist of first referral or secondary and tertiary level hospitals. Secondary level hospitals are mainly non teaching district and sub district hospitals. All teaching hospitals are classified as tertiary hospitals. These are all located in regional cities. Hospital based components of other programs are included here. For example expenditure on sterilization bed



and post partum scheme of family welfare are included in tertiary level hospitals.



Expenditure on re-canalization surgery funded by family welfare is included in tertiary level hospitals. Hospital components of blindness control program is added to secondary or tertiary hospital as the case may be. ESI hospitals are clubbed with secondary hospitals.

Figure -15 shows the level of absolute expenditure on secondary and tertiary level hospitals. Figure 16 shows the composition of hospital services expenditure in percentage terms. Both categories of hospitals had almost equal levels of expenditure at the beginning of the eighties. There was a slight gain by the secondary level hospitals towards the later part of eighties. In recent years the share of tertiary hospitals has been marginally increasing. The secondary level hospitals have had to yield correspondingly. Both secondary and tertiary level institutions shared the hospital expenditure almost equally (50:50). About 19% of total health services expenditure was consumed by each tier of hospitals. The reduction in share of hospital expenditure was also shared by both almost equally. The share of secondary level hospitals was reduced from 19.92% in 1980-81 to 15.03% in 1992-93. Similarly the share of tertiary level hospitals was reduced from 19.31% to 15% during the same period. Hence the ratio of secondary to tertiary level hospitals was maintained at the 50:50 level throughout the period of the study (Fig-16).

Comparatively lower share of hospital services and its gradual reduction in AP was mentioned earlier. However mere reduction in share of hospital expenditure may not mean much. Composition of hospital expenditure within itself is very important. Concentration of funds on tertiary hospitals can lead to under funding of first referral (secondary level) hospitals. This would lead to inadequate or poor quality of first referral hospital care. People would then bypass this tier of health services and seek nearest tertiary center. Therefore excessive concentration of funding on a few facilities will feed on itself and result in an increasingly inefficient and inequitable of hospital resources (Barnum & Kutzin 1993.). To judge the appropriateness of allocation within the hospital sub sector of health services some notion of normative composition for a given economy is required. Although large expenditure on hospitals are competitive with public health services, first referral hospitals can provide substantial primary health care services directly as well as support to non hospital aspects of primary health care. A pyramidal structure of various tiers of health institutions is implied by the concept of referral system. So in terms of bed capacity size of first referral (secondary level) hospitals need to be higher. In another study Peter Berman and I have suggested a normative ratio of 66:33 (2:1) between allocations to secondary and tertiary level hospitals (Mahapatra and Berman, 1993). This is based on the need for more number of district and sub-district hospitals on the one hand and, higher resource intensity of tertiary hospitals on the other. The actual ratio of secondary to tertiary level hospitals in 1980-81 was 50:50. This could have been rectified if there was a reduction in allocations to tertiary hospitals accompanied by a corresponding increase for secondary level hospitals. However this did not happen. The ratio of secondary to tertiary level hospitals remained almost the same throughout the eighties and in recently years as well. Considering this against the suggested norm, it can be

said that the preexistent allocative bias in favor of tertiary level hospitals has been continued during the post Alma Ata period as well.

Expenditure On Education And Training For Health Services

More than 70% of the expenditure on education and training was spent on medical education. Only 10 to 20% of the education and training expenditure went for training of nurses, health workers and paramedics (Figure - 17). There is a serious imbalance here. It is well known that the state is having shortage of health workers, nurses as opposed to doctors (ISHA 1992). However there is no sign of any allocative change in this area. Alternate system of medical services (Indian systems of medicine and Homeopathy) consumed about 3% of total health expenditure. But their share of the education and training expenditure is 6 to 15%. This is probably due to the focus on training of medical graduates in alternate systems of medicine.

Composition of Exp. & Trg. For Health

SUMMARY AND CONCLUSION

This study has brought out mainly three groups of issues. These are about the methodology of government expenditure analysis, overall allocations to health and related sector and the structure of allocations within health sector itself.

In the Indian context a state is the appropriate unit for analysis of expenditure. Any analysis of government expenditure should cover a fairly long period. Study of changes in government expenditure for short periods of less than say five years can be misleading. There is a

tendency to hide the actual nature of allocation under already accepted schemes. Government accounts do not fully reflect the purpose for which the expenditure is incurred. Aggregations at minor head level can be misleading. For example a large part of the family welfare allocations are actually meant for strengthening the PHC institutions and services.

Per-capita expenditure on health and related services increased from Rs. 43 in 1980-81 to Rs.100 in 1992-93 calculated at 1980-81 prices. However in terms of share of SDP health services expenditure stagnated around 1% and health related services expenditure increased from 3 to 4%. The increase in health expenditure was a result of growth in the economy rather than any change in allocative emphasis. The increased share of SDP spent on health related services was mainly contributed by education and community development which are a social objectives in their own right. Water supply, sewerage and sanitation did not benefit as much. Sewerage and sanitation services have been particularly neglected

The structure of allocation within the health sector provided some reassuring trends and a few disturbing features as well. Government expenditure on public health services viewed as a share of total government health services expenditure, by and large, increased during the eighties and early nineties. This is reassuring. Composition of the hospital sub sector however continues to be biased in favor of the tertiary level institutions. Composition of the expenditure on education and training also needs to be altered to favor training of health workers and nurses. These are disturbing.

Primary health care institutions, services, disease control programs and family planning almost equally shared the primary services component of health services allocation. Allocation to alternate systems of medicine remained stagnant. The share of allocations for paramedical and

health worker training reduced. There was a consistent and steady increase in combined allocations for primary services, alternate systems of medicine and paramedical training. The increased share of allocation to these priority areas was accompanied by a consistent and steady decline in allocations to hospital services. The share of hospital services expenditure in Andhra Pradesh is lower than what has been from most developing country studies.

During the 1980s the shift in allocative emphasis away from hospitals was almost equally shared by secondary and tertiary level hospitals. In other words no special attention seems to have been paid to the sub-allocation of resources within the hospital sector. The actual share of secondary and tertiary level hospitals during the eighties has been 50:50 against a suggested norm of around 66:33.

The evidence of a consistent and substantial staff in emphasis in favor of primary care institutions, promotive and preventive health care programs reported in an earlier paper is reassuring. However this is not enough. In order that the allocations to hospitals be complementary to PHC, researchers and public health planners need to distinguish secondary and tertiary level hospitals as two distinct categories. Developing country governments, particularly where the available hospital capacity is less than the bare minimum, need to allocate a higher share of hospital components of their budget towards secondary level (first referral) hospitals. Correcting the initial imbalance in resource distribution between the secondary and tertiary level hospitals may take years if it is done solely through changes in allocation at the margin. Deliberate, one time, investments to increase the secondary level hospital stock may be necessary, if the imbalance is to be corrected in reasonable time.

Breakdown of expenditure on disease control programs revealed that most of the allocations in this area has been to control three diseases; malaria, leprosy and tuberculosis. Priorities within the disease control program area may have to be reviewed with the help of fresh analytical tools. Measuring burden of disease with the help of disability adjusted life years (DALY) and estimating cost effectiveness of various interventions with the help of this new measure (World Bank, 1993) may provide some insights.

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STATISTICAL APPENDIX

1. Government Expenditure on Health and Related Services: Amount, Per-capita, % Share of SDP and % Share of Government Expenditure.
2. Government Expenditure on Each Component of Health Related Services.
3. Composition of Government Expenditure on Health Related Services (% Share)

4. Broad Composition of Health Services Expenditure
5. Composition of Public Health Services Expenditure
6. Disaggregates of Expenditure on PHC Institutions, PHC Services and Disease Control Programs.
7. Expenditure on Secondary and Tertiary Level Hospitals: Amounts, % Share.
8. Disaggregates of Expenditure on Education and Training for Health Services.

Appendix Table-1
Government Expenditure on Health and Related Services: Amount, Per-capits, % Share of SDP and % Share of Government Expenditure

Year	Health related services				Health services			
	Amount	Per Cap	% SDP	%Gov. EXP	Amount	Per cap	% SDP	% Gov. Exp
1980	2303.52	43.4	3.15	13.34	893.57	16.84	1.22	5.18
1981	2844.78	52.51	3.55	15.32	928.97	17.15	1.16	5
1982	2877.54	52.09	3.58	14.47	1186.18	21.47	1.48	5.97
1983	3604.9	64.03	4.17	17	1406.58	24.99	1.63	6.52
1984	4022.2	70.13	4.85	14.47	1295.54	22.59	1.56	4.66
1985	4843.18	82.91	5.56	18.05	1299.31	22.24	1.49	4.84
1986	5061.26	85.09	5.9	19.03	1229.55	20.67	1.43	4.62
1987	5530.89	91.33	5.66	20.72	1400.76	23.13	1.43	5.25
1988	5444.33	88.33	4.64	19.61	1593.2	25.85	1.36	5.74
1989	5979.96	95.36	4.86	21.04	1592.85	25.4	1.29	5.61
1990	5933.43	89.21	4.23	19.34	1647.15	24.77	1.17	5.37
1991	6384.7	94.47	4.03	18.36	1855.96	27.46	1.17	5.34
1992	6805.2	99.13	3.82	18.41	1914.74	27.89	1.07	5.18
1993	8344.71	119.75	4.04	18.41	2042.55	29.31	0.99	5.76
All amounts are at 1080-81 prices, expressed as million rupees rounded off to 2 decimal places.								

Appendix Table - 2						
Government Expenditure on Each Component of Health Related Services (Amounts)						
Year	Primary Edn.	Secondary Edn.	Water	Sewerage	Housing	Com. Dev.
1980	1020.33	648.24	335.87	56.53	50.16	192.39
1981	1084.09	727.81	314.28	74.54	44.82	599.25
1982	1128.16	789.64	331.35	61.09	41.5	525.8
1983	1311.21	851.01	453.33	62.76	464.19	462.4
1984	1433.92	913.38	402.85	52.21	406.94	812.9
1985	1681.2	1160.32	481.77	86.18	635.51	798.21
1986	1658.48	1115.26	551.35	95.54	632.51	1008.12
1987	1851.49	1316.19	632.19	97.29	599.37	1034.36
1988	1925.93	1430.52	469.34	81.68	483.87	1053
1989	2319.84	1591.1	465.67	54.26	391.69	1157.4
1990	2308.71	1535.61	459.75	63.04	376.67	1189.66
1991	2331.34	1707.15	614.46	67.47	589.35	1074.94
1992	2677.79	1890.01	665.53	60.46	534.52	976.89
1993	3615	1952.3	657.26	47.27	943.62	1129.25
All amounts are at 1980-81 prices, expressed as million rupees rounded off to 2 decimal places.						

Appendix Table - 3						
Composition of Government Expenditure on Health Related Services (% Share)						
Year	Primary Edn.	Secondary Edn.	Water	Sewerage	Housing	Com. Dev.
1980	44.29	28.14	14.58	2.45	2.18	8.35
1981	38.11	25.58	11.05	2.62	1.58	21.06
1982	39.21	27.44	11.51	2.12	1.44	18.27
1983	36.37	23.61	12.58	1.74	12.88	12.83
1984	35.65	22.71	10.02	1.3	10.12	20.21
1985	34.71	23.96	9.95	1.78	13.12	16.48
1986	32.77	22.04	10.89	1.89	12.5	19.92
1987	33.48	23.8	11.43	1.76	10.84	18.7
1988	35.97	26.28	8.62	1.5	8.89	19.34
1989	38.79	26.61	7.79	0.91	6.55	19.35
1990	38.91	25.88	7.75	1.06	6.35	20.05
1991	36.51	26.74	9.62	1.06	9.23	16.84
1992	39.35	27.77	9.78	0.89	7.85	14.36
1993	43.32	23.4	7.88	0.57	11.31	13.53

Appendix Table - 4								
Broad Composition of Health Services Expenditure								
Year	Amount				% Share			
	Pub. Hlth.	Hospitals	Alt. Sys.	Edn & Trg	Pub. Hlth.	Hospitals	Alt. Sys.	Edn & Trg
1980	428.55	350.52	24.61	89.9	47.96	39.23	2.75	10.06
1981	464.76	360.76	24.83	78.63	50.03	32.84	2.67	8.46
1982	726.21	357.54	24.2	78.24	61.22	30.14	2.04	6.6
1983	913.95	382	26.22	84.41	64.97	27.16	1.86	6
1984	780.56	405.82	26.6	82.89	60.26	31.32	2.03	6.4
1985	763.02	425.42	27.2	83.68	58.72	32.74	2.09	6.44
1986	691.72	400.38	31.82	105.62	56.26	32.56	2.59	8.59
1987	764.29	501.07	37.69	97.72	54.57	35.77	2.69	6.98
1988	887.68	536.4	44.44	124.67	55.72	33.67	2.79	7.83
1989	887.49	535.24	48.52	121.6	55.71	33.61	3.05	7.63
1990	923.16	539.73	53.54	130.72	56.05	32.77	3.25	7.94
1991	1080.56	565.88	55.97	153.55	58.23	30.49	3.02	8.27
1992	1097.77	573.12	66.84	177.01	57.33	29.93	3.49	9.24
1993	1170.81	618.65	72.73	180.37	57.32	30.29	3.56	8.83
All amounts are at 1980-81 prices, expressed as million rupees rounded off to 2 decimal places.								

Appendix Table -5								
Composition of Public Health Services Expenditure								
Year	Amount				% Share			
	PHC Instins.	PHC Services	Disease Control	Family Plg.	PHC Instns.	PHC Services	Disease Control	Family Plg.
1980	140.25	54.04	125.37	108.89	32.73	12.61	29.26	25.41
1981	156.34	61.13	122.35	124.38	33.76	13.15	26.32	26.76
1982	145.34	287.56	130.12	162.38	20.01	39.6	18.03	22.36
1983	251.82	314.12	154.12	193.89	27.55	34.37	16.86	21.21
1984	221.39	207.88	169.68	181.61	28.36	26.63	21.74	23.27
1985	232.08	118.68	193.8	218.46	30.42	15.55	25.4	28.63
1986	220.2	112.37	182.64	176.51	31.83	16.24	26.4	25.52
1987	242.73	93.58	226.44	201.55	31.76	12.24	29.63	26.37
1988	275.93	139.7	261.59	210.46	31.08	15.74	29.47	23.71
1989	282.16	142.05	246.42	216.86	31.79	16.01	27.77	24.44
1990	303.24	145.56	255.76	218.6	32.85	15.77	27.7	23.68
1991	327.73	241.98	262.22	248.63	30.33	22.39	24.27	23.01
1992	412.47	203.66	325.39	156.24	37.57	18.55	29.64	14.23
1993	438.3	237.74	337.05	157.72	37.44	20.31	28.79	13.47
All amounts are at 1980-81 prices, expressed as million rupees rounded off to 2 decimal places.								

Appendix Table - 6										
Disaggregates of Expenditure on PHC Institutions, PHC Services and Disease Control Programs										
Year	PHC Institutions			PHC Services			Disease Control Programs			
	PHC Network	Dispensaries	FDA & Vital Regn.	Mid day meal	Child & Mother	Health Edn & Others	Malaria	Leprosy	Tuberculosi	Others
1980	103.13	31.39	5.73	3.01	8.66	2.63	62.76	40.39	11.52	10.7
1981	121.62	30.05	5.23	7.36	8.59	2.51	62.24	38.42	11.88	9.8
1982	107.56	31.1	6.68	226	8.77	29.17	63.32	45.19	12.07	10.34
1983	163.88	33.2	54.71	271.33	10.04	3.29	78.22	49.29	13.19	13.41
1984	179.36	33.04	8.84	143.41	9.64	6.99	85.61	52.73	15.31	16.03
1985	191.08	37.31	7.96	1.68	23.38	1.42	91.41	55.76	18.17	28.46
1986	174.6	45.87	8.29	1.16	9.67	1.29	90.64	60.86	15.65	15.5
1987	186.6	46.66	10.26	0.28	13.68	1.31	128.56	66.09	18.11	13.67
1988	218.44	50.87	10.83	1.92	32.31	1.63	150.68	78.94	19.21	12.76
1989	219.39	52.78	11.91	0.74	35.12	1.72	142.62	71.22	19.05	13.52
1990	237.92	58.34	12.54	2.01	33.16	1.7	156.89	72.4	15.42	11.05
1991	256.1	62.97	13.3	1.14	38.6	1.67	152.79	72.72	16.29	20.42
1992	334.34	62.97	15.16	0.29	21.72	1.84	171.69	86.23	19.48	47.99
1993	354.2	67.77	16.34	0	22.57	2.03	178.94	93.1	20.98	44.04
All amounts are at 1980-81 prices, expressed as million rupees rounded off to 2 decimal places.										

Appendix Table - 7						
Expenditure on Secondary and Tertiary Level Hospitals: Amounts, % Share						
Year	Amount		% Share		% Share of total health services exp.	
	Secondary Level Hospitals	Tertitary Level (Teaching) Hospitals	Secondary Level Hospitals	Tertiary Level (Teaching) Hospitals	Secondary Level Hospitals	Tertiary Level (Teaching) Hospitals
1980	177.98	172.53	50.78	49.22	19.92	19.31
1981	186.04	174.72	51.57	48.43	20.03	18.81
1982	186.23	171.31	52.09	47.91	15.7	14.44
1983	196.09	185.91	51.33	48.67	13.94	13.22
1984	200.61	205.21	49.43	50.57	15.48	15.84
1985	200.45	224.97	47.12	52.88	15.43	17.31
1986	200.34	200.04	50.04	49.96	16.29	16.27
1987	251.64	249.42	50.22	49.78	17.96	17.81
1988	275.71	260.69	51.4	48.6	17.31	16.36
1989	283.94	251.3	53.05	46.95	17.83	15.78
1990	270.88	268.85	50.19	49.81	16.45	16.32
1991	291.34	274.55	51.48	48.52	15.7	14.79
1992	285.52	287.59	49.82	50.18	14.91	15.02
1993	290.25	328.4	46.92	53.08	14.21	16.02
All amounts are at 1980-81 prices, expressed as million rupees rounded off to 2 decimal places						

Appendix Table - 8						
Disaggregates of Expenditure on Education and Training for Health Services						
Year	Amount			% Share		
	Medical Edn.	Health Worker Trg.	Edn. For Alt. Sys.	Medical Edn.	Health worker Trg.	Edn. For Alt. Sys.
1980	65.04	18.49	6.37	72.35	20.57	7.09
1981	61.7	10.25	6.67	78.48	13.04	8.48
1982	62.53	9.37	6.35	79.92	11.97	8.11
1983	66.97	10.2	7.25	79.33	12.09	8.58
1984	65.68	10.27	6.94	79.24	12.39	8.37
1985	64.17	10.82	8.69	76.68	12.93	10.39
1986	85.53	11.44	8.65	80.98	10.83	8.19
1987	72.93	10.56	14.23	74.63	10.81	14.56
1988	99.86	13.68	11.13	80.1	10.97	8.93
1989	94.63	14.67	12.3	77.82	12.06	10.11
1990	101.65	16.49	12.59	77.76	12.61	9.63
1991	105.46	36.01	12.08	68.68	23.45	7.87
1992	123.32	39.33	14.36	69.67	22.22	8.11
1993	129.93	35.66	14.78	72.04	19.77	8.19
All amounts are at 1980-81 prices, expressed as million rupees rounded off to 2 decimal places.						