[redacted]

Report No. 15106-IN

STAFF APPRAISAL REPORT

INDIA

STATE HEALTH SYSTEMS DEVELOPMENT PROJECT II

FEBRUARY 20, 1996

South Asia Country Department II
(Bhutan, India,Nepal)
Population and Human Resoureces Operations Division

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
AP	Andhra Pradesh
ASCI	Administrative Staff College of India
BOD	Board of Directors (PHSC)
CHC	Community Health Center
CSSM	Child Survival & Safe Motherhood Project
DALY	Disability Adjusted Life Years
EMTC	Equipment Maintenance and Training Center
FW	Family Welfare
GDP	Gross Domestic Product
GOI	Government of India
GOK	Government of Karnataka
GOP	Government of Punjab
GOWB	Government of West Bengal
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
ICB	International Competitive Bidding
ICDS I	First Integrated Child Development Services Project
IDA	International Development Association
IEC	Information, Education and Communication
IPP 7	Seventh India Population Project
IPP 8	Eighth India Population Project
IPP 9	Ninth India Population Project
ISHA	Indian Society of Health Administrators
NCB	National Competitive Bidding
MCH	Maternal and Child Health
MIS	Management Information Systems
MOHFW	Ministry of Health and Family Welfare
NGO	Non-Governmental Organization
NHP	National Health Policy
NSS	National Sample Survey
PAR	Performance Audit Report
PCR	Project Completion Report
PGB	Project Governing Board
PHC	Primary Health Center
PHN	Population, Health and Nutrition
PHR	Population & Human Resources
PHSC	Punjab Health Systems Corporation
PWD	Public Works Department
SA	Social Assessment
SC	Scheduled Castes
SOE	Statement of Expenditures
ST	Scheduled Tribes
STD	Sexually Transmitted Disease
SUBC	Subcenter
TB	Tuberculosis
UIP	Universal Immunization Program
WDR	World Development Report
WHO	World Health Organization

Page No.

Page No.

TABLES

ANNEXES

Benefits: In addition to systemic benefits which would indirectly benefit the population of the states of Karnataka, Punjab and West Bengal, the project would directly benefit approximately 10 million out-patients and 0.7 million in-patients currently utilizing existing hospital services in the three states through the provision of better quality of health services. The project is expected to directly benefit an estimated 5.2 million incremental out-patients and an estimated 0.8 million incremental in-patients in the three states. A major benefit of the proposed project would be to assist the states of Karnataka, West Bengal and Punjab to put in place a coherent approach to establishing a cost-effective and sustainable health system. This would indirectly benefit the states' population as a whole. First, the broader sectoral policy reform envisaged under the project would increase the efficiency of the health sector by improving the environment in which the health sector operates. Second, there would be substantial cost savings in each state through the implementation of streamlined service norms and rationalization of service provision at different levels of the system. The technical and quality improvements, including operations and maintenance functions, at the institutional and health facility levels would enhance the effectiveness and efficiency of health care services by encouraging patients to seek timely care, resulting in higher cure rates at lower costs. Third, patients currently utilizing existing services would benefit from better quality services. Other qualitative benefits would be: the enhanced credibility and vital support to the primary health care system through the strengthening of first referral facilities; and externalities associated with improvements in waste disposal methods and surveillance systems for major communicable diseases. Finally, the proposed project would have a direct long-term impact on improving the health status of the people of each state and would thus contribute to increasing the earning potential of the poor.

Risks: The proposed project carries several risks that have affected, to varying degrees, PHN projects in India. These include poor procurement, late disbursement, untimely and inadequate flow of funds, poor maintenance of buildings and equipment, and inadequate attention to software and qualitative aspects. Most of these risks have been substantially reduced through careful project design. There are two additional risks associated with this project. Institutional. The capacity of existing institutions to undertake systemic improvements and to establish a more rational health delivery system has not been tested in India. Institutional strengthening, including strengthening of the management structure in all three states would be emphasized in the proposed project to address this risk. In Punjab, the newly established PHSC might initially have some start-up problems. The Government of Punjab, at the highest level, has made a commitment to enable the PHSC to effectively implement the Project. Financial. As with other projects in India, the overall financial status of the states is a risk. The position of public finances in Karnataka and recent trends in expenditure on health both suggest that the projects' incremental recurrent costs are sustainable. In Punjab, the necessary resources needed to sustain this commitment can be mobilized with a small increase in revenue. In West Bengal, some reorientation of its fiscal policies may be required to ensure sustainability. To help reduce the risk to financial sustainability, an on-going mechanism for monitoring overall state finances as well as the financial situation of the health sector would be undertaken through a comprehensive mid-term review. If necessary, additional measures to achieve financial sustainability of project benefits would be agreed upon based on that review.

INDIA

STATE HEALTH SYSTEMS DEVELOPMENT PROJECT II

CREDIT AND PROJECT SUMMARY

Borrower:	India, acting by its President
Beneficiaries:	States of Karnataka, Punjab, West Bengal and Punjab Health Systems Corporation (PHSC)
Amount:	IDA Credit SDR 235.5 million (US$350.0 million equivalent)
Poverty:	Program of Targeted Interventions (PTI). This project is classified as a PTI because a large proportion of project beneficiaries will be from the poor and vulnerable segments of the states' population. In Karnataka and West Bengal, about two-thirds of expected project beneficiaries would belong to the lowest 40% of the population in terms of income distribution. In Punjab, a relatively large share of the investment under the project would be targeted in the Upper Bari Doab and rural Southern Malwa regions where 30% and 25% respectively of the overall population live below the poverty line.
Terms:	IDA Standard, with 35 years maturity
On-Lending Terms:	The Government of India would make the proceeds of the Credit available to the States of Karnataka, Punjab and West Bengal under standard arrangements for development assistance to the States of India; Punjab would further transfer the funds to PHSC as a grant. GOI would assume foreign exchange risk.
Description:	The project would be implemented in Karnataka, Punjab and West Bengal. It would be an investment loan with policy reform in areas of resource allocation for the health sector, capacity development for sector analysis and management strengthening, enhance participation of the private and voluntary sectors in the delivery of health services, and implementation of user charges for those who can afford to pay. The project would finance investment related to three main activities: (i) Management Development and Institutional Strengthening: (a) improving the institutional framework for policy development; (b) strengthening the management and implementation capacity of institutions; and (c) developing a surveillance capacity for major communicable diseases and response capabilities; (ii) Improving Service Quality, Access and Effectiveness at the First Referral Level, through: (a) upgrading community, subdivisional and district hospitals; (b) upgrading the effectiveness of clinical and support services through streamlining of norms and provision of training, management information system, waste management and support services; and (c) improving the referral mechanism and strengthening linkages with the primary and tertiary health care levels; and (iii) Improving Access to Primary Health Care in Remote and Underdeveloped areas: (a) upgrading primary health centers in the Sunderban area of West Bengal; and (b) increasing access to primary care services among the SC/ST population in Karnataka.

Estimated Project Cost: [1]

Component	Local	Foreign	Total
	US$ Million		
Management Development & Institutional Strengthening	22.7	3.9	26.6
Improve Service Quality, Access and Effectiveness	237.7	70.5	308.2
Improve Access to Basic Health Services	17.6	6.7	24.3
TOTAL BASELINE COSTS	277.9	81.1	359.1
Physical Contingencies	25.6	8.0	33.6
Price Contingencies	18.5	5.4	24.0
TOTAL PROJECT COSTS	322.1	94.6	416.7

[1] Including taxes and duties estimated at US$22.3 million equivalent

Financing Plan:	Local	Foreign	Total
	US$ Million		
GOK	25.0	0.0	25.0
GOP	16.4	0.0	16.4
GOWB	25.3	0.0	25.3
IDA	255.4	94.6	350.0
Total	322.1	94.6	416.7

Estimated Disbursements:

	IDA Fiscal Year					
	US $ Million					
	FY97	FY98	FY99	FY2000	FY01	FY02
Annual	24.5	57.9	85.9	87.6	67.2	26.9
Cumulative	24.5	82.4	168.3	255.9	323.1	350.0

Economic Rate of Return: Not Applicable.

INDIA

STATE HEALTH SYSTEMS DEVELOPMENT PROJECT II

I. STATE/SECTOR BACKGROUND

A. Health Sector in India

1.1 **Introduction**. During the past two decades, India has developed a health care system in which the Government sector finances and manages a basic health care infrastructure, while the private sector predominantly provides ambulatory care services. Substantial gaps, however, remain in the effective delivery of health care, especially for the poorest sections of the population. Key health indicators show that the health status of India's population remains low. Communicable diseases continue to be major health problems; maternal mortality is high; acute respiratory and diarrheal diseases account for a large proportion of childhood mortality; and preventable mortality and morbidity, especially among the poor, exact a high toll. Moreover, with the increasing age profile of its population, India is moving into an epidemiological transition with the double burden of significant communicable diseases and increasing non-communicable diseases such as cardio-vascular diseases, cancers, diabetes and cataract blindness.

1.2 **Health Policy**. The Eighth Plan (1992-1997) identified health as one of the six priority areas, and determined that public investments in health are critical for human resource development and poverty alleviation in India. India's long term strategy for health sector development is enunciated in the National Health Policy (NHP) of 1983. Public policy for health has been based on an implicit assumption that primary health care is a basic right to which people should not be denied access due to inability to pay or for other socio-economic reasons. The NHP emphasizes the role of the state in providing basic health care, through the development of publicly run health facilities and draws attention to the strengthening of cooperation between the public and private sectors. The NHP gives high priority to the control of fertility, infectious diseases of public health importance and preventable causes of maternal and childhood mortality and morbidity. This is an appropriate health policy given India's burden of disease (see Annex 1). However, investment allocations do not fully reflect the priorities highlighted in the government's health policy and implementation of health programs continues to be weak.

1.3 **Health Care Financing**. In 1991, total health spending in India accounted for about 6 percent of GDP, or about US$13 per capita per year. Of this, Government contributions including center, states and municipalities account for about 20% of total health spending or 1.3% of GDP. Private health spending accounts for the remaining 80%. As a percentage of GDP, total health spending is higher than in other Asian countries which are at about India's level of per capita income. However, the percentage of Government to total health spending in India is lower than in comparable Asian countries. There is also a difference in the type of health services provided in the public and private sectors. Public provided services are the dominant source of preventive health care, such as immunization, ante-natal care, and infectious disease control services, in both rural and urban areas.

Private providers are dominant in the provision of ambulatory care for acute illnesses, or illnesses not requiring hospitalization. Moreover, private health spending is almost entirely from out-of-pocket sources, and health insurance is insignificant and limited in scope. This places a disproportionate burden on the poor.

1.4 The structure of Government's financing of the health sector is quite complex. Under the federal structure of the Indian Union, public provision of health services is primarily the responsibility of the state governments. The center, however, exercises its discretion to initiate and fully or partially finance centrally-financed schemes through a mechanism of specific grants to the states. The state governments retain responsibility for implementing such schemes. Public financing of health at the central and state levels is influenced by the planning process which takes place within the framework of central and state five-year plans. Within this structure of Government spending, states spend about 87%, the center about 10%, and municipalities account for the remaining 3%. A large component of public spending on health is directed towards tertiary care and medical education, and on public health interventions that are not the highest priority. The share of salaries in the health budget has continued to increase, and recent sector work indicates that it accounts for 70-80% of funds targeted to the health sector. As a result, the share of non-salary recurrent costs has fallen and operation and maintenance of health programs continue to suffer. As a result, the total amount of resources available for high priority, cost-effective health services is small.

1.5 The capacity of the health care system in India to effectively address the short- and long-term health care needs of the country remains limited. The country needs to be prepared to deal with the evolving burden of disease in the next decade and to put in place a sustainable health system which would combine elements of public health and clinical services in providing an adequate and necessary package of basic health services. This package of basic health care services would integrate primary health care with secondary level or first referral hospitals.[1] The emphasis on the first referral facilities at the state level in the proposed project is to complement the existing investments in primary care infrastructure and provide vital support to primary health care services and the rest of the health sector. In addition, a program of health sector policy reform needs to be initiated to provide the general framework for health sector development. These changes need to take place within the context of state health systems and will provide technical effectiveness and improved quality of health care.

B. The States of Karnataka, Punjab and West Bengal

1.6 The Governments of Karnataka, Punjab and West Bengal have expressed early commitment to undertake health reform. Based on several workshops, presentations and project proposals from about 10 states, these three states have been included in the proposed project since they are ahead of the others in developing a package of policy reform. In addition, West Bengal has been chosen because of the high level of poverty in large areas of the state and Punjab because it can set an example for other states in areas of policy reform. These states also provide an interesting geographical, cultural and

[1] The terms first referral and secondary level hospitals are used synonymously in this report. They denote community/rural hospitals that have a bed strength of about 30-50 beds; area/taluka hospitals that have about 75-100 beds; sub-divisional/State General hospitals that have about 100-350 beds; and district hospitals that have about 300-550 beds. The level of services offered increase from community to area to sub-divisional to districts hospitals.

ethnic diversity. Furthermore, the administrative capacity to undertake a project of this type is relatively strong in these states. The reason for combining the three states under one project is that they will share common elements that are key to the functioning of health systems, such as service norms, training, referral systems, surveillance systems for major communicable diseases, equipment management systems, quality assurance and information, education and communication (IEC) networks. The implementation of the project in each state would be mutually beneficial for lesson learning and sharing of experience with respect to these key elements. A brief description of the health status and burden of disease in Karnataka, West Bengal and Punjab, which have a combined population of about 140 million people (1995), follows.

1.7 **Health Status and Epidemiology in the Three States: Karnataka.** The state of Karnataka, covering an area of 191,791 square kilometers, is located in the southwest part of India. The population in 1995 was about 48 million, with urban areas accounting for about 31 percent of the population. Both in terms of area and population, Karnataka ranks eighth among the states of India. The state is divided into twenty districts which are grouped into four Revenue Divisions with headquarters at Bangalore, Belgaum, Gulbarga and Mysore. Scheduled Castes (SC) and Scheduled Tribes (ST) formed 16.4 and 4.0 percent respectively of the population. According to the 1991 census, the literacy rate was 67 percent among males and 44 percent among females, which is marginally higher than the country average. In 1991, the last year for which consistent estimates across states are available, the per capita income was US$329 equivalent, compared to the per capita average for India of US$330. 32% of the population is below the poverty line compared to about 33% for India as a whole.

1.8 Karnataka is performing slightly better than the national average in terms of health status and epidemiological profile. In Karnataka, the birth rate of 26.3, death rate of 8 and infant mortality rate of 67 per thousand live births compares to the national averages of 29.3, 9.8 and 80 per thousand live births respectively. In the last decade, the number of patients admitted to government hospitals has increased by 60 percent, putting a great deal of pressure on hospital facilities. State level epidemiological data indicate that injury and poisoning (19.9%) are among the leading causes of morbidity, followed by infectious and parasitic diseases (16.3%); diseases of the respiratory system (14.5%); and complications of pregnancy and childbirth (11.1%). During the period 1982-92, the increase in in-patients has been greatest for the treatment of infectious diseases, neoplasm, endocrine, nutritional and metabolic diseases; immunity disorders; complications due to pregnancy and puerperium; and injuries and poisoning. The burden of disease in Karnataka reflects the initial phase of the health transition taking place during the late 80's and early 90's. On the one hand, selected health indicators, such as infant mortality, neonatal and post natal mortality and stillbirth rates, have deteriorated; on the other hand, injuries and trauma are increasing.

1.9 **West Bengal.** West Bengal, situated in eastern India, is bound by Bangladesh, Nepal and Bhutan, and covers an area of about 88,700 square kilometers. With a total population of 72 million in 1995, it is the most densely populated state in India (810 per square kilometer). 39% of the population is below 15 years of age, and about 28% is urban. The large rural population is mainly agricultural, with a predominance of small and marginal farmers. It is estimated that more than 30% of the rural population lives below the poverty line. ST and SC constitute 5.6% and 23.6% of the population, respectively. The literacy rate is about 58%, with a large urban-rural differential. The state is divided

into 17 districts, with 344 community blocks. In 1991, the per capita income was US$294 equivalent, with 28% of the population below the poverty line.

1.10 In terms of selected health indicators, West Bengal is better off than the average Indian state, with a birth rate of 25.6, death rate of 7.3 and infant mortality rate of 58 per thousand live births. A recent study indicated the following burden of disease: obstetric and gynecological (23%); gastro-intestinal diseases (12%); cardiovascular diseases (9%); pulmonary diseases (10%); muskuloskeletal diseases (9%); accidents and injury (9%); urinary diseases (8%); skin diseases (7%) and neonatal diseases (6%). More than 50% of the burden of disease is attributable to maternal and child health and communicable diseases, indicating that the health transition has not yet begun in West Bengal.

1.11 **Punjab**. The state of Punjab is situated in the north-western part of India and covers an area of 131,015 square kilometers, with a population of 21.9 million (1995). 29% of the population lives in urban areas. The state is divided into 14 districts, grouped into three regional divisions, with headquarters at Firozpur, Patiala and Jalandhar. According to the 1991 census, the average literacy rate for the state is about 59%, and the sex ratio is 882 females per thousand males compared to the national average of 927 females per thousand males. In 1991, the per capita income was US$554 equivalent, and only 12% of the state's population was below the poverty line. However, as in other states, there is substantial regional variation in per capita income. The Upper Bari Doab area, in the northwest corner of the state, has 30% of its population below the poverty line; rural poverty is most pervasive in the Upper Bari Doab area, and Southern Malwa, where 40% and 25%, respectively, are below the poverty line.

1.12 Punjab has a birth rate of 27.7, a death rate of 7.8 and an infant mortality rate of 53 per thousand live births. The 1992 Survey of Cause of Death (rural) shows that fevers resulting from infective conditions (24%) were the leading cause of death followed by circulatory system disorders (17%), degenerative conditions (17%), trauma (11%) and respiratory disorders (11%). In terms of outpatients seen at medical institutions, the Annual Dispensary Report also shows that 76 percent of the disease burden is due to non-communicable diseases; acute respiratory infection is the other major disease burden at 17 percent. These figures, when compared to other Indian states, reflect the health transition underway in Punjab.

1.13 **Organization of the Public Health Care System**. The public health system in Karnataka, Punjab and West Bengal consists of three tiers. At the bottom are primary health care facilities where basic health services are provided, with emphasis on preventive and promotive aspects such as family planning, maternal and child health (MCH), treatment of minor ailments, malarial treatment and spraying, sanitation, and public health education. This level includes, in Karnataka, 1,875 Primary Health Centers (PHCs) and Primary Health Units (PHUs); in Punjab, 1,462 subcenters, 484 PHCs and 104 Community Health Centers (CHCs); in West Bengal, 914 PHCs and 249 Block PHCs. The management of this level of health care in West Bengal and Punjab is under the Directorate of Health Services. In Karnataka, however, family planning and MCH services are under the Directorate of Family Welfare.

1.14 In the middle are the first referral hospitals or secondary level hospitals, consisting of hospitals of various bed strengths, ranging generally between 30 and 550 beds, at community, area, subdivisional and district levels. These first referral hospitals provide in-patient and out-patient care

with diagnostic and treatment facilities not available at the primary level. This level includes, in Karnataka, 239 community, sub-divisional and district hospitals (a total of 14,858 beds); in Punjab, 217 community, sub-divisional and district hospitals (a total of 6,745 beds); and in West Bengal, 175 community, sub-divisional, state general and district hospitals (a total of 19,964 beds). This level of health care is managed by the Directorate of Health Services. The provision of services at the first referral level is inadequate in all three states and this tier does not provide the critical support needed at the primary level.

1.15 At the top of the health structure are the tertiary hospitals, including teaching hospitals, which are staffed and equipped to provide more specialized treatments and generally have a capacity exceeding 750 beds, with some variations across states. This level includes, in Karnataka, 17 teaching hospitals; in Punjab, 3 tertiary hospitals; and in West Bengal, 13 teaching hospitals. In addition, each state has other specialized hospitals such as TB hospitals, mental hospitals, infectious disease hospitals and leprosy hospitals. They are managed by the Directorate of Medical Education. In addition to the three major Directorates mentioned above, there are other smaller Directorates within the Department of Health and Family Welfare and these vary across states. In Karnataka, for example, there is also a Directorate of Indian Systems of Medicine and Homeopathy, and the Drug Controller.

1.16 **Utilization of Health Services**. The national sample survey (NSS) utilization data from the 42nd round show that an overwhelming majority of households utilized the allopathic system of medicine both for hospitalization (98%) and ambulatory care (96%). The preference for the allopathic system was universal and not influenced by household characteristics such as income, social class or literacy. Public hospitals appear to be more often utilized both in rural and urban areas. For example, in West Bengal, 77% and 73% of hospitalized cases utilized public hospitals in rural and urban areas, respectively. About 8% utilized private hospitals and nursing homes in rural areas, and 24% in urban areas. Despite some regional and rural/urban variations, occupancy rates at first referral hospitals are close to 100% in West Bengal and between 60-70% in Karnataka and Punjab. Among ST households, utilization of public hospitals was much lower; and ST households choose private hospitals much less compared to other household groups. About 95% of government services were free (although there were indirect costs to the individual) compared to only 7% of services in the private sector. Of the kinds of ailments treated by the private sector, preliminary analysis suggest that 35% of cases treated were related to child birth, 30-40% were fevers and injuries and 20-30% were for surgery.

1.17 Beneficiary assessment studies show that Government hospitals, especially first referral hospitals, are utilized predominantly by lower income groups. For example, in Karnataka, over 45% of the patients have an annual income below Rs. 15,000 (close to the official poverty line) and over 90% of the patients have an annual income below the taxable level of Rs. 50,000. Moreover, Government facilities are used mainly for treatment of communicable diseases which affect the poor more intensively. Those who can afford to pay usually prefer to use private hospitals since the quality of services available at Government hospitals is poor, as is the availability of staff, drugs and essential supplies (see Annex 14).

1.18 **Public Health Expenditure**. The public health care budget was about Rs. 4,872 million in Karnataka (FY95), Rs. 5,570 million in West Bengal (FY96) and Rs. 2,202 million in Punjab (FY94). In FY94, the share of health and family welfare in the total revenue budget in each state was about 6.4%, 5.3% and 7.2% respectively. Since FY90, the share of health in the revenue budget has declined

in Punjab (from 6.6% to 5.3%) and West Bengal (from 8.4% to 7.2%) and has increased marginally in Karnataka (from 6.1% to 6.4%). Annual public health expenditure as a percentage of the state's Net Domestic Product is only 1.3% in Karnataka, 0.9% in Punjab and 1.2% in West Bengal (see Annex 3).

1.19 In FY94, about 40% of public health expenditures in Karnataka and West Bengal and about 60% in Punjab was allocated to the provision of primary health care services, the largest component of which included expenditures on family welfare and programs for the prevention and eradication of communicable diseases. Analysis of the composition of public expenditures on health during the last five years shows that the budgetary emphasis on primary health care has been maintained.

1.20 Allocation to public hospitals (secondary and tertiary) in Karnataka in FY95 was about 33% of the health budget; in West Bengal, it was 37%; and in Punjab it was about 41%. This analysis of subsectoral allocations highlights some important issues. First, the allocation of expenditures for hospital services is relatively low in the states, compared to other low income countries. Only 4 countries in the 29 countries reviewed by Barnum and Kutzin (1993) spent less than 40% of their health budget on hospital services. Second, allocations to hospital services in the states, especially at the first referral level, have been adversely affected even in years when the overall health budget has grown. Third, resource allocations within the hospital sector have been unfavorable to sub-divisional and rural/community hospitals.

1.21 The non-salary recurrent cost budget has been shrinking and the share of salaries of staff have increased in recent years (see Annex 3). For example, in West Bengal, salaries and wages accounted for about 75% of total expenditures at urban hospitals, and materials and supplies accounted for less than 10%. With a rising share of salaries and total allocations remaining constant, the norms for expenditure on drugs, supplies and other consumables have been held constant in nominal terms. Since price inflation for these commodities have been greater than average, real expenditures on critical inputs other than personnel has declined substantially in recent years.

C. Health Sector Issues in Karnataka, Punjab and West Bengal

1.22 Recent sector work on "Policy and Finance Strategies for Strengthening Primary Health Care Services" (Report No. 13042-IN, May 1995) recommended that the financing of health care in India needs to be increasingly viewed within the context of structural adjustment and stabilization policies since the latter are likely to affect government health spending at the central and state levels. Since more than 80% of public spending on health is accounted for by the state budgets, and since the states are primarily responsible for implementing various health programs, financing and policy reform to increase efficiency and improve effectiveness needs to be targeted at the state level. However, the need and the challenge for each state can be quite different given the burden of disease, existing public health programs, past pattern of public investment in the health sector, the importance and the level of involvement of the private sector, the level of poverty etc. In spite of these differences, there are some common themes at the state level which emerge as being of equal concern for all states, and which need to be addressed.

1.23 **Budgetary/Resource Allocation Issues**. Public resources allocated to the health sector in Karnataka, Punjab and West Bengal from the national, state and municipality budgets are inadequate to meet basic health care needs and compare unfavorably to several Asian countries with similar levels

of per capita income. The main problems at the state level, where more than 80% of public funds come from the state budgets, are: (i) the relatively small allocation within the state budget to the health sector; (ii) the disproportionately high contribution to the tertiary level of health care at the expense of first referral facilities and preventive and promotive care services; (iii) the lack of adequate allocations for operations and maintenance of investments in the health sector, in particular the size of allocations for non-salary recurrent expenditures; and (iv) low level of revenue collection from user charges.

1.24 **Institutional Issues**. Institutional weaknesses in the health system result in a low level of efficiency. The referral system is largely ineffective; clinical skills at first referral hospitals are below standard; and technical support for the primary level of care is weak. Structure of Service Delivery: The mechanism for delivering public health services at the state level faces serious problems related to the overlapping functions among the various tiers of health care provision. Services provided at different tiers of the system are often duplicated, and there is no clear delineation of services at each type of facility. Since the first referral hospitals are performing inadequately, tertiary level facilities are over-burdened. Moreover, the lower tier institutions such as PHCs are underutilized due to lack of technical support (such as treatment and diagnosis) from first referral level institutions. Referral System: Institutional and technical linkages for referral between different tiers are weak. It is estimated that, with the streamlining of service norms and adequate provision of inputs, a third of all cases which are currently treated at tertiary facilities could be adequately treated, and at lower costs, at first referral facilities. Surveillance Development and Response Capability: The ability of the public health system to cope with unforeseen health emergencies is limited due to weak surveillance and rapid response capability. For instance, the plague scare in September-October 1994 exposed the inability of the public health system to respond to such events.

1.25 **Management and Planning Issues**. Management of facilities at the primary and first referral levels is inefficient, especially with regard to the integration of administrative and financial responsibilities. There are few incentives for hospitals to improve their management system. The capacity to undertake health planning, including the ability to undertake the monitoring of the evolving epidemiological profile and the burden of disease, analysis of cost-effective means of achieving the best use of limited resources, analysis of the medical manpower situation and monitoring of private health sector development at the state level, is inadequate.

1.26 **Technical and Quality Issues**. Health facilities at the primary and first referral hospitals in the states continue to face operational deficiencies due to general and technical inefficiencies. Streamlined clinical and support service norms are not applied at first referral hospitals, as a result of which lower tiers of the health system remain underutilized. Support services and infrastructure at secondary hospitals are inadequate to deliver quality care. Shortages of diagnostic facilities, including equipment for performing laboratory procedures, are common and adversely affect day-to-day functioning. Communications networks and transport facilities are inadequate to meet health care demand. Shortages of trained personnel in key areas affect quality of services; and inadequate repair and maintenance services for machinery and equipment leads to malfunction and frequent breakdowns. Furthermore, the quality of services is also affected by the absenteeism of doctors and other medical staff in less developed areas of the state.

1.27 **Access to Health Services**. According to hospital data, the proportion of hospital users belonging to SC/ST groups is commensurate with their proportion in the general population. However, considering the poor socio-economic condition of these groups, and their low nutritional level, the morbidity and mortality in this population is greater and warrants a higher utilization of secondary hospital services. An additional issue is the low utilization of health services by women. In Karnataka, for example, the NSS survey indicates that the sex ratio among hospitalized cases is 786 females for 1,000 males, whereas the sex ratio in the population is 960 females per 1,000 males. There is a need to enhance the utilization of hospital services by women and SC/ST groups by strengthening links between primary and secondary levels of care through an effective referral mechanism and reducing the physical and psychological distances traveled. Disparities also exist between the urban and rural parts of the states with respect to access to health facilities and service quality. The urban based secondary hospitals tend to be overcrowded, especially the outpatient facilities, and operate at near full capacity, whereas some of the remote rural facilities remain underutilized because they are unable to provide even basic services.

1.28 **Role of the Private Sector and NGOs**. Detailed information on the scope, quality and size of the private sector is not easily available. Recent sector work found that the private sector plays a major role in the provision and financing of health care in India. There has been a significant growth of private sector facilities in recent years, especially in Punjab and Karnataka. In Punjab, 40% of all hospital beds are in the private sector; in Karnataka, about 33% of all hospital beds are in the private sector; and in West Bengal, private hospitals and nursing homes account for about 23% of hospital beds in the state. In all three states, about 80% of all private hospital beds are located in urban areas. The private sector comprises a wide range of health providers, ranging from the household doctors in the villages to the corporate sector in the cities and charitable hospitals and dispensaries. However, many of these providers are unqualified, licensing is weak or non-existent, and quality is varied. Lack of regulations and effective legal remedies contributes to inappropriate practices. Government's ability to monitor, regulate, register and certify private care providers could be strengthened and there still remains scope for expanding the role of the private sector.

1.29 The role and scope of NGOs in delivering health care services have so far been limited. NGOs have a comparative advantage in improving access to health services for some disadvantaged groups in remote and rural areas. Opportunities remain for effective NGO participation in service delivery as well as behavior changing information, education and communication (IEC) activities.

D. Lessons from Experience

1.30 This is the second project in India that involves the health system at the state level. It is more broadly based than the on-going or completed population, health and nutrition (PHN) projects in India. Even so, the experience of social sector projects in India is varied and extensive enough to provide some important lessons for the preparation and implementation of this project.

1.31 There are five completed PHN projects in India for which Project Completion Reports (PCRs) or Performance Audit Reports (PARs) are available.[2] These are the First, Second, Third and Fourth Population projects and the First Tamil Nadu Integrated Nutrition project. The Operations Evaluation Department has also undertaken an Impact Evaluation Report of the Tamil Nadu Integrated Nutrition project. Overall, the projects have met an important part of their development objectives. Population I and II met most of their aims, but did not have any systemic impact on the Family Welfare program. Population III had significant outcomes in Kerala but not in Karnataka. Population IV appears to have contributed to very significant improvements in contraceptive prevalence and reduction in infant mortality. The Tamil Nadu Nutrition project is well-documented as having a major impact on improving the nutritional status of young children.

1.32 There are currently fourteen on-going PHN projects in India. The list below shows eight that are now on-going in Karnataka, Punjab and West Bengal:

- Health sector: National AIDS Control, National Leprosy Elimination and Cataract Blindness projects;
- Family Welfare (FW) sector: Population VII, Population VIII, Population IX and Child Survival and the Safe Motherhood (CSSM) projects; and
- Nutrition sector: First Integrated Child Development Scheme (ICDS I) project.

1.33 Despite many positive outcomes, the completed and ongoing projects have suffered to varying degrees from a variety of implementation problems. These have included: late start-up, poor procurement, slow disbursement, frequent management turnover, untimely and inadequate flow of funds, poor maintenance of buildings and equipment, and inadequate attention to software and qualitative aspects.

1.34 The design of the proposed project would take account of the concerns and problem areas identified above as shown in Table 1.1.

---

[2] India: PCR - First Population Project (Cr. 312-IN), May 19, 1981; PPAR No. 3748, December 31, 1981.
India: PCR - Second Population Project (Cr. 981-IN), June 20, 1989; PPAR No. 8896, June 29, 1990.
India: PCR - Tamil Nadu Integrated Nutrition Project (Cr. 1003-IN), November 26, 1989; Impact Evaluation Report No. 13783, December 12, 1994.
India: PCR - Third Population Project (Cr. 1426-IN), Report No. 12278, August 1, 1993.
India: PCR - Fourth Population Project (Cr.1623), Report No. 13785, December 12, 1994.

Table 1.1: Lessons Applied From IDA Experience in PHN Lending to the Proposed Project

Lessons	Corresponding Action to be Taken	Reference
1. Inadequate Attention to Management Aspects	At the early state of implementation the following actions would be taken: enhancement of management and supervision authority for construction and maintenance of operational activities by the implementing agencies; adequate staffing of key project management personnel; adequate staffing arrangements at district, sub-divisional and community hospitals; strengthening of management procedures. In addition, a mid-term review of the management systems would be undertaken.	paras. 2.21, 2.22, 2.23, 2.28, 2.29, 2.30, 3.24, 3.25, 3.26, 3.27 Annex 6
2. Slowness in Implementation and Weak Supervision	Strengthen implementation capacity; enhancement of implementation capacity of the engineering wing of the implementing agencies; detailed implementation plan in place; regular field supervision by local consultants included in Supervision Plan.	para. 2.30 Annexes 6, 18, 20
3. Poor Maintenance of Buildings and Equipment	The state Governments will provide adequate resources during project period for operations and maintenance services; capacity for equipment maintenance and training to be enhanced.	para. 2.10, 2.30
4. Untimely and Inadequate Flow of Funds to Project	Assurance provided by the state Governments that annual review of project expenditures and resource requirements will be carried out with IDA in order to ensure timely flow of funds; assurance provided by GOI that it would release about three months of project expenditure in advance to the state Governments.	paras. 3.21, 3.42
5. Poor Procurement	Procurement arrangements for works and services in advanced state of preparation; lists of hospitals prepared, use of standard bidding documents; first phase of construction plan completed; equipment lists prepared and specification lists discussed with IDA.	paras. 3.31, 3.32, 3.34 Annexes 16, 18
6. Inadequate Attention to Qualitative Aspects	Staffing and technical norms at district, sub-divisional and community hospitals agreed upon; referral system and linkages with primary care services to be established according to agreed norms; clinical training needs developed; management training needs developed; quality assurance program developed collaboratively with clinicians and practitioners from around the state; performance indicators developed and agreed with borrower.	paras. 2.27, 2.31, 2.32, 3.35, 3.36 Annexes 7, 8, 9, 19

1.35 In addition, international experience has also been considered in the design and scope of the project. The World Development Report (1993) on Investing in Health suggested that a broad sectoral approach within a supportive policy environment produces significant positive results and benefits. It also suggested that a limited package of public health measures and essential clinical interventions is a top priority for government finance. On the components of the public health package, the list includes: (i) the expanded program on immunization, including micronutrient supplementation; (ii) school health programs to treat worm infection, micronutrient deficiencies and health education; (iii) programs to increase public knowledge about family planning, health and nutrition; (iv) programs to reduce consumption of tobacco, alcohol and other drugs; and (v) AIDS prevention program with a strong STD component. On the components of the essential clinical services the list includes: (i) prenatal and delivery care; (ii) family planning services (these two components together constitute a Safe Motherhood Program); (iii) management of the sick child; (iv) treatment of TB; (v) case management of STDs; and (vi) treatment of minor infection and trauma, otherwise known as limited care. This project, in recognizing the specific administrative, burden of disease and socio-technical issues in India, would provide a number of the services listed above. It would also establish the institutional structure that can lead to the provision of some of the other services in the future.

E. Linkages With Other PHN Projects

1.36 The proposed project would complement and consolidate investments made by on-going projects by providing policy and implementation coordination with other health and FW projects in the state. The need for this has also emerged as an important lesson of experience. For example, the strengthening of the first level referral for obstetrics and child care in this project through the provision of essential clinical and diagnostic services would complement the primary level of services being provided under Population VII, Population VIII, Population IX and CSSM projects. In addition, the actions of these on-going projects with regard to initiating a referral system from the community to the community hospital level, providing equipment at the first level referral for obstetrics units and defining the facilities needed for emergency obstetrics care will be further strengthened under this project by putting in place a referral system that will be able to link up preventive and curative aspects of health services. These complementary curative actions, which are somewhat higher level interventions than the preventive and promotive primary care services provided by on-going projects, will improve the health status of women and children and reduce fertility. Similarly, this project will complement the AIDS Control and Leprosy Elimination projects by enhancing the physical facilities located in the states that are providing services under the national programs. The same is true of the complementarity with the Cataract Blindness project. Where the blindness wards are located in the district hospitals in the states, the project will upgrade the clinical and diagnostic activities of those facilities.

Table 1.2: Linkages with Other Projects in Karnataka, West Bengal and Punjab[3]

Name of Project	Primary Health Care Objectives	Linkages with State Health Systems Development Project II
Karnataka: Population V Population IX, CSSM West Bengal: Population VIII, CSSM Punjab: Population VII, CSSM	Enhance service delivery for FW, and strengthen management at the district and block level, and slum areas; support Child Survival program; enhance Safe Motherhood Program.	Child Health: Children identified by primary care services as suffering from severe stages of diarrheal disease, acute respiratory infection and nutritional disorders will be referred to first referral hospitals for appropriate treatment. Maternal Health: The CSSM program has identified by name the First Referral Units (FRUs) for the states, most of which are under first referral management. Mothers identified as having life threatening complications of pregnancy and child birth will be referred to these FRUs for appropriate treatment. Technical supervision and training: First referral will improve the quality of care at the primary level through: (a) visits to PHCs by Specialists from the hospitals to conduct clinics for patients who need more skilled care; and (b) training at first referral hospitals for upgrading clinical and technical skills for PHC and SUBC staff; provide on-going training for medical and paramedical staff from PHCs and SUBCs.
Karnataka, West Bengal, Punjab: National AIDS Control	Involve states in program development.	AIDS Cell and Empowered Committee promote coordination between AIDS Program and first referral hospitals. The MIS capability and patient statistics gathered by first referral hospitals are of vital use to the AIDS project.
	Monitor epidemic; Screen blood; logistical support.	Surveillance sites or HIV testing facilities located in first referral hospitals to facilitate monitoring of the AIDS epidemic. HIV screening to be done within blood banks of first referral hospitals: the AIDS project provides the kits, training and procedure; first referral hospitals provide infrastructure, staffing and support services. First referral facilities provide essential logistical support for storage of equipment, medicines, medical supplies and waste management.
	Raise public awareness; develop clinical management skills in AIDS and STD control.	The IEC component of the AIDS project targets staff of first referral hospitals for disseminating information. Selected staff of first referral to be trained by the AIDS project to provide counseling and medical needs of AIDS patients.
Karnataka, West Bengal: National Leprosy Eradication	Multidrug therapy; disability care and prevention.	The health infrastructure of first referral is a channel of treatment and drug delivery. The staff and hardware provided by the Leprosy project will function within first referral infrastructure, providing physiotherapy facilities, operation theaters (OT) and lab facilities.
	Logistics and MIS.	First referral facilities provide storage and support services for the Leprosy project. MIS and statistical support are also provided.
Karnataka, West Bengal: Blindness Control Program with Danida Assistance	Expand service delivery and institutional development.	The Blindness Control Programme, through the District Blindness Control Societies, is financing support services for cataract blindness in district hospitals. The Project will provide: support staff who will receive specialized training under the Blindness programme, logistical support and other facilities. The referral system will

[3] This project will provide additional primary care services not included in the on-going Population & Human Resources Division portfolio.

Table 1.2 *(continued)*

Name of Project	Primary Health Care Objectives	Linkages with State Health Systems Development Project II
		complement and facilitate the referral of blind patients to district hospitals for specialist care.
Karnataka: KfW German assisted Secondary Level Services Project	Expand and upgrade of existing secondary level health care facilities in the four backward districts of Gulbarga division.	The component will be complementary to the KfW Project and will contribute to reducing regional imbalances, which is the main objective of the project. This project will also supplement KfW investment by providing training of staff, waste management system, referral system, quality assurance, MIS and IEC activities and access to basic health facilities.
West Bengal: National Tuberculosis Control Program	Detect TB amongst chest symptomatics; vaccinate new born and infants with B.C.G.; sputum diagnosis and intensive supervised treatment of sputum positive cases	Pathological laboratory services will be strengthened under the project with both manpower and logistical support. These laboratories will play a vital role in detection of TB by sputum microscopy and help in establishing a treatment schedule.

F. IDA Strategy and Rationale for Involvement

1.37 The World Bank Group's Country Assistance Strategy for India (May 19, 1995; Report No. 14509-IN) supports GOI's efforts to provide an enabling environment for broad-based, efficient private sector-led growth while accelerating the development of human resources. In the human resource sectors, the strategy is to enhance access to basic services for the poor and to support well-targeted safety net programs that protect the most vulnerable groups in Indian society. As part of this approach, the Bank's strategy in the health sector is to assist India to reduce the level of mortality, morbidity and disability through a two-pronged approach. The first is to reduce the burden of the most significant diseases through the support of priority programs; the second is to strengthen the performance of state health systems to deal with the evolving burden of disease by providing more efficient and effective health care. The basis of this strategy for the health sector in India is rooted in an on-going dialogue between GOI and IDA, and is reflected in recent sector work, "India: Policy and Finance Strategies for Strengthening Primary Health Care Services", May 1995.

1.38 IDA investment in the proposed project is justified for the following reasons. First, the project is consistent with IDA's strategy of strengthening state health systems by optimizing resource use and avoiding duplication and wastage. Second, the project would strengthen the states' capacity to implement priority health programs and provide basic health care in rural areas. Third, the project would consolidate the investments made by a number of other IDA supported projects in the PHN sector, and add incremental value to the health care system at the state level. Fourth, the project is in line with the overall IDA strategy of poverty reduction in India through its focus on underprivileged people, especially women, Scheduled Castes and Scheduled Tribes. Finally, the proposed project would assist Karnataka, Punjab and West Bengal to establish the foundation for a sustainable and coherent approach to health care.

II. THE PROJECT

A. Project Approach

2.1 The proposed project would be an investment operation with substantial policy content. It will assist the Governments of Karnataka, Punjab and West Bengal to put in place a first referral health system which would provide vital support and lend credibility to primary health care services and the rest of the health sector. The proposed project would be an important step in the development of a coherent, efficient and sustainable health system. The project would also strengthen the organizational structure of preventive and curative aspects of health care by integrating primary health care services with first referral hospitals. An adequate and necessary package of health services would be implemented in each state, based on service norms developed, and consistent with the burden of disease. Focusing on these key elements would prepare the states to better address priority issues in the health sector over the next ten years.

B. Project Objectives

2.2 The objectives of the proposed project would be to assist the Governments of Karnataka, Punjab and West Bengal to: (i) improve efficiency in the allocation and use of health resources through policy and institutional development; and (ii) improve the performance of the health care system through improvements in the quality, effectiveness and coverage of health services at the first referral level and selective coverage at the primary level to better serve the neediest sections of society. The ultimate goal of the project would be to improve the health status of the people, especially the poor, by reducing mortality, morbidity and disability. The achievement of the objectives will be evaluated on the basis of timely implementation of the policy reform spelled out in the Letters of Health Sector Development Program of the three state Governments in Annex 2.

2.3 The set of development indicators include the following in each state: (a) an increase in each year in the share of resources for the primary and secondary levels of health care in the total resources (plan and non-plan) allocated to the health sector, until the year 2002; (b) adequate and timely budget allocations for recurrent expenditures at the first referral level, in order to meet the resource requirements under the project's annual operating plan; (c) adequate budget allocations for provision of drugs and essential supplies; and (d) implementation of a user charge policy. The implementation of these policy reforms will be monitored during supervision through the review of relevant financial and budgetary documents of the Government, and field visits. These would provide monitorable evidence of policy actions in each state and their sustained adherence to key elements of the policy letter.

2.4 In addition, the achievement of the development objectives would be evaluated on the basis of activity and efficiency indicators as well as quality, access and effectiveness indicators as shown in Annex 19 on Performance Indicators. These include a number of indicators to monitor interim progress towards the achievement of development objectives, summarized below.

2.5 Activity indicators including turnover rate, bed occupancy and average length of stay, which are derived from bed occupancy, cumulative inpatient days and admissions during a given period of time, would be measured against the baseline. Efficiency indicators including the following would be measured against a

baseline: clinical services, such as number of major surgeries and deliveries and their percentages to admissions during a given time period; diagnostic services, such as number of imaging and electro-medical tests and their percentages to admissions during a given time period; non-clinical services such as post-mortems, percentage of post-operative case fatalities and percentage of infection acquired at the hospital; and emergency service index measures such as emergency outpatient and entry ratios. These efficiency measures would be evaluated against the baseline, and compared with the best performing facilities and against comparable international standards.

2.6 Quality, access and effectiveness indicators including the following would be measured: staffing, equipment and drug norms met at each facility; inpatient and outpatient waiting time; patient satisfaction; upgradation of clinical, management and equipment maintenance skills; awareness among target group of services offered; awareness among doctors of how the referral system is expected to function; and funds recovered from user charges. Some of these would be measured against the baseline, while others will be measured against the norms that were developed during project preparation.

C. Project Content

I. The Reform Program

2.7 The Governments of Karnataka, Punjab and West Bengal have made a commitment to improving their health system and establishing the necessary framework to achieve project objectives. All three states have taken action to strengthen the implementation and supervision capacity of the implementing agency. Punjab has established the Punjab Health Systems Corporation (PHSC) which was passed as an Ordinance on October 20, 1995. The three states have developed streamlined service norms at district, sub-divisional and community hospitals that would result in substantial increases in efficiency and effectiveness. The proposed project would build upon the institutional and policy changes initiated by the states of Karnataka, Punjab and West Bengal. All three state Governments have emphasized their commitment to a policy package of health sector reform reflecting key sectoral development issues for the primary and first referral levels of health care. Letters of Health Sector Development Program provided by the three states are attached in Annex 2. Details of the Reform Program are provided below.

(1) Increase Financing and Improve Resource Allocation for the Health Sector by (a) ensuring adequate budgetary allocations to the health sector; (b) increasing the share of health sector resources to the primary and secondary levels of health care; and (c) safeguarding the operations and maintenance component of the health budget to ensure adequate supplies of drugs and essential medical materials and maintenance of equipment and infrastructure;

(2) Strengthen the Capacity of the Implementing Agency in Sector Analysis and Management by (a) setting up a Strategic Planning Cell under the Health Secretary to undertake analyses of health sector issues; and (b) strengthening the implementing agency's role and provide it with authority to manage essential operational activities including civil works construction and maintenance activities;

(3) Enhance the Role of the Private and Voluntary Sectors in the Delivery and Management of Health Services by (a) contracting-out selected services; and (b) promoting linkages in health care delivery with the private and voluntary sectors; and

(4) Implement a User Charge Policy by (a) implementing existing user charges more rigorously; (b) retaining and using revenue collected; and (c) exempting the poor from user charges.

(1) Increase Financing and Improve Resource Allocation for the Health Sector

2.8 **Ensuring Adequate Budgetary Allocations to the Health Sector.** In FY93, public expenditure on health and family welfare, as a percentage of State Domestic Product, in Karnataka, Punjab and West Bengal was about 1.3%, 0.9% and 1.1% respectively; as a percentage of the total state revenue budget, the contribution of the health budget was 6.4%, 5.3% and 7.2% in Karnataka, Punjab and West Bengal respectively (see Annex 3). These contributions are low when compared to several Asian countries with similar or even higher levels of income. In Punjab and West Bengal, where the rate of growth of health expenditure has been below the overall rate of Government expenditure in some years, continuation of recent trends in health expenditure would not be sufficient to absorb the incremental costs to meet the basic health care service needs of the population. At Negotiations, the Governments of Karnataka, Punjab and West Bengal confirmed that they would at least maintain the share of health sector allocations within the overall budget at the FY94 level.

2.9 **Increasing the Share of Health Sector Resources to the Primary and First Referral Levels.** Within the health sector resource allocation is skewed in favor of tertiary care services, compared to secondary and primary care services. In particular, resource allocations within the hospital sector have been unfavorable to sub-divisional and rural/community hospitals. Moreover, tertiary hospitals have received a large share of total Plan resources allocated for the hospital sector. First referral care has, therefore, traditionally suffered from a low level of public funding. Investments at the first referral level would redress some of this imbalance during the implementation years (see Annex 3). At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that the share of both the primary and secondary levels in the total resources (Plan and Non-plan) allocated for the health sector would be increased each year until the year 2002.

2.10 **Safeguarding the Operations and Maintenance Component of the Budgetary Allocations for the Secondary Health Sector.** The non-salary recurrent cost budget of the health sector overall has been shrinking. With total grants remaining more or less constant, a rising share of salaries has meant that expenditures on critical inputs other than personnel, such as drugs and essential supplies have declined in recent years. Since price inflation for these commodities has been greater than average, there has in fact been a decline in real expenditures on non-salary recurrent costs. Moreover, during the last two years, even nominal expenditures per bed for drugs and consumables have declined. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that they would allocate adequate resources for drugs, essential supplies and maintenance of equipment and buildings at first referral hospitals in accordance with norms agreed with IDA.

(2) Strengthen the Capacity of the Implementation Agency in Sector Analysis and Management

2.11 **Enhancing Capacity for Strategic Planning.** A strategic planning cell has been set up in each state to address strategic planning issues in the health sector and provide management with policy options. It would undertake operational and policy related research projects, either independently or through local consultants, and it would organize workshops and seminars. In addition, the strategic

planning cell would undertake analyses of a number of other equally important health issues including: monitoring the role of the private sector and reviewing the suitability of present regulations relating to the quality of private care provision; analyzing the evolving epidemiological profile in the states; and undertaking of periodic review of the health manpower supply situation and training needs in each state. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that they would maintain the Strategic Planning Cell with adequate staff, resources, and terms of reference acceptable to IDA.

2.12 **Strengthening the Implementing Agency's Role in Managing Essential Operational Activities**. A new system of managing essential operational activities, particularly with regard to civil works construction and maintenance, has been proposed to successfully implement the large scope and volume of activities under the project. This would be achieved by making the DOHFW in Karnataka and West Bengal, and the PHSC in Punjab more directly responsible both financially and administratively to undertake civil works construction and maintenance activities under the project. At Negotiations, the three state Governments provided assurances that they would take all necessary actions to ensure that the DOHFW in Karnataka and West Bengal and PHSC in Punjab would provide, and thereafter maintain authority to manage essential operational activities such as civil works construction and maintenance activities.

(3) Enhance the Role of the Private and Voluntary Sectors in the Delivery and Management of Health Services

2.13 **Contracting-out Selected Services**. Private contractual services are often more efficient and effective than direct labor. In view of the difficulties of employing government staff, such as slow recruitment and poor attendance, contracting-out certain services, especially support services, becomes even more attractive. It has been confirmed that there are no legal barriers inhibiting the use of contractual services for support functions and that the Contract Labor Regulation and Abolition Act (1970), which prohibits certain institutions from contracting-out perennial services, exempt hospitals and health care facilities. At Negotiations, an understanding was reached that in order to cut costs and increase efficiency, the Governments of Karnataka, Punjab and West Bengal would review and implement, as appropriate, private contractual services, especially supporting services.

2.14 **Linkages with the Private and NGO Sectors**. As noted earlier, the private sector has a predominant presence in the health sector in the three states, especially in the provision of ambulatory care services. The role of the private sector in health care delivery can be further enhanced in the future, provided that the regulatory framework for ensuring the quality of health care provision can be appropriately strengthened. The state Governments propose to enhance the participation of the private and NGO sectors, especially for improving access to primary health care and first referral services in remote and underdeveloped areas of the Sunderbans in West Bengal and for disadvantaged groups, particularly SC/STs in Karnataka (see Annex 13). The state Governments are also exploring opportunities for contracting out the delivery of health care in remote areas to the NGO sector which has a comparative advantage in improving access to such health services for some disadvantaged groups. On matters of ensuring the quality of health care provision, state Governments would also play a more pro-active role, through legislation such as the Nursing Home Registration Act.

(4) Implementing a User Charge Policy

2.15 **Implementing Existing User Charges More Rigorously**. The health financing sector work indicates that the revenue collected in the three states from user charges varies between 3% and 7% of the health budget of the states. International experience in developing countries with somewhat higher per capita income than India, and where the performance of the public health sector has been relatively better, shows that revenue collected from user charges accounts for about 15-20% of the health budget. The Governments of the three states recognize the importance of increasing revenue collection through user charges for the sustainability of the sector. A major problem in increasing revenue is a lack of enforcement in the collection of existing user charges.

2.16 The system of user charges proposed by each state would be a combination of voluntary payments and targeting the poor for exemptions. In order to generate revenue and provide services for those willing to pay, district and sub-divisional hospitals will provide private paying bed facilities and begin to charge for services in a phased manner after improvements in the quality of basic services and infrastructure development have been completed. All three states would ensure that at least 20% of all beds at first referral hospitals would be designated as paying beds. It was agreed that user fees would be used specifically for non-salary recurrent cost purposes. Enhanced charges would be made effective after improved services are provided at each facility. The Governments would institute adequate administrative mechanisms for collecting user fees through District Health Committees and through the appointment of key staff at the district level who would be responsible for implementing and collecting user charges more rigorously (see Annex 5). At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that the arrangements for maintenance and collection of user charges would be maintained and user charges would be implemented in a phased manner after improvements in the quality of basic services and infrastructure development have been completed.

2.17 **Retention and Use of Revenue Collected**. The Governments of Karnataka, Punjab and West Bengal would implement a system that would ensure that funds collected through user charges would not revert to the state treasury, where they become part of general revenue. To provide incentives for hospitals to collect user charges, all three states would implement a system that would retain the funds collected at the institutional level. Funds collected through user charges would be utilized for non-salary recurrent cost purposes in all three states. At Negotiations, the Governments of Karnataka and West Bengal provided assurances that in Karnataka and West Bengal, the system established as a condition of Negotiations for the retention and reallocation of funds collected at the hospital level, that would reallocate funds, on the basis of both need and level of revenue collection by the District Health Committees, would be maintained. In Punjab, regulations on user charges would stipulate that funds collected would be retained at the point of collection.

2.18 **Exempting the Poor from User Charges**. Given the differences in management and administration, income levels and underlying structure of the economy in the three states, the states propose to use different criteria for exempting the poor from user charges (see Annex 5). In Karnataka, the Government proposes to use the existing green/tricolor card system within the Public Distribution System (PDS) in the state, which is used to provide nutritional support through issue of subsidized grain, as a basis for exemption from user fees. Green card holders are also entitled to subsidized cloth and kerosene. All poor families with an annual income level of Rs. 11,850 or below (i.e., the nationally accepted norm under the JRY program) are entitled to such green cards. The number of green card

holders in the state are about 5.3 million compared to the 9 million ration card holders of the PDS system. Understainding was reached with the Government that it would carefully monitor the green card system as a basis for exempting the poor from user fees and ensure that leakages are minimized. In Punjab, exemptions to the charges would include state government employees and members of families holding yellow cards which signify a family income of below Rs. 11,850 based on the JRY norms. New lists of families eligible for these cards are being put together. Total revenue raised by DOHFW in 1993/94 was Rs. 25 million or just over 1 percent of expenditure. According to the National Sample Survey 1987/88, almost 50 percent of hospitalized cases are in non public hospitals. The average payment per case in these institutions was Rs. 1,200, indicating a willingness to pay among the general population. Because of the higher income level in Punjab, the ability and willingness to pay for services is greater than in the other two states. As a result, there exists considerable opportunity to increase revenue collection through increased charges and better collection methods. In West Bengal, the existing system for exempting the poor is based on an 'Indigent Certificate' from the local elected representative, given to families with an income level below Rs. 1,500 per month. The West Bengal Government proposes to use this criterion rather than the JRY criterion because the latter does not apply to large portions of the urban population of West Bengal. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that the agreed mechanism for exempting the poor from user fees would remain in place.

II. Project Investments

2.19 The project in Karnataka, Punjab and West Bengal would finance the activities noted below:

(1) Management Development and Institutional Strengthening by: (a) improving the institutional framework for policy development; (b) strengthening the management and implementation capacity of institutions; and (c) developing a surveillance capacity for major communicable diseases and response capabilities;

(2) Improving Service Quality, Access and Effectiveness at the First Referral Level, through:
(a) upgrading community, subdivisional and district hospitals; (b) upgrading effectiveness of clinical and support services; and (c) improving the referral mechanism and strengthening linkages with the primary and tertiary health care levels; and

(3) Improving access to Primary Health Care in Remote and Underdeveloped areas by:
(a) upgrading primary health centers and improving access to primary health care services in the Sunderban area of southern West Bengal; and (b) increasing access to primary health care services among the SC/ST population in Karnataka.

Component 1. Management Development and Institutional Strengthening (US$26.6 million, 7% of base costs)

2.20 **Improving the Institutional Framework for Policy Development.** Sectoral capacity for development of policy would be strengthened in each state through the creation of a strategic planning cell headed by a person of the rank of a Joint Secretary who would report directly to the Secretary, DOHFW in each state. The planning cell would monitor the critical issues in the health sector in the state by commissioning studies, workshops and seminars and by directly hiring consultants to facilitate

these activities. As noted earlier, some of the issues would include monitoring the development of the private health sector including private and social insurance, reviewing the suitability of present regulations relating to the quality of private care provision, evaluating the burden of disease and cost-effectiveness of public health interventions and reviewing medical manpower. In addition, the strategic planning cell in each state would review implementation of cost recovery mechanisms and sectoral resource allocation patterns. Under this sub-component the project would finance furniture, vehicles, equipment including computers, local training, studies, fellowships, workshops, consultants, operational expenses and salaries of incremental staff on a decreasing basis.

2.21 **Strengthening Management and Implementation Capacity.** Project management arrangements in the three states have several common elements and some differences. Project management arrangements have taken into account the existing organizational set-up and implementation capacity of DOHFW, the health programs currently being implemented by the Department and the overall set-up of public administration in the state, especially with regard to the nature of decentralized administration in each state. In Karnataka and West Bengal, the project will be managed and implemented by DOHFW, which will be strengthened under the project to address increased investment at the primary and secondary levels of health care under the project. In Punjab, the project will be managed and implemented by the PHSC, which was passed as an Ordinance on October 20, 1995. The PHSC is an autonomous agency under the aegis of DOHFW. The aim of the PHSC is to establish, expand, improve and administer medical care at the secondary or first referral level in Punjab (see Annex 6 on Project Management). The project would also provide support to the PHSC for the promotion of health care activities in Punjab, through private and voluntary organizations, the details of which would be worked out during implementation. In addition, the project would provide physical facilities in Karnataka and West Bengal to consolidate, in one location, project related activities that are currently dispersed across Bangalore and Calcutta; and upgrade the office facilities of the PHSC and DOHFW in Punjab. At Negotiations, the Government of Punjab and the PHSC provided assurances that they would take all measures necessary to: (i) enable PHSC to carry out its part of the project; and (ii) the PHSC would undertake health care activities under the project at the secondary level in accordance with service delivery norms acceptable to the Association, and in carrying out other health care activities would ensure that the ability of PHSC to perform its obligations under the Agreement would not be materially and adversely affected.

2.22 Management arrangements in each state would be evaluated from time to time to see whether the management system is producing the best results. In addition, a review of overall state finances as well as the financial situation of the health sector would be undertaken, and, if necessary, would form the basis of additional measures to achieve financial sustainability of the project. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that not later than June 30, 1999, they would carry out, jointly with GOI and IDA, a detailed mid-term review of project progress including management and financial reviews, in accordance with terms of reference agreed with IDA, and thereafter implement their recommendations.

2.23 Staff strength at the Head Office to undertake increased responsibilities and perform some new functions would be enhanced. Headquarters staff would be increased to meet the increased workload and reorient the structure of DOHFW in Karnataka and West Bengal and the PHSC in Punjab to meet their new challenges. Specific areas targeted for strengthening include the training and referral unit, the finance and audit unit, the Office of the Director (General) and the Office of the Director, (Service

Delivery). Parallel improvements and strengthening of the management and implementation capacity at the hospital level would be undertaken. These actions would facilitate systems improvement, wider access and improved data collection and utilization for planning and policy making, problem solving and monitoring at all levels of management, including the facility level. In all the states, at the hospital level, both information collection and management are fairly rudimentary. The project would: (i) enhance and extend the computerized system through the provision of hardware and software, and consultancy support; (ii) establish trained and equipped information cells at HQ and district levels; (iii) train all management staff in appropriate record keeping; and (iv) introduce a completely revised medical record system for in-patients and diagnostic services. Under this sub-component the project would finance minor civil works, professional services, furniture, other equipment including computers, vehicles, other supplies, MIS/IEC materials, studies, workshops, local training, fellowships and operational expenses and salaries of incremental staff on a decreasing basis. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that DOHFW in Karnataka and West Bengal and PHSC in Punjab would appoint or engage additional headquarters personnel and all other personnel to be hired under the project in accordance with a schedule agreed with IDA.

2.24 **Developing Surveillance Capacity for Major Communicable Diseases.** The surveillance system for major communicable diseases proposed under the project would cover the identification of cases through education of health workers and community involvement; indexing of cases or isolation of cases and treatment; and tracing of contacts for monitoring and evaluation. In the long-term, however, the surveillance system would need to be expanded to include preventive examination among those most likely to be infected and carrying out immunization; and an enhanced response capability in case of outbreak or epidemic. This project would fill some of the gaps in the national disease programs by linking the three elements noted above and providing treatment at the primary and secondary levels.

2.25 Each state has identified a list of communicable diseases for routine surveillance. Explicit criteria for monitoring these communicable diseases would be set to avoid any ambiguity in reporting by different agencies. Emphasis has been put on a community-based system for early detection and reporting and the full participation of local level institutions working at the village or community will be necessary to make the system more effective. For example in West Bengal, stamp printed red cards would be introduced for quick transmission of information on communicable diseases, and would contain information such as name, age, sex, address, date of onset, immunization status, date of death (if any) of every patient with or died from a specific communicable disease. The red card would be used in out-patient departments and entry points of in-patient cases in all health and medical units of the state. As soon as a case is detected the card will be filled out and posted to the district epidemiological cell which would be provided with the facility under the project to sort, analyze and report such incidences to the appropriate authority for quick follow up action. It will also be important to include the support of private medical practitioners and private institutions through workshops as well as training programs. The implementation of the health management information system (HMIS) will improve tracing of contacts as well as provide information on other diseases that are slated to be included under HMIS activities. To improve the system, quick containment measures have been developed even in the case of a single incidence to prevent possible outbreak of a specific disease identified in the priority list. In the case of outbreak/epidemic daily monitoring would be required. Under this subcomponent, the project would finance minor civil works, professional services, furniture, other equipment and supplies, MIS/IEC materials, local training, operational expenses and salaries of incremental staff on a declining basis.

Component 2. Improving Service Quality and Effectiveness at District, Subdivisional and Community/Rural Hospitals (US$308.2 million, 86% of Base Costs)

2.26 **Renovating/Extending District, Subdivisional and Community/Rural Hospitals.** In Karnataka, 21 district, 107 subdivisional and 74 community hospitals would be renovated/extended; in Punjab, 13 district, 46 subdivisional, 91 community, one children's and one maternity hospitals would be renovated/extended; in West Bengal, 15 district, 60 subdivisional and 95 rural hospitals would be renovated/extended. There would not be any new hospitals built under the project. The state Governments have confirmed that no new sites will be acquired for upgrading facilities and that all premises slated for renovation/extension have existing land. In Karnataka, 3,832 new beds will be added to the existing bed strength of 14,858 at first referral facilities; in Punjab, about 2,140 new beds will be added to the existing bed strength of 5,822 at first referral facilities; and in West Bengal, no additional beds are proposed to the existing 21,723 operational beds in these facilities which a current capacity for only 19,964 beds. In West Bengal, the project would create supporting infrastructure for the overcrowded facilities to adequately accommodate the 21,723 beds that are already operating but at a low level. The proposed increase in bed strength at the secondary level in Karnataka and Punjab are justified on the basis of: (i) Indian Planning Commission norms of 1 bed per 1,000 population overall, of which 70% are recommended at the secondary level; and (ii) the epidemiological approach, which is based on the total number of beds required to address the burden of disease at the state level. Both approaches suggest a greater increase in bed strength in each state than is proposed under the project. Staff quarters would also be built in all three states in areas where housing is a problem for staff. Under this sub-component, the project would finance civil works, professional services, equipment, building maintenance and operational expenses.

2.27 **Upgrading the Effectiveness of Clinical and Support Services and Quality of Services at District, Subdivisional and Community/Rural Hospitals.** Streamlined norms and standards for clinical and support services would be applied at the first referral hospitals. Staffing norms conforming to services provided at each type of facility would be adopted, a system for monitoring improvements in the quality of clinical care would be established through the adoption of a quality assurance program and the capacity of support services would be expanded. Staff skills in clinical and technical areas would be enhanced through the provision of training to improve the quality and range of services. Management training for professional cadres and on-going in-service training for clinical and technical cadres would also be strengthened. This would facilitate the implementation of the quality improvement strategy of the project, through which new responsibilities would be provided. It is expected that decision-making would be decentralized down to the appropriate management level. Under this sub-component the project would finance minor civil works, professional services, furniture, medical and other equipment, medical laboratory and other supplies, medicines, vehicles, MIS/IEC materials, local training, studies, workshops, fellowships, consultants, equipment and building maintenance, operational expenses and salaries of additional staff on a decreasing basis. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that they would adopt, within six months of upgrading each facility, staffing and technical norms at district, subdivisional and community/rural hospitals, as agreed with IDA, to ensure the quality of services.

2.28 At the first referral level, the focus of improving management effectiveness would be on strengthening service delivery. The first referral level would be able to better manage its resources,

deliver clinical services effectively, and hospitals will be able to play a more important role within the district health systems. DOHFW in West Bengal and Karnataka and the PHSC in Punjab would have greater freedom of action with regard to recruitment of staff and revenue raising; establish clarity of goals, objectives and procedures; create opportunities for contracting out services, especially support services; improve medical record-keeping, health management information systems (HMIS) and related evaluation and monitoring capacities; provide management training; improve capacity for equipment management, especially state-wide maintenance services by enhancing the capacity for equipment maintenance and training. To facilitate an early start to this process, the states have taken the following action: in Karnataka, the Project Governing Board, Steering Committee and Engineering Wing have been established, and key staff have been approved or hired; in Punjab, key staff, including the Managing Director of the PHSC, have been appointed; and in West Bengal, key staff, including Project Director, have been hired. They have also provided a schedule for the hiring of key staff (Annex 6)

2.29 There is currently no acute shortage of professional staff overall, but there is a shortage of some medical specialties and nurses. The first step would be to improve recruitment and prompt filling of job vacancies by improving recruitment procedures. An understanding was reached with the states that the implementing agencies would have the authority to: (i) advertise, appoint, promote and transfer staff internally; (ii) post staff as needed, especially in tribal areas; (iii) introduce appropriate incentives to retain staff in remote areas including: provision of staff quarters, bonus at the end of a specified period of posting, educational allowance for children of staff posted in remote and tribal areas, additional leave eligibility and extra credit for doctors and other staff for post-graduate qualification admission and for fellowships; and (iv) relax service rules as necessary to maintain service when appropriately qualified staff are unavailable.

2.30 Due to the scope of the civil works component and the need to ensure adequate maintenance of assets as a result, DOHFW in Karnataka and West Bengal and the PHSC in Punjab would be strengthened by providing them with enhanced management and supervision responsibilities of essential operational activities, including construction and maintenance activities, in collaboration with local Government. An Engineering Wing in the implementing agency in each state would be set up at the state and district levels, adequate funds would be provided and the flow of these funds would be channeled through the implementing agency. In addition, a Maintenance Cell will be established in each large hospital, to manage day-to-day emergent maintenance works. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that they would provide funds, satisfactory to the Association, annually for the maintenance of previously existing equipment in health facilities supported under the project.

2.31 **Improving Referral System**. The referral system in Karnataka, Punjab and West Bengal, as in the rest of India, does not function well (see Annex 8). Patients perceive the lower level facilities as providing lower quality of services. As a result, the lower tiers are underutilized since patients directly proceed to higher level hospitals for minor illnesses, thereby overloading the higher level institutions. The beneficiary assessment study in West Bengal found that about 2% of the patients at first referral facilities were referred from PHC's. It is estimated that a third of all cases which are currently treated at tertiary facilities could be treated, and at lower costs, at first referral facilities if those facilities received adequate inputs.

2.32 The project would seek to ensure that a much higher proportion of patients coming to first referral hospitals had been seen at PHCs and referred upwards. Likewise, for those patients going to tertiary hospitals, the project would implement several measures to strengthen the referral system and improve the quality of care at the first referral level. Special attention would also be given to establishing mechanisms to improve access for remote and disadvantaged groups and tribal communities. The referral system would also be strengthened by establishing an incentive system with differentiated user fees for users and non-users and allowing patients to by-pass waiting lines when they carry a referral slip. Under this sub-component the project would finance vehicles (purchase, hire and maintenance), other supplies, MIS and IEC materials, local training, consultants, fellowships, workshops and operational expenses. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that they would strengthen the referral system between the primary, secondary and tertiary levels by December 31, 1996, by: (i) issuing appropriate directives to hospitals to strengthen the management of the referral system; (ii) establish and thereafter maintain and implement appropriate referral protocols and clinical management protocols; and (iii) establish and thereafter maintain and implement an appropriate incentive system for patients who use the system.

Component 3. Improving Access to Primary Health Care in Remote and Underdeveloped Areas (US$ 24.3 million, 7% of base costs)

2.33 **Upgrading of Primary Health Centers in the Sunderban Area of West Bengal.** The Sundarban area in southern West Bengal, with a population of about 3.1 million people is among the poorest regions in the state with a predominance of small and marginal farmers -- 40% of the population belong to SC/STs. The 54 islands, interspersed with bodies of water, are covered with forests and swamps. They are intersected from north to south by wide tidal rivers and estuaries and from east to west by narrow tidal creeks. Transport and communication networks are inadequate in this hostile geographical and topographical location. Metalled roads comprise about 10% of the total road surface area. Where available, transport is painfully slow and people have to travel in an assortment of country boats, cycle-rickshaws and buses to reach their destinations. There are no major hospitals in the region and travel time is at least eight hours from the closest point by public transport to Calcutta and its overcrowded health facilities. The remoteness of the region, the lack of transport, the poverty of the people and lack of access to health facilities have contributed to the health problems of the people in the Sundarban Areas. It is, therefore, proposed that the project would upgrade all the 28 PHCs and 8 block PHCs in the Sunderban area. In addition, three floating medical units will be set up to deliver effective health care in the riverine areas and would be supported by wireless connection. A wireless communication system will also link up the 36 PHCs and block PHCs with the gram panchayat office. Under this subcomponent, the project will finance civil works, professional services, furniture, riverine vehicles, medical and other equipment, medical and laboratory supplies, medicines, other supplies, MIS/IEC materials, local training, studies, workshops and operational expenses.

2.34 **Increasing Access to Primary Care Services Among SC/ST Population in Karnataka.** A system of annual health check-ups is proposed under the project for the SC/ST population of Karnataka, which account for nearly 20% of the population. The medical check-ups will be made available in health check-up camps to be organized at the headquarters of every auxiliary nurse midwife (ANM). At the beginning of each year, the district health and family welfare worker would draw up a calendar for every PHC indicating the date, time and place at which health check-up teams would visit the subcenter. Prior to the date for which health check-up is fixed in a particular village, the

ANM and the male health worker would make house-to-house contact with each SC/ST household to ensure maximum attendance. This would also be a good venue for IEC activities relating to the dissemination of general public health related issues. The health-check up team would consist of a medical officer of the PHC, lady medical officer drafted for the purpose from a government hospital, laboratory technician, lady health visitor, ANM and a paramedical staff. Much of the work will be done at the level of the ANM, who will do the early screening. The PHC medical officer will review a smaller number of more complex cases. Referral to first referral hospitals will follow the system set up under the referral system for the general population. A record of health check-ups will be maintained in a master register and each individual would be issued a health check-up card free of cost. These camps will also provide family planning services. The novelty of this program is that it will mobilize the PHC staff in a manner consistent with the delivery of primary care services originally envisaged under the NHP. The subcomponent will finance furniture medical and laboratory supplies, medicines, other supplies, MIS/IEC materials, local training operational expenses and salaries of additional staff on a decreasing basis.

III. PROJECT COST, FINANCING, IMPLEMENTATION AND DISBURSEMENT

A. Project Costs

3.1 The total cost of the project is estimated at about Rs.16,691.4 million or US$416.7 million equivalent, including taxes and duties estimated at US$22.2 million equivalent. The project costs in Karnataka, Punjab and West Bengal would be US$136.4 million, US$106.1 million and US$174.2 million respectively. IDA would finance about US$350.0 million or about 88.7 percent of total project costs net of taxes; the balance of US$66.7 million would be financed by the Governments of the three project states, Karnataka (US$25.0 million), Punjab (US$16.4 million) and West Bengal (US$25.3 million). The direct and indirect foreign exchange cost is estimated at US$94.6 million. The project would finance civil works, equipment and furniture, vehicles, medical and laboratory supplies, medicines, other supplies, MIS/IEC supplies, professional services, training, studies and evaluations, workshops, and operational expenses and salaries of incremental staff on a declining basis. Details of cost estimates, financing plan, procurement arrangements and disbursements plans are shown in the various annexes of the SAR.

3.2 The breakdown of project costs by component and categories of expenditure for the project is summarized in Tables 3.1 and 3.2.

Table 3.1: Cost By Component

Component	(Rupee Million)			(US$ Million)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Management Development & Institutional Strengthening								
1a - Improve Institutional Framework for Policy Development	58.3	16.4	74.7	1.7	.5	2.1	22%	1%
1b - Strengthen Management & Implementation Capacity	667.4	105.4	772.9	19.2	3.0	22.2	14%	6%
1c - Develop Surveillance Capacity	63.4	15.3	79.1	1.8	.4	2.3	19%	1%
Subtotal	789.0	137.1	926.7	22.7	3.9	26.6	15%	7%
2. Improve Service Quality, Access and Effectiveness								
2a - Renovate & Extend Community, Area & District Hospitals	4,085.9	740.8	4,826.7	117.4	21.3	138.7	39%	0%
2b - Upgrade Clinical Effectiveness	3,982.7	1,431.8	5,414.5	114.4	41.1	155.6	43%	0%
2c - Improve Referral Mechanism	202.8	280.0	482.8	5.8	8.0	13.9	4%	0%
Subtotal	8,271.4	2,452.6	10,724.0	237.7	70.5	308.2	86%	0%
3 - Improve Access to Basic Health Services	611.0	233.8	844.9	17.6	6.7	24.3	7%	0%
Total BASELINE COSTS	9,672.1	2,823.5	12,495.6	277.9	81.1	359.1	100%	0%
Physical Contingencies	890.5	279.6	1,170.1	25.6	8.0	33.6	9%	0%
Price Contingencies	2,340.9	684.9	3,025.7	18.5	5.4	24.0	7%	0%
Total PROJECT COSTS	12,903.5	3,788.0	16,691.4	322.1	94.6	416.7	116%	0%

Table 3.2: Cost by Categories of Expenditures

	(Rupee Million)			(US$ Million)			%	% Total
	Local	Foreign	Total	Local	Foreign	Total	Foreign Exchange	Base Costs
Investment Costs								
Civil Works (Renovation)	1,131.1	199.6	1,330.7	32.5	5.7	38.2	15%	11%
Civil Works (New Constr or Extension)	2,737.3	483.0	3,220.3	78.7	13.9	92.5	15%	26%
Professional Services	356.1	89.0	445.1	10.2	2.6	12.8	20%	4%
Furniture	304.7	33.9	338.5	8.8	1.0	9.7	10%	3%
Major Medical Equipment	562.7	844.1	1,406.8	16.2	24.3	40.4	60%	11%
Minor Medical Equipment	43.3	10.8	54.2	1.2	.3	1.6	20%	-
Medical Equipment - Surgical Packs	81.0	20.3	101.3	2.3	.6	2.9	20%	1%
Equipment (Other)	763.1	190.8	953.8	21.9	5.5	27.4	20%	8%
Vehicles	109.9	329.8	439.7	3.2	9.5	12.6	75%	4%
Medical Lab Supplies	127.9	32.0	159.9	3.7	.9	4.6	20%	1%
Medicines	401.5	401.5	803.0	11.5	11.5	23.1	50%	6%
Other Supplies	550.3	-	550.3	15.8	-	15.8	-	4%
MIS/IEC Materials	156.2	52.1	208.3	4.5	1.5	6.0	25%	2%
Local Training	220.5	-	220.5	6.3	-	6.3	-	2%
Studies	66.7	-	66.7	1.9	-	1.9	-	1%
Fellowships	6.2	55.6	61.8	.2	1.6	1.8	90%	-
Workshops	51.5	-	51.5	1.5	-	1.5	-	-
Consultants	12.4	-	12.4	.4	-	.4	-	-
NGO's	18.7	-	18.7	.5	-	.5	-	-
Total Investment Costs	7,701.0	2,742.4	10,443.4	221.3	78.8	300.1	26%	84%
Recurrent Costs								
Salaries of Additional Staff	1,225.2	-	1,225.2	35.2	-	35.2	-	10%
Operational Expenses	473.5	52.6	526.1	13.6	1.5	15.1	10%	4%
Building Maintenance	69.4	7.7	77.1	2.0	.2	2.2	10%	1%
Surgical Pack Maintenance	2.9	.2	3.1	.1	.0	.1	5%	-
Vehicle Maintenance	15.6	1.7	17.4	.4	.0	.5	10%	-
Equipment Maintenance	170.2	18.9	189.1	4.9	.5	5.4	10%	2%
Furniture Maintenance	14.3	-	14.3	.4	-	.4	-	-
Total Recurrent Costs	1,971.1	81.1	2,052.2	56.6	2.3	59.0	4%	16%
Total BASELINE COSTS	9,672.1	2,823.5	12,495.6	277.9	81.1	359.1	23%	100%
Physical Contingencies	890.5	279.6	1,170.1	25.6	8.0	33.6	24%	9%
Price Contingencies	2,340.9	684.9	3,025.7	18.5	5.4	24.0	23%	7%
Total PROJECT COSTS	12,903.5	3,788.0	16,691.4	322.1	94.6	416.7	23%	116%

3.3 **Basis of Cost Estimates**. Estimated costs for civil works are based on current unit costs for construction which vary from US$135 per square meter in Karnataka and Punjab to US$165 per square meter in West Bengal of gross floor area of construction. The higher unit costs in West Bengal are due to the relative scarcity of building material in the state. These costs are comparable to IDA-assisted construction in India. Costs of professional services for design reflect the scale of fees established for similar services provided by local architectural consulting firms. Costs for supervision of construction reflect the standard ongoing charges in the private sector. Cost estimates for furniture, medical equipment, vehicles and medical supplies are product of lists developed by DOHFW, and include import duties and taxes. Costs of other supplies are based on the state estimates and reflect current prices. Estimated costs for the salaries of additional staff are based on basic pay scales including standard allowances for social and other benefits applicable in each project State.

3.4 **Customs Duties and Taxes**. All imported goods are subject to customs duties and taxes. The estimated cost of the project includes import duties and taxes estimated at about US$22.2 million equivalent.

3.5 **Contingency Allowances**. Estimated project costs include physical contingencies (US$33.6 million) estimated at 10% of all physical components and at 5% for technical assistance, training and salaries. The estimated costs of the project also include price contingencies (US$24.0 million) to cover expected price escalation at the following rates. For civil works, goods, salaries, technical assistance and operation and maintenance - foreign costs: 4.4% in FY96, 1.8% in FY97 and FY98, 2.2% in FY99, 2.3% in FY00 and FY01, and 2.4% in FY02; local costs: 8.7% in FY96, 8.2% in FY97, and 7.5% in FY98, 6.5% in FY99, 6.0% in FY00 through FY02.

3.6 **Foreign Exchange Component**. The estimated foreign exchange component of US$94.6 million is calculated on the basis of estimated foreign exchange proportions as follows: (a) civil works 15%; (b) professional services 20%; (c) furniture 10%; (d) equipment 60%; (e) locally manufactured vehicles 12%; (f) imported vehicles 90%; (g) medical laboratory supplies 20%; (h) medicine 50%; (i) MIS and IEC materials 25%; (j) foreign fellowships 90%; (k) operation and maintenance, and maintenance for buildings and equipment 10%.

B. Financing Plan

3.7 The estimated total project cost of US$416.7 million equivalent would be financed by an IDA Credit of US$350.0 million equivalent, which would cover about 88.7 percent of the project costs net of taxes. The Governments of Karnataka, Punjab and West Bengal would finance the remaining costs of US$44.5 million plus all taxes (US$22.2 million).

3.8 The credit would be made available to GOI on standard terms and conditions and on-lent to the Governments of Karnataka, Punjab and West Bengal under standard arrangements for development assistance to the states; and Punjab would further transfer the funds to PHSC as a grant. Under current GOI policies and regulations, on-lending to Karnataka, Punjab and West Bengal takes the form of 30% grant/70% loan at 12% interest per annum over 20 years. GOI would assume foreign exchange risk. At Negotiations, an understanding was reached with GOI that it would release about three month's anticipated project expenditures in advance to the project states (in accordance with the amounts established in the Annual Plans), and that upon receipt of funds from GOI, the Governments of

Karnataka, Punjab and West Bengal would transfer all such funds, together with its quarterly counterpart contributions, immediately to the project accounts of DOHFW in Karnataka and West Bengal and the DOHFW/PHSC in Punjab.

C. Procurement Arrangements

3.9 Table 3.3 summarizes the project items, their related cost estimates and proposed methods of procurement. Project-related procurement for goods, works and services would follow procedures acceptable to IDA using ICB and NCB documents acceptable to the Association. Project-financed consultants would be recruited according to *Guidelines on the Use of Consultants by World Bank Borrowers*. Procurement of equipment, vehicles, and medical laboratory supplies would be bulked to the extent possible and any individual contract exceeding US$200,000 equivalent would be procured under ICB procedures. This is also true for vehicles including riverine vehicles, except for those needed for immediate use costing up to an aggregate of US$300,000 only, which may be procured through national shopping or Directorate General of Supplies and Disposals (DGS&D), New Delhi rate contract. Shopping under the project would include international shopping procedures, based on comparing price quotations obtained from at least three suppliers from two eligible countries, or national shopping procedures with solicitation of price quotations from at least three suppliers, all in accordance with Bank Guidelines.

3.10 **Civil Works (US$152.2 million).** The civil works component entails no new hospital construction but does involve large and small scale renovations and extensions to 557 hospitals over the five year life of the project. An estimated 475 contracts (costing US$134.2 million) will be carried out through national competitive bidding. These works average between US$300,000 and US$500,000 and would not be of any interest to foreign bidders and would be procured under NCB procedures. Contracts for the remaining works estimated to cost about US$ 45,000 equivalent or less per contract at about 400 sites up to an aggregate not exceeding US$18.0 million scattered and in remote areas shall be procured, in accordance with procedures acceptable to the Association: (i) through Force Account limited to US$10,000,000; (ii) by direct contracting; or (iii) under quotations solicited from at least three qualified contractors.

3.11 **Equipment (US$84.5 million).** Procurement of most of the equipment would be phased on an annual basis in accordance with the requirements of the project activities. Contracts valued at over US$200,000 would be procured through ICB for an amount equal to US$54.9 million. Contracts valued at US$200,000 or less would be procured through NCB procedures acceptable to IDA for an amount not exceeding US$12.7 million. Purchases totaling US$50,000 or less, and not exceeding in aggregate US$12.7 million and US$4.2 million equivalent, may respectively be awarded on the basis of national and international shopping based on comparing price quotations obtained from at least (a) three suppliers from two eligible countries for international shopping and (b) three national suppliers for national shopping. An estimated 200 contracts will be carried out through ICB and NCB, ranging from over US$200,000 to US$750,000 per contract. Phasing of the procurement of equipment will be closely sequenced with the civil works program. Details on the type of equipment and packaging are available as working papers.

3.12 **Vehicles (US$14.6 Million)** would be procured during the first two years of the project through ICB for an amount not exceeding US$14.3 million. To facilitate project start-up activities

procurement of vehicles up to an aggregate of US$300,000 will be undertaken by the three states under national shopping procedures or DGS&D rate contracts. An estimated 24 contracts would be carried out through ICB, ranging from US$200,000 to US$800,000 per contract.

Table 3.3: Procurement Arrangements
(Total Costs in US$ Millions)

	Procurement Method					
	International Competitive Bidding	National Competitive Bidding	International Shopping	Local Shopping	Other Methods /a	Total
CIVIL WORKS						
Civil Works	-	134.2 /b (114.1)	-	-	18.0 (15.3)	152.2 (129.4)
GOODS						
Furniture	-	8.5 /c (7.7)	-	2.8 (2.6)	-	11.4 (10.2)
Equipment	54.9 (49.4)	12.7 (11.4)	4.2 (3.8)	12.7 (11.4)	-	84.5 (76.0)
Vehicles	14.3 (12.9)	-	-	0.3 (0.3)	-	14.6 (13.1)
Medical Lab Supplies	-	2.7 (2.4)	0.4 (0.3)	2.3 (2.1)	-	5.4 (4.9)
Medicines	-	22.0 (19.8)	1.5 (1.3)	3.7 (3.3)	-	27.2 (24.5)
Other Supplies	-	7.4 (6.7)	-	11.1 (10.0)	-	18.5 (16.7)
MIS/IEC Materials	-	5.2 (4.7)	-	1.7 (1.6)	-	6.9 (6.2)
CONSULTANCIES						
Project Preparation & Implementation (incl Training, Workshops, Fellowships)	-	-	-	-	10.7 (10.7)	10.7 (10.7)
Institutional Development (includes Local Consultants, Studies, Professional Services Fees, NGO Fees)	-	-	-	-	18.1 (16.3)	18.1 (16.3)
MISCELLANEOUS						
Salaries of Additional Staff	-	-	-	-	39.3 (25.5)	39.3 (25.5)
Operational Expenditures	-	-	-	17.8 (11.1)	-	17.8 (11.1)
Building Maintenance	-	-	-	-	3.1 (1.7)	3.1 (1.7)
Equipment Maintenance	-	-	-	-	7.0 (3.8)	7.0 (3.8)
Total	69.2 (62.3)	192.7 (166.8)	6.1 (5.5)	52.5 (42.3)	96.2 (73.3)	416.7 (350.0)

Notes:

/a "Other" methods include Force Account, Direct Contracting and Consulting Services

/b Figures in parenthesis are the repective amounts financed by IDA

/c Figures may not appear to add exactly due to rounding

3.13 **Furniture (US$11.4 million), Laboratory Supplies (US$5.4 million) MIS/IEC Materials (US$6.9 million) and Other Supplies (US$18.5 million)** would be purchased as follows. Contracts estimated to cost less than US$50,000 equivalent up to an aggregate of US$17.6 million (furniture - US$2.8 million, medical laboratory supplies - US$2.3 million, MIS/IEC materials US$1.7 million and other supplies US$11.1 million) may be awarded on the basis of national shopping with solicitation of price quotations from at least three suppliers. This is again based on the fact that this amount covers purchases by 557 hospitals over a period of five years. Contracts valued at US$50,000 equivalent or more would be awarded on the basis of NCB procedures acceptable to IDA for an amount not exceeding US$23.8 million (furniture - US$8.5 million, medical laboratory supplies - US$2.7 million, MIS/IEC materials - US$5.2 million and other supplies - US$7.4 million). Contract for medical laboratory supply estimated to cost less than US$200,000 per contract, not to exceed an aggregate amount of US$0.4 million equivalent will be awarded under international shopping procedures, based on comparing price quotations obtained from at least three suppliers from two different eligible countries in accordance with Bank Guidelines.

3.14 **Medicines (US$27.2 million)** would be purchased by each of the 557 hospitals as well as by DOHFW in Karnataka and West Bengal and the Health Systems Corporation in Punjab several times per year over the five year life of the project. Bulking requirements would not always be feasible due to shelf life of the medicines. As a result, the individual purchases would be small and not likely to attract foreign bidders. Accordingly, contracts valued at US$50,000 equivalent or more would be awarded on the basis of NCB procedures acceptable to IDA for an amount not exceeding US$22.0 million. Contracts estimated to cost less than US$50,000 equivalent up to an aggregate of US$5.2 million may be awarded on the basis of National and International Shopping procedures based on comparing price quotations obtained from at least: (a) three suppliers for national shopping; (b) three suppliers from two different eligible countries, in accordance with Bank Guidelines.

3.15 **Studies and Consultancy Contracts (US$2.9 million) and Professional Services (US$15.2 million)**. Professional services will be used mainly for architectural and engineering services which will be provided from within the country. Consultants required under the project will be hired following procedures prescribed in "Guidelines: Use of Consultants by World Bank Borrowers and by the World Bank as Executing Agency"; August, 1981. Documents used for inviting proposals, terms of reference for all consultancies and single-source contracts will be subject to prior review for all contracts valued at US$100,000 or more awarded to firms and US$50,000 or more to be awarded to individuals. The professional services entail approximately 500 contracts valued from about US$15,000 to US$60,000; this many contracts would not be suitable for international consulting firms. These contracts will include topographical surveys, soil tests, architectural and engineering fees, and supervision of construction.

3.16 **Fellowship, Training, and Workshops (US$10.7 million)**. This category includes expenses related to training of about 22,663 medical professionals over the life of the project in respect of seminars, workshops, travel and subsistence allowances.

3.17 **Equipment Maintenance (US$7.0 million) and Building Maintenance (US$3.1 million)**. Maintenance costs for vehicles, medical and other equipment items estimated to cost less than US$5,000 per contract up to an aggregate of US$7.0 million would be procured from local commercial suppliers of such services: (i) through direct contracting; or (ii) under quotations solicited from at least

three suppliers in accordance with procedures acceptable to IDA. Maintenance of buildings and building equipment (funded by the project), estimated to cost US$5,000 equivalent or less per contract upto an aggregate of US$3.1 million, shall be carried out by other procedures where such arrangements already exist or by obtaining three quotations from local contractors in accordance with procedures acceptable to IDA.

3.18 **IDA Review.** Prior to the issuance of any invitations to bid for contracts, the proposed procurement plan for the project shall be furnished to the Bank for its review and approval, in accordance with the provisions of paragraph 1 of Appendix 1 to the Guidelines. Procurement of all goods and works shall be undertaken in accordance with such procurement plan as shall have been approved by the Bank, and with the provisions of said paragraph 1. All procurement under contracts costing US$300,000 equivalent or more for civil works and US$200,000 equivalent or more for goods would be subject to prior review; the rest would be subject to post review. All other contracts would be subject to random post review in the field by visiting missions. Other contracts for civil works and goods would be subject to IDA review after contract award. Contracts for the hiring of consulting firm costing US$100,000 equivalent or more and contracts for hiring individual consultant costing US$50,000 equivalent or more, would be subject to prior review and approval by IDA. Approximately 60% of the value of the IDA Credit would require prior review.

D. Disbursement Profile

3.19 The proposed IDA credit would be disbursed over five and a half years. This is shorter by 18 months than the standard profile for PHR projects in India. The project is expected to be completed on September 30, 2001 and the credit closed on March 31, 2002. Table 3.4 below shows forecasts of expenditures and disbursements.

Table 3.4: Estimated Expenditures and Disbursements
(US$ Million)

IDA FY	FY97	FY98	FY99	FY2000	FY01	FY02
Annual Expenditures	45.6	88.1	111.2	98.2	66.2	7.4
Annual Disbursement	24.5	57.9	85.9	87.6	67.2	26.9
Cumulative Expenditures	45.6	133.7	244.9	343.1	409.3	416.7
Cumulative Disbursement	24.5	82.4	168.3	255.9	323.1	350.0

3.20 **Disbursement Percentages and Required Documentation.** The IDA Credit would be disbursed against 85% of expenditures on civil works: 100% on professional services, consultants and fellowships; 100 percent of CIF and ex-factory costs or 80% of other local expenditure on furniture, equipment, vehicles, medicines and materials, MIS and IEC materials; and 65% of salaries of incremental staff and other recurrent costs on a declining basis during the project period starting with

90% until December 31, 1998, 75% until December 31, 2000 and 40% thereafter. Disbursements for civil works over US$300,000 equivalent per contract, goods over US$200,000 equivalent per contract, consulting firm contracts over US$100,000 and individual consultants over US$50,000 equivalent would be fully documented and all other expenditures would be disbursed on the basis of statement of expenditures. Each state Government would maintain complete records of funds disbursed, including certificates of completion signed by the District Executive Engineer, the Managing Director of Punjab Health Systems Corporation and the Project Coordinators in Karnataka and West Bengal.

3.21 **Special Account and Central Government Advance to the State.** In order to accelerate disbursements in respect of IDA's share of expenditures prefinanced by GOI and the state Governments, and to allow for direct payment of other eligible local and foreign expenditures, a Special Account would be maintained in the Reserve Bank of India in the amount of US$17.0 million equivalent to cover four months of estimated disbursements through the Special Account.

3.22 **Retroactive Financing.** Retroactive financing for project preparation in the amount of US$10 million, about 2.8 percent of the proposed credit, is provided to cover eligible expenditures incurred in implementing appraised project activities after May 1, 1995. Retroactive financing in support of project preparation would support initial staff appointments, technical survey of the existing hospitals under the project including topographical site surveys and soil tests, preparation of preliminary designs, and initial construction activities. Procurement arrangements were reviewed and found appropriate.

E. Project Implementation

3.23 In Karnataka and West Bengal, the project will be managed and implemented by DOHFW. In Punjab, the project will be managed and implemented by the Punjab Health Systems Corporation (PHSC). Lists of staff or Committee Members, organograms for each state, and the functional levels of project management in each state are shown in Annex 6.

3.24 In all three states, a Project Governing Board (PGB)/ Board of Directors (BOD) will be at the top of the project management structure. It will include high level representation from all relevant parts of the state Government that are associated with the project. The PBG/BOD will be fully empowered to make major policy decisions and develop the broad policy outline for the project; approve the annual budget; authorize major project revisions as necessary; ratify decisions made by the Steering Committee (in Karnataka); formulate rules and regulations; and undertake an annual review of project implementation and monitor overall project progress. The PGB/BOD in each state would have the responsibility for supervising the activities of project management. A provision has been met under the project for the use of consultancy/professional services under technical assistance to support this function, especially with regard to the new approach to the management of civil works. The PGB in Karnataka and West Bengal would meet twice a year, while the BOD in Punjab would meet more often. The Strategic Planning Cell would report to the PGB/BOD.

3.25 In Karnataka, but not in West Bengal or Punjab, there would be a Steering Committee under the PGB. The Steering Committee would delegate adequate powers to the PGB to carry out its functions as the nodal body for project implementation. The Secretary, DOHFW, would be the Chairman of the Steering Committee and the Project Coordinator. The Steering Committee will

supervise and monitor project implementation, undertake planning activities and facilitate project management activities.

3.26 Reporting to the PGB/BOD directly, in Punjab and West Bengal, and through the Steering Committee in Karnataka, would be the Project Management Cell (PMC). The PMC would be headed by an Additional Secretary as the Project Administrator in Karnataka, a Special Secretary as the Managing Director of the PHSC in Punjab, and a Special Secretary as the Project Director in West Bengal. This official would be assisted by medical, technical, engineering services, financial management and administration and personnel divisions. The functions of the PMC would include all aspects of routine project management, monitoring progress, maintaining flow-of-funds and project account, providing technical guidance and general administration, and preparing progress reports.

3.27 At the district level, a District Health Committee/Project Implementation Cell would facilitate functioning of the various activities to be carried out under the project. In Karnataka and West Bengal, District Health Committees have been approved/established in all districts. At Negotiations, the Governments of Karnataka and West Bengal provided assurances that they would maintain District Health Commitees in all districts of the states to facilitate the collection and distribution of user charges, maintenance of equipment, waste management, training of technical staff, quality assurance surveillance of major communicable diseases and monitoring and supervision of project related activities.

3.28 The initial phase of project implementation will focus on developmental activities including project launch; monitoring mechanisms and performance indicators; strengthening health MIS system and surveillance network for major communicable disease; initiating in-service training of staff in clinical, management and equipment matter; strengthening the functions and appointing key staff and supplying equipment to existing hospitals to improve the quality of service program. The disbursement profile relating to the balance of hardware and software aspects of the project would be monitored during supervision to ensure that an optimal balance between the two is maintained. The first phase of the hospital upgradation program would consist of 42 hospitals in West Bengal, 45 hospitals in Karnataka and 40 hospitals in Punjab. During the initial phase, the implementation plan would be to: complete topographical site surveys and soil tests; finalize and complete all drawings including site development plans, invite bids and commence construction for all hospitals under the four planned phases (see Annex 18); and complete over 50 percent of phase I and phase II and about 25% of phase III and phase IV; and prepare and complete all drawings including site development plans, launch bids and sign contracts of all 557 hospitals, 28 PHCs and 8 Block PHCs requiring upgradation. About 35 percent of total construction is expected to be completed by the end of the second year. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that they would review with IDA annually by April 30 of each year the progress of project implementation over the preceding twelve months and prepare an annual work plan for the following twelve months acceptable to IDA.

F. Status of Project Development

3.29 The Governments of Karnataka, Punjab and West Bengal have finalized their project proposals (September, 1995) in consultation with IDA missions and on the basis of workshops on service norms, project management and policy issues organized by each state. Based on these norms and taking into account cost-effectiveness criteria, the proposals have defined appropriate staffing patterns, physical upgradation of facilities, equipment requirements and the need for support services. Letters of Health Sector Development Program furnished by each state were finalized during Negotiations (see Annex 2). Project management arrangements, additional staffing requirements and functional responsibilities have been finalized and found satisfactory by IDA (see Annex 6).

3.30 Beneficiary assessment and private sector studies have been completed in Karnataka, Punjab and West Bengal. The findings and recommendations of these studies have been used to fine-tune project design in each state. The tribal and backward areas strategy proposed for the project in Karnataka and West Bengal was found satisfactory by the IDA team; Punjab will have no tribal strategy since there is no tribal population in the state (see Annex 13).

3.31 An extensive survey of all health facilities to be included under the project has been completed in Karnataka, Punjab and West Bengal. Samples of the surveys in all three states have been reviewed and found satisfactory. Each state has recruited consultants to ensure timely preparation of designs, architectural and engineering drawings, and written bid documents. Preliminary designs of about 35 hospitals have been initially reviewed. The state Governments have been informed that these should be in accordance with World Bank guidelines for the use of consultants to ensure that retroactive financing would be applicable. The Governments of Karnataka, Punjab and West Bengal have prepared procurement plans and discussed and agreed on the bidding documents for procurement activities in the first two years of implementation.

3.32 All clinical, equipment and staffing norms have been reviewed and agreed with the states. An essential drug list has been prepared by each state and found satisfactory by IDA. An inventory of the nature and state of the current equipment at each facility that will receive inputs under the proposed project, including the primary care facilities in the Sunderbans area of West Bengal, has been completed in Karnataka and West Bengal. Following this exercise, an analysis has been completed of the equipment requirements at each facility. Punjab is nearing completion of this exercise.

3.33 A plan for a surveillance system for major communicable diseases has been discussed with each state. Community participation in the surveillance network has been incorporated and links with HMIS have been elaborated in the proposals. All three states have developed a comprehensive plan for the implementation of medical waste management which includes tertiary hospitals not covered by the project (see Annex 11).

3.34 The overall implementation schedule for the different project components has been carefully synchronized. With regard to implementation schedules: civil works program has been prepared in each state and procurement packages for civil works have been finalized; lists of the equipment to be purchased under the project has also been finalized; training for staff, IEC, HMIS, referral system, waste management, surveillance system, and other software aspects of the project have also been finalized and found satisfactory by IDA (see Annex 18).

3.35 A list of performance indicators has been discussed and agreed upon (see Annex 19). Baseline data on the performance indicators have been mostly put together by the states. The concept of medical audit, which will extend the scope of monitoring activities under the project at the hospital level, would be finalized at a joint workshop to be held in March, 1996. The workshop will also finalize clinical training modules and the scope of the quality assurance program at the hospital level.

3.36 Workshop on training modules for each category of staff was held in Calcutta and attended by Karnataka and Punjab as well. Based on this, each state has developed a list of number staff to be trained, and the focus, location and duration of training (see Annex 7). The three states confirmed that the management training component would be contracted out to management institutes.

3.37 Prior to Negotiations, the three state Governments took the following actions: (i) a Letter of Health Sector Development Policy was furnished by each state, which was finalized during Negotiations; (ii) relevant state Government clearances, as well as clearance from the Planning Commission, GOI, were obtained; (iii) Strategic Planning Cells were set up within the DOHFW in Karnataka and West Bengal and PHSC in Punjab; (iv) a mechanism for ensuring that existing level of user charges are implemented more rigorously was approved, an agreed mechanism for exempting the poor from user fees is in place, and District Health Committees in Karnataka and West Bengal have been approved/established; (v) an Ordinance was passed by the Government of Punjab, establishing the PHSC; (vi) regulations relating to Board procedures, personnel policies, audits and accounts, and user charges have been issued; (vii) in Karnataka, the Project Governing Board, Steering Committee and Engineering Wing were established, and key staff were approved or hired; (viii) in Punjab, key staff, including the Managing Director of the PHSC, were appointed; (ix) in West Bengal, key staff, including Project Director, were hired; and (x) in Karnataka and West Bengal, Government Orders were issued, providing authority to DOHFW to manage essential operational activities including civil works construction and maintenance activities.

G. Social Assessment

3.38 A Social Assessment (SA) was undertaken for this project and was utilized extensively to fine-tune project design (see Annex 14). Some issues addressed by the SA included: the social risks which might affect the success of the project, including the institutional and management arrangements and capacity building at appropriate levels of administration; the social and cultural factors that affect the ability of stakeholders to participate or benefit from the proposed project; and the impact of the project on women and vulnerable groups. A multi-pronged strategy was adopted to gather the data required for the SA. This included: basic demographic, epidemiological and socio-economic data from secondary sources; and primary data on demand and supply factors affecting health care delivery generated through participatory observations, interviews, case studies, focus groups, surveys and rapid rural appraisal.

3.39 An important aspect of the SA was the involvement of key stakeholders. Preparation of the project devoted special attention to facilitating a sense of ownership and commitment of those involved in the process. They included: (i) the Government of India (GOI), the state Governments of Karnataka, Punjab and West Bengal, and agencies responsible for project implementation; (ii) the beneficiaries i.e. the individuals, groups and communities who would benefit from the proposed intervention;

(iii) women, scheduled castes (SC) and scheduled tribes (ST); and (iv) others with a vested interest in development initiatives, including other donor agencies, NGOs, religious and community organizations, local authorities and the private sector. The SA contributed to developing the following key aspects of project design:

- increased access to improved health services for women, by strengthening the link between community hospitals with primary health centers, especially for emergency obstetric care, through improvements in the referral mechanism for these services. In addition, the life-cycle approach to women's health, including screening for reproductive tract infections (RTIs) and sexually transmitted diseases (STDs), IEC, and increasing women's awareness of their options in terms of health care, has been incorporated in the service norms.

- increased access to improved health services for SC/ST groups, by strengthening the link between primary and first referral health system; providing an incentive package to medical staff to accept assignments in tribal areas; reducing costs to tribals of utilizing the system; and increasing hospital beds in tribal areas to reflect a share of beds which is much more commensurate with their proportion in the overall population.

- exempting the poor from user charges, by instituting adequate mechanisms in each state. In addition, with regard to user charges, appropriate collection and management arrangements would be strengthened; and the revenue collected would be reallocated to hospitals within the districts.

- enhanced contribution of the private sector in health care delivery, through contracting-out selected services as appropriate. In addition, NGO participation in remote and underdeveloped areas would be promoted.

- increased efficiency and effectiveness of the first referral network, through the development of technical norms on the basis of the existing burden of disease in each state.

- improved effectiveness of the primary health care system, by developing links with the secondary level through the referral mechanism, and by strengthening its management, implementing referral and clinical protocols, and establishing an incentive system for utilizing the referral mechanism.

H. Fiscal Analysis

3.40 The fiscal analysis undertaken for this project covers a number of issues that assisted in fine-tuning project design and policy reform in each state. These include: (i) an analysis of public expenditure in the health sector and recurrent cost implications of the project (see Annex 3); (ii) sustainability analysis of the project, including impact on health and state finances (see Annex 3); and (iii) alternative scenarios estimating the generation of additional resources through user charges (see Annex 5).

3.41 **Public Expenditure on Health and Recurrent Cost.** An analysis of public expenditure on health is presented in paras. 1.17-1.20, and in Annex 3. The burden of recurrent costs of the project in relation to overall health expenditures is analyzed, on the basis of the following questions: (i) what will be size of the incremental recurrent costs as a percentage of the state's health and FW current budget;

(ii) what will be the size of the incremental recurrent costs as a percentage of the state's plan and non-plan current budget; (iii) what will be the likely share of the first referral level as a percentage of the health and FW budget at project completion; and (iv) how much funds can user charges reasonably generate at project completion.

3.42 Incremental annual recurrent costs including contingencies at project completion are expected to be about Rs. 360 million in Karnataka, about Rs. 250 million in West Bengal, and about Rs. 150 million in Punjab. This compares to current allocations for Health and Family Welfare of about Rs. 4,872 million in Karnataka, Rs. 5,570 million in West Bengal and Rs 2,202 million in Punjab. Assuming continuation of past trends in overall expenditures in the year following the end of the project, allocations would amount to Rs. 6,950 million in Karnataka, Rs. 6,803 million in West Bengal and Rs. 2,956 million in Punjab. Incremental recurrent costs of the project would amount to 5.2%, 3.7% and 5.1% of total revenue expenditures for the Health and Family Welfare Departments in Karnataka, West Bengal, and Punjab respectively. The incremental recurrent costs of the project imply an increase share for health of total Government expenditures of around 0.3 percentage points in Karnataka, 0.3 percentage points in West Bengal and 0.2 percentage points in Punjab.

3.43 These increments should not be a problem for the state to provide. The state Governments would meet the incremental recurrent cost needs by increasing the size of the health budget and by reallocating incremental resources from the tertiary to the secondary level of health care. A commitment to this effect has been provided in the Letter of Health Sector Development Program. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that:
(i) their respective incremental budgetary allocations under the project for the primary and first referral levels for each fiscal year during the implementation of the project would be fully additional to the allocations made in FY95; (ii) and budgetary allocations for recurrent expenditures at the first referral level would be provided on a timely basis adequate to meet resource requirement under the project's annual operating plan for each year.

3.44 **Sustainability**. The deterioration in the overall financial position of the states suggests that a sustainability analysis beyond the traditional recurrent cost implications of project investment be undertaken. As such, a limited analysis of financial sustainability is presented. In Karnataka, the revenue account in 1993/94 was in surplus. The gross fiscal deficit is equivalent to 17 percent of revenues -- one of the smallest among the major states. Interest payments on debt accounted for 11.6 percent of total revenue expenditures in 1992/93 rising to 12.7 percent in 1994/95. Public debt was equal to 26.3 percent of state domestic product in 1990/91 and to 27.0 percent in 1994/95. The indicators of public finances in Karnataka show some slight deterioration over the past few years as a result of increased borrowing for capital expenditures but overall demonstrate a picture of reasonable strength. The financial implications of the project for the state government include the necessity to service the loan, as well as the incremental recurring expenditure. Including contingencies the projected loan represents 4.7% of the current outstanding debt of the state government. Given the current relatively low share of interest payments in total revenue expenditures (second to lowest among the eleven major states) the additional burden arising from this project should be manageable.

3.45 In Punjab, the deficit on the revenue account was estimated at 13.5% of revenue receipts in 1994/95 and to 23 and 24% in the two previous years. The gross fiscal deficit has been equal to 40-45 percent of revenue receipts over the past three years -- the highest for any state. Interest payments on

the state government's debt as a share of total state revenue rose from 12.5 percent in 1985/86 to 37.2 percent in 1994/95 -- the second highest among the eleven most highly populated states. Revenue growth from state taxes has been buoyant in recent years and well above that for all states combined. However, additional efforts will be required both to increase revenue receipts further and to restructure expenditures if growth in social sector real expenditures is to revive. The relative wealth of the state suggests that it will not be a problem to generate the increased revenues.

3.46 In West Bengal, the deficit on the revenue account was equal to 19 percent of revenue receipts in 1994/95 (the highest ratio across the 15 major states). This has increased from 14 percent in 1991/92. The gross fiscal deficit is currently (1994/95) equal to 30 percent of revenue receipts. Interest payments on the state government's debts were equal to 19.1 of revenue expenditures in March 1995. This is slightly above the average across the major states (18.0 percent). Outstanding debt is equivalent to 22.6% of state domestic product which is slightly below the average. Efforts are underway to improve state public finances. The fiscal deficit in 1995/96 is anticipated to be below the previous years' and as a share of revenue receipts is planned to fall to 27%. The project will add 4.5% to the current debt of the state Government. Further efforts to increase revenues and to alter the structure of expenditure obviously will be necessary to reverse the relatively weak position of public finances in general and the deteriorating situation of finances for the health sector in particular.

3.47 **Revenue from User Charges.** An analysis of potential revenue generated by implementing user charges, based on information from Karnataka, was undertaken. The analysis shows that Rs. 136 million could be generated from paying beds and wards, charges for diagnostic tests and surgery, out-patient charges and charges for health certificates. This is equal to about 9% of the total or about 29% of all non-salary recurrent expenditures. This amount of additional revenue could have a significant effect on the levels of service quality provided by first referral level hospitals. These calculations are based on expected revenue from more rigorous implementation of the current level of charges prevailing at first referral level hospitals. There is, however, considerable scope for enhancing the user charges. For example, Government hospitals charge Rs. 45 and Rs. 100 for minor and major surgery respectively compared to the average private expenditure on an episode of hospitalization in a rural private hospital in 1986-87 of Rs. 733 (NSSO). The estimates of revenue generated are, therefore, on the lower end of the projected range.

I. Indigenous Population

3.48 In both Karnataka, with a 4% Scheduled Tribe population, and West Bengal, with a 5.6% Scheduled Tribe population, tribal peoples are likely to be substantial beneficiaries of the proposed project. During project preparation, a number of workshops were held to facilitate the consultative participation of tribal populations (see section G on Social Assessment, Annexes 13 and 14).

3.49 The project's tribal and backward areas strategy is aimed at increasing the demand for hospital services in tribal areas by improving the quality of services and providing effective IEC to better inform tribal populations of the benefits of using health services at secondary hospitals. The project would: (a) strengthen linkages between primary and secondary health care services; (b) provide an incentive package to doctors and other medical staff in tribal areas to encourage them to accept assignment in these areas; (c) increase the appropriate utilization of non-tribal medical system by tribal population and reduce the cost to tribals of utilizing the system. In addition, the number of beds at sub-

divisional and community hospitals located in tribal areas will be increased to reflect a share of beds at secondary hospitals that is much more commensurate with their proportion in the overall population of the states. At Negotiations, the Governments of Karnataka and West Bengal provided assurances that they would carry out the project in tribal areas in their respective states, and in the Sunderban areas of West Bengal and amongst disadvantaged groups in Karnataka in accordance with the strategy agreed with IDA.

J. Environmental Aspects

3.50 The proposed project would not raise any environmental concerns. The project would enhance medical waste disposal at health facilities where necessary. A plan for improving disposal of medical wastes has been provided by each state.

K. Land Acquisition

3.51 The process of acquisition of additional land, where required, for the extension of existing hospitals has been initiated and most sites have been made available. IDA has been assured that none of the sites for hospital upgradation would entail involuntary resettlement of any persons.

L. Accounting and Auditing

3.52 The project would be subject to normal Government accounting and auditing procedures which are considered acceptable to IDA. At Negotiations, the Governments of Karnataka, Punjab and West Bengal provided assurances that: (i) project accounts would be maintained and audited annually in accordance with sound auditing standards consistently applied by independent and qualified auditors acceptable to IDA; and (ii) certified copies of the annual financial statements and SOEs together with the auditor's report, which would comment separately on the SOEs, would be submitted to IDA no later than nine months after the close of each fiscal year.

IV. PROJECT BENEFITS

A. Benefits

4.1 A major benefit of the proposed project is that it will assist the states of Karnataka, Punjab and West Bengal to put in place a coherent approach to establishing a cost-effective and sustainable health system. This would indirectly benefit the states' population as a whole. First, the broader sectoral policy reforms envisaged under the proposed project such as improvements in health planning capacity, management effectiveness, allocation of public resources for health, and enhanced role of the private sector would increase the efficiency of the health sector by improving the environment in which the health sector operates and by optimizing resource use. Second, there would be substantial cost savings in each state through the implementation of streamlined service norms and rationalization of service provision at different levels of health care delivery. Morever, the technical and quality improvements, including operations and maintenance functions, at the institutional and health facility levels will enhance the effectiveness and efficiency of health care services by encouraging patients to seek timely care resulting in higher cure rates at lower costs. Third, those currently utilizing existing services would benefit from better quality of care. In addition, there would be other qualitative benefits which would have a significant impact on the health system. For example, the strengthening and upgrading of first referral facilities would lend vital support and credibility to the primary health care system for implementing the various priority health programs and provide basic health care in rural areas. An adequately functioning referral mechanism would also improve the effectiveness of the primary health care level and encourage a greater participation of the private sector in health care. Moreover, there are considerable externalities associated with reducing public health hazards through improvements in waste disposal methods and through improvements in the surveillance system for major communicable diseases. Finally, the proposed project will have a direct impact on improving the health status of the people of each state by reducing mortality, morbidity and disability and thus increase the earning potential of the poor.

4.2 **Project Beneficiaries**. In addition to systemic benefits which would indirectly benefit the populations of the states of Karnataka, Punjab and West Bengal, noted in para. 4.1, the project would directly benefit approximately 10 million out-patients and 0.7 million in-patients currently utilizing existing hospital services in the three states through the provision of better quality of care. In addition, the project is expected to directly benefit an estimated 3.3 million incremental out-patients in West Bengal, 1.2 million in Karnataka, and 0.7 million in Punjab; and an estimated 0.4 million incremental in-patients in West Bengal, 0.3 million in Karnataka and 0.12 million in Punjab. This analysis on incremental in-patients is based on the following assumptions: (i) incremental patients at secondary hospitals do not include those expected to be diverted from tertiary hospitals; (ii) occupancy rate of 80% in West Bengal, 64% in Karnataka, and 60% in Punjab at pre-project and is assumed to increase to 100%, 82% and 78% in West Bengal, Karnataka, and Punjab, respectively at project completion; (iii) the average length of stay is 12 days in West Bengal, 15 in Karnataka and 12 in Punjab pre-project and is assumed to decline to 8, 10 and 8 in West Bengal, Karnataka and Punjab, respectively at project completion; and (iv) a corrective factor is used that assumes that a third of all in-patients are hospitalized about 2.5 times annually based on hospital data.

4.3 **Cost Effectiveness Analysis.** The project is not suitable for a cost-benefit type analysis because of the difficulty in quantifying benefits and data limitations. However, a micro-level analysis, based on detailed hospital level cost data, was undertaken to show the possible cost savings of treating patients at secondary level facilities rather than at tertiary hospitals (see Annex 4). Analysis comparing cost-effectiveness between different types of hospitals is limited in India, because of the unavailability of data. Previous analysis has shown that at least a third of all costs could be saved by treating patients at first referral facilities rather than at tertiary level facilities. However, due to variations in the case-mix, such analysis did not compare cost-effectiveness at first referral and tertiary hospitals. The following is an illustrative example of the type of cost savings that would result from the project investment. To estimate cost savings of treating patients at secondary level hospitals, a preliminary analysis of the overall profile of unit costs related to specific inputs for in-patients and out-patients was undertaken. A comparison was made between a tertiary level hospital and a first referral level hospital in Hyderabad where comparable data based on a similar case-mix was available. Both hospitals had a similar case-mix of ante-natal, intra-natal, family planning and gynaecological services. Since both hospitals provided in-patient and out-patient services, a comprehensive index which captures both types of services was used to estimate at unit costs (the day equivalent method). It was found that the day equivalent[4] at first referral hospitals was about two-thirds that of a tertiary hospitals – Rs. 115 compared to Rs. 160. The difference was largely because of greater unit cost of infrastructure and overheads at tertiary hospitals. This analysis provides an indicative example of cost savings that can result from the strengthening and rationalization of health services across different tiers of the health system.

B. Program Objective Categories

4.4 Poverty Aspects. A large proportion of project beneficiaries will be from the poor and underprivileged segments of the states' population. In West Bengal, the beneficiary assessment study found that nearly 70% of expected project beneficiary would belong to the lower 40% of income distribution. In Karnataka, the analysis found that over 45% of the patients have an annual income below Rs. 15,000 (close to the official poverty line) and over 90% of the patients have an annual income below the taxable level of Rs. 50,000. In Punjab, a relatively large share of the investment under the project is targeted in the Upper Bari Doab region where 30% of the overall population and 40% of the rural population live below the poverty line; and the Southern Malwa region where rural poverty is about 25%. Based on this data, the proposed project is classified as a Program of Targeted Interventions (PTI).

4.5 Gender Issues. In general, the project would provide much greater access to women, particularly rural women, and improve the quality of services they receive. More specifically, by strengthening the referral mechanism and linking the community hospitals with primary health centers, the project would assist in providing timely access to emergency obstetric care. The project would also promote a life-cycle approach to women's health, taking into account some of the main recommendations of the Cairo Conference on women's reproductive health, such as screening RTIs and STDs, providing appropriate IEC to promote the value of the girl-child, and increasing women's awareness of their options in terms of health care.

---

[4] The day equivalent method equates one in-patient day with four out-patient visits (Barnum and Kutzin, Public Hospitals in Developing Countries; Johns Hopkins University Press, 1993).

C. Risks

4.6 The proposed project carries several risks that are associated with PHN projects in general in India such as poor procurement, late disbursement, untimely and inadequate flow of funds, poor maintenance of building and equipment and inadequate attention to software and qualitative aspects. Most of these risks have been substantially reduced through careful project design. There are two additional risks associated with this project. **Institutional**. The capacity of existing institutions to undertake systemic improvements and to establish a more rational health delivery system has not been tested in India. Institutional strengthening would be emphasized in the proposed project to address this risk. In Punjab, the newly formed PHSC might experience some start-up problems. The Government of Punjab, at the highest level, has made a commitment to enable the PHSC to effectively implement the project. **Financial**. As with other projects in India, the overall financial status of the states is a risk. The position of public finances in Karnataka and recent trends in expenditure on health both suggest that the project's incremental recurrent costs are sustainable. In Punjab and West Bengal, however, continuation of recent trends in health expenditures would not be sufficient to absorb the incremental costs. In both cases the rate of growth of health expenditures in recent years has been below the growth rate of overall expenditure. There are, however, various measures which will help reduce the risk to financial sustainability significantly. The state Governments are committed to ensure that health expenditures will be maintained at least as a constant share of overall expenditures throughout the life of the project. In the case of Punjab, the necessary resources needed to sustain this commitment can be mobilized with small increase in revenue. In the case of West Bengal, some reorientation of its fiscal policies may be required to ensure sustainability. An on-going mechanism for monitoring the financial sustainability of the states was discussed at negotiations. Understanding was reached that as part of the project's comprehensive mid-term review, there would be a review of overall state finances, as well as the financial situation of the health sector. If necessary, additional measures to achieve financial sustainablity of project benefits would be agreed based on results of that review.

V. AGREEMENTS REACHED AND RECOMMENDATION

5.1 At Negotiations, the Governments of Karnataka, West Bengal, Punjab and the Punjab Health Systems Corporation provided assurances that they would:

(a) ensure that: (i) the share of resources to the primary and secondary levels of health care in the total resources (Plan and Non-plan) allocated to the health sector would be increased each year until the year 2002; and allocate adequate resources for drugs, essential supplies and maintenance of equipment and buildings at first referral hospitals in accordance with norms agreed with IDA (paras. 2.9-2.10);

(b) maintain a Strategic Planning Cell with adequate staff, resources and terms of reference acceptable to IDA (para. 2.11);

(c) take all necessary actions to ensure that the DOHFW in Karnataka and West Bengal and PHSC in Punjab would maintain authority in managing essential operational activities including civil works construction and maintenance activities (para. 2.12);

(d) ensure that: (i) the arrangements for the management and collection of user charges approved prior to negotaitions would be maintained; (ii) user charges would be implemented in a phased manner after improvements in the quality of basic services and infrastructure development have been completed; (iii) the agreed mechanism for exempting the poor from user fees would remain in place; and (iv) in Karnataka and West Bengal, the system for reallocation of funds collected at the hospital level, to be retained and reallocated based on need and level of revenue collection by the District Health Committees, would be maintained. In Punjab, regulations on user charges would stipulate that funds collected would be retained at the point of collection (paras. 2.16-2.18);

(e) not later than June 30, 1999 carry out, jointly with GOI and IDA, a detailed mid-term review of project progress including management and financial reviews and thereafter implement their recommendations (para. 2.22);

(f) maintain key headquarters personnel for purposes of implementing the project and would engage and thereafter maintain key additional personnel with adequate qualifications and experience to be hired under the project in accordance with a schedule agreed with IDA (para. 2.23);

(g) adopt, within six months after upgradation of each facility, staffing and technical norms at all hospitals under the project, as agreed with IDA, to ensure the quality of services (para. 2.27);

(h) provide funds, satisfactory to the Association, annually for the maintenance of previously existing equipment in health facilities supported under the project (para. 2.30);

(i) strengthen the referral system between the primary, secondary and tertiary levels by December 31, 1996, by: (i) issuing appropriate directives to hospitals to strengthen the management of the referral system; (ii) establish and thereafter maintain and implement appropriate referral protocols and clinical management protocols; and (iii) establish and thereafter maintain and implement an appropriate incentive system for patients who use the system (para 2.32).

(j) review with IDA by April 30 of each year the progress of project implementation over the preceding twelve months and prepare an annual work plan for the following twelve months acceptable to IDA (para. 3.28);

(k) ensure that (i) the respective incremental budgetary allocations under the project for the primary and first referral levels for each fiscal year during the implementation of the project would be fully additional to the allocation made in FY95; and (ii) budgetary allocations for recurrent expenditures at the first referral level would be provided on a timely basis adequate to meet resource requirement under the project's annual operating plan for each year (para. 3.43); and

(l) a project account would be maintained and audited annually in accordance with sound auditing standards consistently applied by independent and qualified auditors acceptable to IDA; and certified copies of the annual financial statements and SOEs together with the auditors' report, which would comment separately on the SOEs, would be submitted to IDA no later than nine months after the close of each fiscal year (para. 3.52).

5.2 At Negotiations, the Governments of Karnataka and West Bengal provided assurances that they would:

(a) maintain District Health Commitees in all districts of the states to facilitate the collection and distribution of user charges, maintenance of equipment, waste management, training of technical staff, quality assurance surveillance of major communicable diseases and monitoring and supervision of project related activities (para 3.27); and

(b) carry out the project in tribal areas, in the Sunderban area of West Bengal, and amongst disadvantaged groups in Karnataka, in accordance with the strategy agreed with IDA (para. 3.49).

5.3 At Negotiations, the Government of Punjab and the PHSC provided assurances that they would (i) take all necessary actions to enable PHSC to carry out its part of the project; and (ii) undertake health care activity under the project in accordance with service delivery norms acceptable to the Association, and ensure, in carrying out other health care activities, that the ability of PHSC to perform its obligations under the Agreement would not be materially and adversely affected (para. 2.21).

5.4 With the above assurances and agreements, the project would be suitable for an IDA Credit of SDR 235.5 million (US$350.0 million equivalent) on standard IDA terms with 35 years maturity.

HEALTH STATUS AND EPIDEMIOLOGY

Table 1: Health Indicators
Current Status and Targets to the Year 2000

	Targets	India	Karnataka	Punjab	West Bengal
1. Population (million)			47.9	20.3	72.4
2. Crude Birth Rate	21.0	28.5	25.5	26.3	25.6
3. Crude Death Rate	9.0	9.2	8.5	7.0	7.3
4. Infant Mortality Rate	Below 60	74.0	6.7	55.0	58.0
5. Expectation of Life at Birth					
(a) Male	64.0	60.6	62.1	66.6	62.0
(b) Female	64.0	61.7	63.3	66.6	61.9
6. Percentage of Eligible Couples Effectively Protected	60.0	45.5	49.0	63.7	37.2
7. Annual Growth Rate of Population	1.2	2.1	31.9	2.1	2.2
8. Pregnant Mothers Receiving Ante-natal Care	100.0	78.1	84.0	5.1	80.0
9. Deliveries by Trained Birth Attendants	100.0	69.8			70.0
10. Immunisation Status % Coverage					
(a) T.T. (for pregnant mother)	100.0	78.1	70.0	91.3	80.0
(b) D.P.T. (infants)	100.0	88.8	69.3	90.9	84.9
(c) Polio (infants)	100.0	89.2	69.5	90.4	85.5
(d) B.C.G. (infants)	100.0	92.6	73.1	88.2	96.2

Source: Sample Registration Survey

HEALTH STATUS AND EPIDEMIOLOGY

Table 2: Morbidity Profile of Karnataka, Punjab and West Bengal

Cause Groups	Karnataka	Punjab	West Bengal
1. Infective & Parasitic Diseases	16.3	17.0	17.6
2. Neoplasm	1.0	0.7	0.7
3. Endocrine, Nutritional & Metabolic Diseases & Immunity Disorders	3.5	2.4	1.7
4. Diseases of the Blood & Blood Forming Organs	0.3	0.7	1.1
5. Mental Disorders		0.8	0.9
6. Diseases of the Nervous Systems and Sense Organs	5.1	8.7	2.9
7. Diseases of the Circulatory System	2.9	3.1	4.1
8. Diseases of the Respiratory System	14.5	17.3	7.8
9. Diseases of the Digestive System	5.2	9.9	10.1
10. Diseases of the Genito Urinary System	2.7	3.0	4.8
11. Complications of Pregnancy/Child Birth	11.1	3.12	22.7
12. Diseases of the Skin & Sub-cutaneous Tissue	4.6	8.0	2.1
13. Diseases of the Musculo Skeletal System & Connective Tissue	1.3	3.5	1.1
14. Congenital Anomalies	0.1	0.1	0.3
15. Certain Conditions Originating in the Perinatal Period	0.3	0.2	0.3
16. Symptons, Signs and Ill Defined Conditions	1.0	5.8	13.2
17. Injury & Poisoning	19.9	15.5	8.7

Source: Sample Registration Survey

Table 3: Disability-Adjusted Life Years (DALYs, In Thousands): India

Disease or injury (ICD 9 code)	Both sexes all ages	Males						Females					
		0-4	5-14	15-44	45-59	60+	All ages	0-4	5-14	15-44	45-59	60+	All ages
All Causes	292,646	66,901	15,919	31,563	16,102	14,969	145,454	69,699	16,564	35,580	11,939	13,425	147,151
I Communicable maternal & perinatal (001-139,320-322,460-465,466,480-487,614-616 630-676,760-779)	148,277	48,927	7,360	10,094	2,864	1,526	70,771	49,010	8,294	17,257	1,837	1,327	77,506
A Infectious & parasitic dis (001-139,320-322,614-616)	82,028	22,655	6,071	8,877	2,524	695	40,822	24,165	6,652	8,625	1,398	366	41,206
A1 Tuberculosis (010-018,137)	10,800	244	582	3,256	1,694	506	6,282	399	969	2,270	729	152	4,518
A2 STDs excluding HIV (090-099,614-616)	3,734	114	3	386	25	2	530	121	6	3,046	28	2	3,203
a Syphilis (090-097)	808	114	2	327	23	1	468	121	2	198	19	.	340
b Chlamydia	326	.	.	55	2	.	58	.	3	253	10	1	268
c Gonorrhoea (098)	16	.	.	4	.	.	5	.	.	11	.	.	12
d Pelvic inflammatory disease (614-616)	2,581	.	.	.	.	.	.	.	.	2,584	.	.	2,584
A3 HIV infection	4,066	12	9	2,567	112	7	2,707	14	15	1,314	14	1	1,358
A4 Diarrhoeal diseases (001,002,004-006,009)	28,037	11,586	1,129	804	102	21	13,643	12,268	1,305	688	113	20	14,394
a Acute watery	15,390	5,913	856	638	76	16	7,498	6,260	988	545	84	15	7,852
b Persistent	8,773	3,967	411	.	.	.	4,015	4,201	57	.	.	.	4,258
c Dysentery	4,374	1,706	225	167	26	6	2,130	1,006	260	143	29	5	2,244
A5 Childhood cluster (032-33,037,045,050,055,56,138)	19,453	7,738	1,751	56	26	9	9,579	8,059	1,726	52	29	8	9,874
a Pertussis (133)	2,950	1,189	236	.	.	.	1,425	1,255	270	.	.	.	1,525
b Poliomyelitis (045,138)	1,835	362	725	.	.	.	1,087	246	502	.	.	.	748
c Diphtheria (032)	108	20	28	.	.	.	48	17	38	5	.	.	60
d Measles (055)	9,336	3,873	618	.	.	.	4,491	4,102	744	.	.	.	4,846
e Tetanus (037)	5,224	2,293	145	56	26	9	2,528	2,440	172	47	29	8	2,696
A6 Meningitis (036,320-322)	2,006	589	370	178	40	13	1,191	516	168	116	12	5	815
A7 Hepatitis (070)	311	35	63	31	12	3	143	37	74	40	14	3	168
A8 Malaria (084)	951	59	151	219	39	8	476	62	175	187	43	8	475
A9 Tropical cluster (085,086,120,125)	2,425	90	447	725	166	30	1,459	67	355	280	234	30	966
a African trypanosomiasis (086.3,086.4,086.5)	.	.	.	.	.	.	.	.	.	.	.	.	.
b Chagas disease (086.0,086.1,086.2)	.	.	.	.	.	.	.	.	.	.	.	.	.
c Schistosomiasis (120)	251	.	.	156	.	9	166	.	.	.	84	.	85
d Leishmaniasis (085)	1,732	90	447	451	17	4	1,010	67	355	279	19	3	723
e Lymphatic filariasis (125.0, 125.1)	442	.	.	118	149	17	284	.	.	.	131	27	158
f Onchocerciasis (125.3)	.	.	.	.	.	.	.	.	.	.	.	.	.
A10 Leprosy (030)	521	33	209	14	3	.	259	31	216	13	1	.	262
A11 Trachoma (076)	309	.	.	49	33	30	112	.	.	89	15	53	157
A12 Intestinal helminths (126-129)	2,056	5	866	161	15	9	1,056	5	826	145	15	8	1,000
a Ascaris (127.0)	1,166	5	589	2	.	.	597	5	562	2	.	.	569
b Trichuris (127.3)	486	.	246	2	.	.	249	.	235	2	.	.	237
c Hookworm (126)	404	.	31	157	14	9	211	.	29	142	14	8	191
B Respiratory infections (381-382,460-466,480-487)	31,754	11,891	1,289	1,218	340	831	15,568	12,556	1,485	1,041	363	741	16,186
B1 Acute lower respiratory inf (460-465)	30,133	11,351	1,217	1,042	308	816	14,734	12,020	1,420	896	338	726	15,399
B2 Acute upper respiratory inf (466,480-487)	598	26	22	176	32	15	320	27	66	145	26	15	278
B3 Otitis media (381-382)	1,023	514	.	.	.	.	514	509	.	.	.	.	509
C. Maternal conditions (630-676)	7,824	.	.	.	.	.	.	.	156	7,592	76	.	7,824
C1. Haemorrhage (666,667)	1,365	.	.	.	.	.	.	.	47	1,305	13	.	1,365
C2 Sepsis (670)	2,752	.	.	.	.	.	.	.	31	2,693	27	.	2,752
C3 Eclampsia (642.4-642.6)	394	.	.	.	.	.	.	.	16	374	4	.	394
C4 Hypertension (642 minus 642.4-642.6)	191	.	.	.	.	.	.	.	8	182	2	.	191
C5 Obstructed labour (660)	1,941	.	.	.	.	.	.	.	16	1,906	18	.	1,941
C6 Abortion (630-639)	916	.	.	.	.	.	.	.	31	906	9	.	946
D. Perinatal causes (760-779)	26,671	14,381	.	.	.	.	14,381	12,290	.	.	.	.	12,290

Table 3: Disability-Adjusted Life Years (DALYs, In Thousands): India (Continued)

Disease or injury (ICD 9 code)	Both sexes all ages	Males						Females					
		0-4	5-14	15-44	45-59	60+	All ages	0-4	5-14	15-44	45-59	60+	All ages
N Noncommunicable (140-628,680-759) (minus 320-322,460-465,466,480-487, 614-616)	117 642	15,202	4,700	14,701	12,226	13,080	59,908	17,525	5,002	13,567	9,589	12,051	57,734
A Malignant neoplasms (140-208)	12 041	147	472	1,340	2,547	2,126	6 633	483	69	1,468	2,103	1,286	5,409
A1 Mouth and oropharynx (140-149)	1,908	3	9	226	385	658	1,280	13	2	131	202	280	627
A2 Oesophagus (150)	857	.	.	57	218	230	504	.	.	58	152	142	353
A3 Stomach (151)	713	.	1	86	202	181	471	.	.	52	103	87	242
A4 Colorectal (152,153,154)	445	.	.	71	65	117	253	2	.	48	47	95	192
A5 Liver (155)	220	1	4	22	76	52	156	4	.	14	23	22	64
A6 Pancreas (157)	124	.	.	11	32	35	78	.	.	8	18	19	46
A7 Lung (162)	561	.	1	65	207	200	474	2	.	13	32	39	86
A8 Melanoma and other skin (172-173)	18	.	.	2	4	3	10	.	.	2	4	2	8
A9 Breast (174)	609	.	.	.	.	.	.	.	.	217	260	131	609
A10 Cervix (180)	958	.	.	.	.	.	.	.	.	292	477	189	958
A11 Corpus uteri (179,181-182)	46	.	.	.	.	.	.	.	.	5	19	22	46
A12 Ovary (183)	206	.	.	.	.	.	.	4	.	93	62	47	206
A13 Prostate (185)	194	.	.	2	39	153	194	.	.	.	.	.	.
A14 Bladder (188)	107	.	.	9	25	50	85	2	.	2	6	12	22
A15 Lymphoma (200-202)	447	23	75	98	42	70	308	25	5	34	23	53	140
A16 Leukemia (204-208)	557	41	133	87	22	41	325	121	18	55	14	24	233
B Other neoplasm (210-239)	801	21	38	73	46	21	198	58	413	86	27	18	602
C Diabetes mellitus (250)	1 868	.	.	218	312	308	840	.	.	188	397	442	1,028
D Nutritional/endocrine (240-285, minus 250)	18 265	5 693	579	2,376	346	183	9,183	5 867	711	1,776	455	274	9,082
D1 Protein-energy malnutrition (260-263)	5 552	2,531	32	45	9	11	2,629	2 803	63	29	5	25	2,923
D2 Iodine deficiency (243)	1 098	641	25	31	8	4	713	613	31	34	4	3	685
D3 Vitamin A deficiency (264)	4 109	2 085	.	.	.	.	2,085	2 024	.	.	.	.	2,024
D4 Anaemias (280-285)	4 469	252	506	895	216	102	1,971	214	712	1,182	252	138	2,497
E Neuro-psychiatric (290-359, minus 320-322)	17 837	823	1,730	4,511	1,331	1,032	9,426	1 085	1,450	4,350	726	799	8,411
E1 Major affective disorder	3 089	.	.	916	118	33	1,066	.	.	1,733	228	62	2,023
E2 Bipolar affective disorder (296)	208	.	.	94	11	3	107	.	.	87	10	3	101
E3 Psychoses (295, 291-294,297-299)	2,132	.	2	937	36	21	995	.	3	1,108	8	18	1,137
E4 Epilepsy (345)	2,280	190	628	394	90	29	1,331	155	434	303	40	17	949
E5 Alcohol dependence (303)	1,904	.	.	932	514	218	1,664	.	.	133	75	32	240
E6 Alzheimer & other dementias (330-331,333-336,290)	1,951	61	62	31	257	569	981	109	46	27	230	558	970
E7 Parkinson disease (332)	148	.	.	.	31	50	82	.	.	.	27	38	66
E8 Multiple sclerosis (340)	266	.	1	100	25	9	136	.	2	102	16	9	129
E9 Drug dependence (304)	647	.	24	394	49	12	479	.	8	140	16	3	168
E10 Post traumatic stress disorder	838	12	88	207	17	3	327	19	141	321	26	4	511
F Sense organ (360-389)	2,384	62	10	120	624	422	1,238	82	18	97	570	378	1,146
F1 Glaucoma-related blindness (365)	398	.	.	19	165	48	232	.	.	.	118	49	166
F2 Cataract related blindness (366)	1 813	10	.	91	458	374	932	9	.	90	452	330	880
G Cardiovascular diseases (390-459)	28 592	682	335	2,540	4,351	6,825	14,732	876	714	1,957	3,194	7,120	13,860
G1 Rheumatic heart disease (390-398)	1,874	14	86	190	152	160	602	24	110	285	395	459	1,272
G2 Ischaemic heart disease (*)	8,142	3	2	543	1,725	2,680	4,953	3	2	162	729	2,293	3,189
G3 Cerebrovascular disease (430-438)	6,248	58	47	352	663	1,632	2,752	69	83	402	784	2,088	3,496
G4 Inflammatory cardiac disease (*)	6,791	374	142	985	1,025	1,099	3,625	560	359	617	658	974	3,168
H Chronic respiratory dis (460-519, minus 460-466,480-487)	7 906	1,365	636	668	479	753	3,900	1,815	402	779	486	464	4,006
H1 Chronic obstructive lung dis (490-492,495-496)	1,702	108	38	50	237	541	974	115	32	48	237	296	728
H2 Asthma (493)	1,719	77	337	316	84	36	850	81	266	366	112	44	869

Table 3: Disability-Adjusted Life Years (DALYs, In Thousands): India (Continued)

Disease or injury (ICD 9 code)	Both sexes all ages	Males						Females					
		0-4	5-14	15-44	45-59	60+	All ages	0-4	5-14	15-44	45-59	60+	All ages
I Diseases of the digestive system (520-579)	11,240	1,619	281	1,657	1,298	751	5,607	2,822	496	1,096	742	478	5,634
I1 Peptic ulcer disease (531-533)	992	5	12	329	207	85	637	7	12	180	107	50	355
I2 Cirrhosis of the liver (571)	2,690	32	25	691	765	335	1,848	48	50	315	297	132	842
J Genito-urinary (580-629)	3,932	195	375	307	606	401	1,884	135	253	568	484	464	2,048
J1 Nephritis/nephrosis (580-589)	2,101	61	337	226	222	196	1,041	43	301	307	177	172	1,060
J2 Benign prostatic hypertrophy (600)	371	.	.	.	296	74	371	.	.	.	.	.	.
K Skin disease (680-709)	247	37	9	14	4	14	77	50	8	74	2	36	170
L Musculo-skeletal system (710-739)	1,253	7	41	188	89	80	405	28	48	429	197	129	849
L1 Rheumatoid arthritis (714)	216	.	.	87	10	6	102	.	.	81	26	6	113
L2 Osteoarthritis (715)	432	.	.	57	52	14	122	.	.	166	116	28	310
M Congenital abnormalities (740-759)	9,434	4,524	159	153	3	4	4,843	4,196	182	209	19	2	4,590
N Oral health (520-529)	1,813	20	34	535	187	157	934	19	32	489	185	155	879
N1 Dental caries (521.0)	324	20	34	69	25	19	167	15	32	63	24	18	157
N2 Periodontal disease (523)	1,104	.	.	466	75	33	574	.	.	426	73	32	530
N3 Edentulism (520)	384	.	.	.	87	106	192	.	.	.	87	105	192
M Injuries (E800-999)	26,727	2,773	3,859	6,768	1,013	363	14,775	3,164	3,268	4,756	513	251	11,952
A Unintentional (E800-949)	23,134	2,696	3,679	5,038	892	336	12,640	3,138	3,113	3,560	456	228	10,494
A1 Road traffic accidents (E810-819, 826-829)	3,252	205	355	1,492	193	62	2,308	264	347	332	40	22	945
A2 Poisoning (E850-869)	288	50	34	104	19	4	211	27	31	17	.	.	77
A3 Falls (E880-869)	4,996	914	833	811	242	85	2,887	1,148	590	173	109	89	2,109
A4 Fires (E890-899)	1,557	508	125	47	18	13	710	292	365	178	6	7	847
A5 Drowning (E910)	1,729	182	380	292	31	11	897	217	302	273	31	10	832
A6 Occupational (*)	893	.	.	418	84	4	506	.	.	340	45	2	387
B Intentional (E950-969,990-999)	3,593	77	180	1,730	121	27	2,136	26	155	1,196	57	23	1,457
B1 Self-inflicted (E950-959)	2,189	.	116	915	63	16	1,111	.	144	900	28	6	1,078
B2 Homicide and violence (E960-969)	1,105	52	47	661	51	10	821	.	.	243	25	16	285
B3 War (E990-999)	299	26	17	153	7	.	204	26	11	53	4	.	95
Population (in millions)	849.5	59.8	101.8	200.5	47.6	29.8	439.4	56.7	95.3	183.2	46.0	28.9	410.1

Notes

A dash (-) symbol indicates less than 1,000 DALYs

* ICD 9 codes for ischaemic heart disease are as follows: 410-414, 440.9 plus: at ages 45-59: 50% of 427.1, 427.4, 427.5, and 33% of 428; at ages 60+: 80% of 427.1, 427.4, 427.5 and 50% of 428

* ICD 9 codes for inflammatory cardiac diseases are as follows: 420, 421, 422, 425 plus: at ages 0-44: 50% of 428; at ages 45-59: 25% of 428; at ages 60+: 20% of 428

* There are no established ICD 9 codes specific for occupational injuries.
Estimates have been based on reported occupational injuries and deaths tabulated by the International Labour Organisation

HEALTH SECTOR DEVELOPMENT PROGRAM

GAUTAM BASU

[illegible]
[illegible]
SECRETARY TO GOVERNMENT
HEALTH AND FAMILY WELFARE
DEPARTMENT

[illegible] : 2250??9
FAX : 2204164
[illegible] : [illegible] : [illegible]
TEL : OFFICE : 2250324

[illegible]
[illegible]
[illegible]
MULTISTOREYED BUILDING
III STAGE, FIRST FLOOR
DR. B. R. AMBEDKAR VEEDHI
BANGALORE-560 001

DO No.HFW 61 HS 96

DATED 13-2-1996

Mr. Heinz Vergin,
Director India Department,
The World Bank,
Washington D.C.

Sir,

Sub: Health Sector Development Programme in the Karnataka Health System Project.

** **

Government of Karnataka have proposed to IDA a project for the development of Health Systems in Karnataka with special focus on the secondary and referral hospital upto the district level. In this connection, I have pleasure in conveying the approval of the Government for a programme-matrix for Health Sector Development in the State, a copy of which is enclosed for your perusal and reference.

Yours faithfully,

(GAUTAM BASU)

19/2/96

Encl: As above.

Copy to Shri B. K. Bhattacharya, Addl. CS and Principal Secretary to Government, Finance Department, Vidhana Soudha, Bangalore.

(GAUTAM BASU)

HEALTH SECTOR DEVELOPMENT PROGRAM

Karnataka

Issue	Effect	Proposed Change or Action
1. Adequacy of the overall size of the health budget to meet public health goals.	The share of the health and family welfare sector is about 6.43% of the state revenue budget and 1.29% of GDP in 1993/94. These health expenditures are inadequate to provide essential primary health care together with a basic package of clinical/curative services.	Recognizing the link between basic public health provision and poverty alleviation, the Government will ensure that, in each fiscal year, during implementation of the project, the share of overall budget (plan and non-plan), excluding all projects specifically financed either through external assistance or by way of loan from national financial institutions or by way of grant/loan from Government of India as per award of Tenth Finance Commission, allocated to the health sector shall be maintained at least at the level allocated in FY94/95.
2. Imbalances in public expenditure between different levels of the health sector.	With increasing expenditure on tertiary level health care, there has been a relative decline in the investment in primary and secondary level facilities. This imbalance needs correction	The state Government recognizes the need for focusing attention on the primary and secondary levels of health care and also to step up allocations for these levels. A major portion of the increased allocation will go to the primary and secondary levels.
3. Redressing regional imbalances.	The six districts of Gulbarga, Bidar, Bijapur, Raichur, Dharwad and Bellary show poor health indicators due to uneven development in the health infrastructure and delivery of services.	Through both project as well as non-project interventions, a policy of positive discrimination in favor of the underdeveloped districts and tribal areas within advanced districts will be followed to reduce the existing imbalance. This differential policy is already under implementation. Additional resources are being provided out of the state's own funds for filling critical gaps in primary health care.
4. Quality of and access to hospital services.	Quality of medical services are inadequate. In addition, access to health care services is limited,	Quality and access will be improved by: (i) upgrading and expanding physical capacity; (ii)

HEALTH SECTOR DEVELOPMENT PROGRAM

Karnataka (continued)

Issue	Effect	Proposed Change or Action
	especially for populations in the least developed areas of the state, particularly women, scheduled castes and scheduled tribes.	upgrading clinical effectiveness and quality of services at community, talauka and district hospitals; (iii) improving the referral system; and (iv) adopting staffing and technical norms in line with the recommendations of the high level committee. In respect of scheduled caste and scheduled tribes, access will be improved through a system of health cards and annual health check-ups. Patients below the poverty line who cannot afford high cost treatment for serious ailments such as oncologic and cardiac disorders, will be assisted through a specially constituted society, to be financed by the state Government.
5. Strategic planning.	Inadequate strategic planning capacity in the health sector has resulted in sub-optimal use of resources. Decisions on public health spending priorities presently do not take into full consideration the size and scope of services provided by private, commercial and voluntary sectors, the health manpower supply situation and the predicted future epidemiological profile in Karnataka.	The capacity for strategic planning will be enhanced through establishment of a Planning Cell directly reporting to the Secretary Health and Family Welfare. This will, either independently or through sponsored specific research projects: (i) study the role of the private sector; (ii) review the suitability of present regulations; (iii)study the evolving epidemiological profile in Karnataka; (iv) monitor the burden of disease and recommend cost-effective means for achieving the best use of limited resources; and (v) undertake periodic review of the health manpower supply situation and training needs in the state. A study of the scope and prospects of enlisting private sector support for promotion of health care at primary and secondary levels will be

HEALTH SECTOR DEVELOPMENT PROGRAM

Karnataka (continued)

Issue	Effect	Proposed Change or Action
		undertaken.
6. Workforce.	Improvement of services at hospitals is significantly restricted by workforce problems, both in terms of quality and quantity. The number of staff sanctioned at hospitals does not fit current needs. There are many vacancies due to poor and cumbersome recruitment procedures, and unimaginative personnel policies. The distribution of medical specialists is not commensurate with the need (e.g., a general surgeon in place of an Obstetrician and Gynecologist).	No ban on recruitment will be imposed with regard to recruiting medical, paramedical and technical staff. In a short period the problem of mismatching in medical staff will be solved. The practice of deputing staff to non essential assignments will be put to an end. Doctors will be recruited on contract where direct recruitment is slow. Doctors will also be asked to serve a mandatory period of six years in rural areas before being considered for postings at more preferred places. Since there is a large number of lady doctors' vacancies, participation by private lady doctors in government facilities will be encouraged.
7. The role of the private sector and voluntary organizations.	The health services development strategy of the Government has not taken sufficient account of the scope and coverage of non-Governmental providers and the role of this sector in delivering quality health care.	Legislation will be introduced to regulate all medical institutions. Services offered in the private sector would be continuously monitored, with a view to improving the quality of such services. Referrals between private primary care and public secondary care, diagnosis and treatment would be encouraged through district health committees.
8. Role of the NGO sector.	NGO participation in health care at all levels, especially at the levels of public health and first referral, needs to be supported and encouraged, with a special focus on the backward and remote regions of the state.	The Government will take initiative in enlisting the effective participation of NGOs in the area of primary and first referral health care. In remote tribal and backward districts, NGOs will be encouraged to operate some government facilities so as to ensure the outreach of health

HEALTH SECTOR DEVELOPMENT PROGRAM

Karnataka (continued)

Issue.	Effect	Proposed Change or Action
		services to the disadvantaged sections of the people. NGO participation will also be encouraged in special programs for the socially underprivileged, as also in IEC activities.
9. Cost sharing and service improvements.	Cost sharing has not been properly implemented, resulting in low levels of funding for supplies, operations and maintenance.	The Government will set up a working group to examine the issue of cost sharing (last revised in 1988) while protecting the poorest sections of society. The guiding principle for cost sharing would be to partly cover non salary recurrent costs. In addition, adequate administrative and organizational mechanisms for implementing schemes for cost sharing would be put in place. A mechanism to give back a major portion of revenues raised by the institution will be introduced.
10. Prevention and control of major communicable diseases.	The existing surveillance system is very weak, especially at the secondary level and in urban areas.	The project will establish an effective surveillance system which will contribute to reducing morbidity and mortality rates due to major communicable diseases.
11. Contracting services.	Contracting services are under-utilized.	DOHFW will monitor the cost-effectiveness and quality of existing contracted services. Furthermore, the Government will consider new proposals for contracting-out health services, especially support services such as laundry, cleaning, manufacturing I.V. fluids, etc.
12. Safeguarding the operations and maintenance component of the health budget.	The existing secondary hospitals face operational deficiencies and function poorly due to a lack of non-salary recurrent funds.	The state Government will make adequate provision in the health budget for drugs and other medical supplies, and for maintenance of equipment and buildings.

HEALTH SECTOR DEVELOPMENT PROGRAM

Karnataka (continued)

Issue	Effect	Proposed Change or Action
13. Consolidation versus expansion of institutions.	The state Government has been rapidly expanding the number of subcenters, PHCs, CHCs, taluka level hospitals, and sub-district hospitals without focusing on improving the physical facilities in existing institutions.	Further expansion of beds and hospitals will be strictly need-based, and will be undertaken only after ensuring that existing facilities are properly maintained and utilized.
14. Poverty alleviation.	About 40% of households are below the poverty line in Karnataka. In this group, health indicators such as mortality and morbidity rates, are especially adverse.	The investment made in this project, especially through special programs for the disadvantaged section (e.g., SC/ST and women) will aim at augmenting the productivity/earning potential through better health status.

HEALTH SECTOR DEVELOPMENT PROGRAM

PSCM/96/402

[illegible] Partap Singh Sahi
IAS
Tel. No. [illegible]
[illegible]

15-2-1996

Subject: **Punjab Health Sector Development Program**

Dear Mr.Heinz Vergin,

The Government of Punjab and the Punjab Health Systems Corporation have proposed to the IDA to assist the State Health Systems Development Project II. I am pleased to send you in this connection the attached Policy Matrix reflecting Government decisions in respect of health policy reform.

With regards,

Yours sincerely,

(G.P.S.Sahi)

Mr.Heinz Vergin
Director, South Asia Country Department II,
The World Bank,
Washington D.C.

HEALTH SECTOR DEVELOPMENT PROGRAM

Punjab

Issue	Effect	Proposed Change or Action
1. Increase the overall size of the health budget.	Expenditure on health and family welfare in Punjab is 5.31% of the state revenue budget and 0.88% of NDP in 1993/94. These health expenditures are inadequate to provide essential primary health care together with a package of curative services.	Recognizing the link between the provision of basic health services and poverty alleviation, the state Government will ensure that in each fiscal year during implementation of the project, the share of overall budget (plan and non-plan), excluding all projects specifically financed either through external assistance or by way of loan from national financial institutions, or by way of grant/loan from the Government of India as per award of Tenth Finance Commission, allocated to the health sector, shall be maintained at least at the level allocated in FY94/95.
2. Allocate most of the incremental funds for the health sector to primary and secondary levels of care.	Primary and secondary levels of health care have not been receiving the requisite allocation of funds. This has resulted in a shortage of drugs, machinery equipment, other materials and supplies, lack of proper buildings and poor maintenance of facilities. Imbalance in the allocation of funds has led to duplication of services and inefficient utilization of meager resources.	Punjab state, pursuant to the health sector reforms, will ensure that within the allocations for the health sector, the share of resources for primary and secondary levels of health care shall be increased in each fiscal year until FY02.
3. Safeguard the operations and maintenance component of the health budget.	The existing secondary level hospitals function poorly because of inadequate allocation of funds for operational and maintenance purposes (30%-35%). 65-70% of the current budget goes to the salary component.	Taking into account the budgetary provision, the state Government and Punjab Health Systems Corporation will maintain sufficient funds in the non-plan health budget for making available adequate supplies of drugs and other material supplies at secondary level hospitals, and for maintenance of equipment and buildings.

HEALTH SECTOR DEVELOPMENT PROGRAM

Punjab (continued)

Issue	Effect	Proposed Change or Action
4. Service improvements and user charges.	Most of the services in public health institutions are provided free of cost. Nominal charges are levied on only a few services, and revenue collected is deposited in the government treasury. The low level of funds normally available is inadequate for supplies, operations and maintenance.	The Government would issue regulations to facilitate Punjab Health Systems Corporation to levy charges for certain services. These include paying beds, diagnostics and drugs and a registration fee for inpatients. Existing systems for identifying the poor (i.e., yellow card holders) will be applied to exempt them from paying charges and an out-patient department purchee fee. The user fees would be used specifically for non-salary cost purposes, as high proportions of funds collected through user charges would be retained at the point of collection. Adequate administrative and organizational mechanisms for collecting user charges would be put in place.
5. Private provision of health care services and the role of the private sector.	The health services development strategy of the Government has not taken into account the scope and coverage of health services provided by the private sector. Therefore, the Government is inhibited in prioritizing and rationalizing its investment in the public health sector.	The role of the private sector would be continuously monitored; the quality of services provided by private practitioners would be assessed and regulations relating to improvements in service quality would be formulated. In addition, referrals between private primary care and public diagnosis and treatment would be encouraged The Nursing Home Registration Act would be implemented after its approval by the Legal Department. In order to enable the private and voluntary sector to contribute effectively in providing health facilities, the state Government will encourage investment for the establishment of health care

HEALTH SECTOR DEVELOPMENT PROGRAM

Punjab (continued)

Issue	Effect	Proposed Change or Action
		institutions in the private and voluntary sectors. Private sector investment would be expanded. Dialogue has already been initiated with the Housing Department and local Government in this regard.
6. Contract out selected services, especially supporting services.	At present, hospital support services must be maintained by regular staff recruited for this purpose. These employees have not provided an efficient provision of support services, resulting in unclean hospitals, poor maintenance and upkeep of hospital bedding, clothing, linen, furniture, etc.	Cost-effectiveness and quality of existing services in hospitals will be monitored. After review as appropriate, proposals for contracting out selected services, especially support services, will be considered. These include laundry, canteen, landscaping, dietary services, sanitation and security.
7. Establishment of a Strategic Planning Cell.	Inadequate strategic planning in the health sector has resulted in an ineffective utilization of resources. Earmarking of funds for various health schemes and programs at various levels of health care presently does not take into full consideration the size and scope of services provided by the voluntary and private commercial sectors; the availability of existing manpower and its development; and the emerging epidemiological profile in the state of Punjab.	The state Government will establish modern management information systems to upgrade performance in health institutions with regard to (a) medical and health care; (b) inventory control; (c) performance appraisal; and (d) financial management. Appropriate technology will be suitably introduced in the DOHFW and in the Corporation. Strategic planning in the health sector will be strengthened by establishment of a Strategic Planning Cell in the Department. This cell will be provided with a Management Specialist, Economist (with experience in health sector economics), Public Health Specialist, Computer Specialist and minimum administrative staff. (Requirement 25 lakhs for 3 years.) This cell will, in addition to working for intra- sectoral and inter-sectoral coordination, either

HEALTH SECTOR DEVELOPMENT PROGRAM

Punjab (continued)

Issue	Effect	Proposed Change or Action
		independently or through specific research activities, monitor the role of the private sector; formulate the regulations relating to quality of care to be provided by the private sector; analyze the evolving epidemiological profile in the state; monitor the disease pattern and suggest the cost-effective means for achieving the desired objective within the limited resources. The Planning Cell will also undertake periodic review of manpower availability and training needs for its development.
8. Surveillance system for the major communicable diseases.	In the absence of a properly developed surveillance system, it is not possible to achieve, control, eliminate or eradicate some of the diseases which are possible only within a well developed surveillance system.	The existing system for surveillance of some diseases will be developed to ensure proper and systematic flow of information about major communicable diseases according to priorities of the state from most peripheral level to the state headquarters and also to the Government of India. The surveillance system proposed to be developed will ensure flow of information from the village level through functionaries of the Health Department to the PHC; from PHC/CHC to the district level and then to the state headquarters. Action as considered appropriate will be taken at the PHC/CHC level, district level and at state level. Prompt investigation and containment of outbreaks will form a part of such a system. It will help in the control, elimination and eradication of some of the diseases as per commitment of the sstate with Government of India.

HEALTH SECTOR DEVELOPMENT PROGRAM

Punjab (continued)

Issue	Effect	Proposed Change or Action
9. Gender issues.	The sex ratio in Punjab is 882 females per 1000 males as against the national average of 927 females per 1000 males. The state Government is determined to reverse this trend. For this purpose, apart from strictly regulating the practice of pre-natal diagnostic techniques for medical termination of pregnancy, an incentive scheme for those adopting terminal method of sterilization after one or two female children will be implemented.	For the last three years, activities promoting the value of the girl child have been organized at the village level. Slogans have been coined in the regional language (punjabi) upholding the status of the girl child.

Smt. L. Chakrabarti,
Principal Secretary
Department of
Health & Family Welfare
Government of West Bengal
Phone : 23-8041 Extn. 786
28-8083

সচিব
স্বাস্থ্য ও পরিবার কল্যাণ বিভাগ
পশ্চিমবঙ্গ
কলিকাতা ৯৯

Calcutta, the 8th Feby. 1996.

No. H/P-30/96.

To
Mr. Heinz Vergin,
Director India Department,
The World Bank,
Washington D.C. (Fax No. 20204776391)

Subject : West Bengal Health Systems Development Project-II.

Sir,

The Government of West Bengal have proposed to IDA a Project for the development of Secondary Level Hospital Services in the State. I am sending herewith a Matrix reflecting Government decisions in respect of different issues on health sector reform.

Yours faithfully,
Smt. L. Chakrabarti. 8.2.9.

No. H/P-30/96/1. Dated, Calcutta, the 8th February, 1996.

Copy forwarded to Mr. Tawhid Nawaz, Senior Economist, Population & Human Resources Divn., India Country Department, The World Bank, Washington D.C. (USA), for favour of information.
(Fax No. 2024770397)

(L. Chakrabarti) 8.2.9
Principal Secretary.

HEALTH SECTOR DEVELOPMENT PROGRAM

West Bengal

Issue	Effect	Proposed Change or Action
1. Adequacy of the overall size of the health budget to meet public health goals and development of a state-wide referral system.	Allocation to public health and medical care is about 6.1% of the state revenue budget and about 1.10% of the GDP in 1994/95. These budgetary allocations are not enough to improve the performance of the health care system through improvements in quality, effectiveness and coverage of health care services at the first referral level and selective coverage at the primary level.	Keeping in view the close connection between allocations in the public health sector on the one hand and poverty alleviation and enhancement of productivity in the economy on the other, the Government will ensure that in each fiscal year during implementation of the project, the share of overall budget (plan and non-plan), excluding all projects specifically financed either through external assistance or by way of loan from national financial institutions or by way of grant/loan from the Government of India as per award of Tenth Finance Commision, allocated to the health sector, shall be maintained at least at the level allocated in FY94/95.
2. Inadequate allocation for primary and secondary level health care services in the state budget.	Though the expenditure on improvement of overall health care services have been increasing, investment in primary and secondary level health care services is inadequate to meet the requirement.	The Government will ensure that the share of primary and secondary levels of health care services out of total resources (plan and non-plan) allotted to the health sector shall be increased each year throughout the life of the project.
3. Management of construction and maintenance.	Existing primary and secondary level health care facilities face operational difficulties and function poorly, due to insufficient non-salary recurrent funds. At present, DOHFW does not have much control over certain essential operational activities, such as civil construction and maintenance.	The Government will make adequate provision in the health budget for operations, maintenance, drugs and other medical supplies and for maintenance of equipment and buildings. The Government will strengthen the role of the Health Department by providing autonomy in managing essential operational activities such as civil works, construction and maintenance.

HEALTH SECTOR DEVELOPMENT PROGRAM

West Bengal (continued)

Issue	Effect	Proposed Change or Action
4. Management.	Management of health care facilities in the state, particularly at the secondary level, is inadequate despite recent attempts for its improvement.	Management of district, sub-divisional, state general and rural hospitals will be strengthened and implementation capacities improved by: (i) augmenting/strengthening the administrative structure, (ii)improving systems and procedures, (iii) decentralizing administrative and financial powers, (iv) training, and (v) improving IEC and MIS.
5. Inadequate health care services in remote and rural areas.	Poor health indicators have been recorded in the riverine areas of the Sundarbans. This is due largely to inadequate health care services and facilities in the region.	A separate project component to meet the basic health services in the Sundarbans has been proposed (see Annex 16).
6. Strategic planning.	Inadequate strategic planning activity has resulted in sub-optimal utilization of existing resources.	The capacity for strategic planning will be enhanced through the establishment of a Strategic Planning Cell under the chairmanship of the Secretary, DOHFW. This Cell will: (i) initiate independent research projects, (ii) study the role of the private sector, (iii) review the suitability of present regulations, (iv) analyze the burden of disease and recommend cost-effective medical interventions, (v) undertake the study of the scope and prospect of a health insurance scheme, and (vi) undertake a periodic review of the training and manpower supply situation and the clinical needs in the state.
7. Workforce issues.	While there is no overall shortage of staff in the health sector, there remains the problem of availability of medical	For manning health centers and hospitals in remote/rural areas, the Government will consider hiring the services of medical

HEALTH SECTOR DEVELOPMENT PROGRAM

West Bengal (continued)

Issue	Effect	Proposed Change or Action
	professionals in certain important skills. Rural hospitals in particular experience shortages of medical officers because of the lack of adequate facilities and incentives.	professionals on a contract basis. Special incentives for doctors in rural areas, including housing, in-service education programs, etc. will be implemented during the project period.
8. Role of the private and voluntary sectors.	Traditionally, the activities of the private sector in providing health care services in the state have been limited and restricted mainly to Calcutta and its suburbs. Of late, there has been some increase in the number of private hospitals, but the charges are high and out of the reach of the common man.	The Government proposes to enhance collaboration with both private and voluntary sectors wherever feasible in delivering quality health services.
9. User charges.	At present only 50% of incremental charges are channeled back to the hospitals, with the exception of rural hospitals. The mechanism for user fee collection and use has not bee effectively implemented, resulting in a time-lag in utilization of funds collected towards maintenance, supplies and operation.	User fees were last reviewed in February, 1995. The Government has set up a committee to examine the scope and coverage of hospital charges for different categories of diagnosis, treatment and admission. Exemption from payment of such charges will continue to be granted to families with a monthly income of Rs. 1500 or less. This will be done through the issuance of indigent certificates. 100% of charges collected will be retained at the district level. The Government has developed a suitable mechanism under which funds collected from user charges will be retained in a separate account to be operated at the district level and allocated to the hospital within the district on the basis of need and level of revenue collection.
10. Contracting out services.	At present, contracting out services is limited and there is scope for its expansion.	While steps have been taken to ensure optimal utilization of facilities, the Government has

HEALTH SECTOR DEVELOPMENT PROGRAM

West Bengal (continued)

Issue	Effect	Proposed Change or Action
		decided where necessary to contract out services like dietary, transport/ambulance, laundry and cleaning services as well as services relating to waste management to ensure cost-efficiency and quality.
11. Enhancing the quality of private health care services.	The quality of health care services provided by the private and non-government sector is of uneven quality and there is a need to ensure minimum standards of services.	The role of both private and non-government sectors would be continuously monitored, the quality of services provided by them would be assessed, and regulations relating to service quality would be extended. The existing Clinical Establishment Act of 1950 and the Rules of 1951 would accordingly be reviewed and amended as necessary.
12. Poverty alleviation.	About 30.3% of the rural population and 20.7 of the urban population (combined 27.6% of the total population) of the State live below the poverty line. Furthermore, despite some welfare programs taken up recently, women and SC/ST populations in the state continue to be in a somewhat disadvantageous position.	Investment made in this project will contribute to poverty reduction by improving the productivity and earning potential of disadvantaged groups.

PUBLIC EXPENDITURES ON THE HEALTH SECTOR

1. The purpose of this appendix is twofold. First, it presents the past trends in selected aspects of public finances in general and expenditures on health and family welfare services in particular in the three project states of Karnataka, Punjab and West Bengal. As part of the exercise, total health expenditures have been disaggregated and re-classified by level of service. This analysis then forms the base for a limited exploration of the burden of the incremental recurrent recurrent costs of the project for each state, the resulting shifts in the structure of health expenditure and the conditions for financial sustainability.

State Finances

2. Trends in the level and composition of public expenditures on health and family welfare should be seen against the backdrop of the overall developments in state government finances - both prior to the economic and fiscal crises of 1991/92 and during the period of adjustment. Through the 1980s, overall state government revenues grew at a slower rate than expenditures leading to the emergence of revenue deficits and the growth and changing composition of fiscal deficits. In the more recent period, state finances have been influenced both by the nature of macroeconomic adjustment, which affects overall tax revenues, and by fiscal adjustment by the Central government which has affected the size of the Central government's transfers to states, in particular the grant component.

3. The combined gross fiscal deficit of the states was equal to 3.0 percent of GDP in 1986/87 and to 3.2 percent in 1993/94 Calculations of individual state deficits as a proportion of their own state domestic product suggest that for the eleven most populated states the average increased slightly from 4.2 to 4.3 percent between 1990/91 and 1994/95. Differences between states, however, are quite substantial. Table 1 presents the data for the three project states, Karnataka, Punjab and West Bengal from 1990/91 to 1993/94. In each, the deficit has fallen as a share of state income but it has been significantly higher in Punjab than in either West Bengal or Karnataka.

Table 1: Gross Fiscal Deficit as Proportion of State Domestic Product
Project States 1990/91 - 1993/94

	1990/91	1991/92	1992/93	1993/94
Karnataka	-5.2	-5.5	-4.7	-3.7
Punjab	-8.5	-6.5	-6.3	na
West Bengal	-6.0	-4.2	-3.4	-3.8

Note : Measurement of state domestic product may differ slightly between states. This may affect comparisons between states but not trends within states. No estimate of SDP for Punjab in 1993/94 is available.

4. The gross fiscal deficit largely reflects the combined balances in the revenue and capital accounts. Between 1980/81 and 1986/87 a deficit on the aggregate states' revenue account occurred in only one year. Since then, deficits have occurred in each year. Although trends in the revenue deficit are unfavorable for all states combined, the position of individual states again is far from uniform. Karnataka has had relatively small revenue deficits in recent years and estimates for 1993/94 suggest a small surplus (Table 2). As a percentage of Net State Domestic Product (SDP), the revenue deficit/surplus was -0.6% in 1991/92 and +0.6% in 1993/94. Punjab has had more substantial revenue deficits, both in absolute terms and as a share of SDP. In 1991/92 and 1992/93, they were equal to -2.4% and -2.2% of SDP respectively. The revenue deficits of West Bengal have also increased since 1989/90 though not to the extent as in Punjab.

Table 2: Revenue Deficit as Proportion of State Domestic Product
Project States 1980/81 - 1993/94

	1980/81	1985/86	1989/90	1990/91	1991/92	1992/93	1993/94
Karnataka	+1.0	-0.8	-0.8	-0.4	-0.7	-0.6	+0.6
Punjab	+0.4	+0.1	-1.5	-3.3	-2.4	-2.2	n.a.
W. Bengal	-0.3	+0.5	-1.8	-3.2	-1.8	-1.6	-2.1

Note: SDP figures taken from State Directorates of Economics and Statistics; Karnataka SDP figures from 1990/91 onwards supplied by Govt. of Karnataka.

Source: Reserve Bank of India Bulletin (various issues).

5. As a consequence of increased revenue deficits in general, the nature of the fiscal deficit, and hence the borrowing requirement, has changed. Whereas, previously, borrowing had been required only for covering deficits in the capital account, by 1994/95 over a quarter of the borrowing was to cover deficits in the revenue account. This indicator is particularly revealing of the financial health of state governments, since it represents the pre-emption of borrowed funds for meeting current expenditures. In Punjab, the revenue deficit contributed over 50% of the GFD in 1992/93 and was budgeted to be about 34% in 1994/95. In West Bengal, the revenue deficit was 43% of GFD in 1992/93 and was scheduled to rise to over 62% in 1994/95. In Karnataka, the revenue deficit was 12 percent of the GFD in 1992/93 but made no contribution to the fiscal deficit in the following two years.

6. Of the three states, the overall state finances of West Bengal and Punjab seem to be most precarious. Karnataka has a relatively comfortable budgetary position compared to the two other states. Some further consideration is given to these issues in the final section of the annex.

Trends in Expenditure on Health and Family Welfare

7. In all three project states, government health and family welfare expenditures are well below the international norm that is considered adequate to meet public health priorities (World Development Report 1993); and below the levels required to achieve the service norms set by the Government of India (India : Policy and Finance Strategies for Strengthening Primary Health Care Services). Punjab spends less than 0.9% of state domestic product (SDP), Karnataka about 1.3% and W. Bengal about 1.1% (Table 3). In addition, compared to the early and mid 1980s the shares have declined in two of the three states. The decline has been especially steep in West Bengal, where health expenditures fell from around 1.5% of SDP in 1980/81 to 1.0% in 1992/93; and is estimated to be about 1.16% in 1993/94. In Punjab, the share dropped from around 1.1% of SDP in 1980/81 to 0.9% in 1992/93. In Karnataka, the share is back at the same level as in the early 1980s (at around 1.3% of SDP).

Table 3 : Expenditures on Health and Family Welfare as % of SDP

	80/81	85/86	89/90	90/91	91/92	92/93	93/94 R.E.	94/95 B.E.
Karnataka	1.26	1.33	1.25	1.18	1.11	1.29	1.29	1.40
Punjab	1.09	1.00	1.04	0.99	0.91	0.88	n.a.	n.a.
W. Bengal	1.54	1.28	1.17	1.35	1.07	1.03	1.16.	1.10

Note: SDP figures taken from State Directorates of Economics and Statistics; Karnataka SDP figures from 1990/91 onwards supplied by Government of Karnataka.

8. Per Capita Expenditures on Health. Measures of aggregate resources devoted to public sector health programs do not convey the absolute levels of real expenditure per capita (Table 4). Despite the relatively low share of public resources devoted to health in Punjab, real per capita expenditures have been the highest of the three states and have been maintained at roughly the same level since 1980/81 (between Rs. 30-35 per year at 1980/81 prices). Per capita expenditures which were lowest in Karnataka - between Rs 20-25 per year at constant prices during the 1980's have risen since 1991-92 to around Rs. 30. West Bengal displays the most disturbing trend. The fall in real expenditures per capita has become pronounced in recent years (from Rs. 25 per year in 1980/81 and Rs. 26 in 1990/91 to Rs. 22 per year in 1993/94).

Table 4: Per Capita Expenditures on Health and Family Welfare (in 1980/81 Rupees)

	80/81	85/86	89/80	90/91	91/92	92/93	93/94 R.E.	94/95 B.E.
Karnataka	19.00	22.12	26.00	24.12	25.01	27.83	30.20	33.31
Punjab	29.13	31.95	38.06	36.18	34.12	33.60	33.30	31.16
W. Bengal	24.63	21.50	22.36	26.07	21.37	20.99	21.97	20.95

9. Despite these differences between the three states, the per capita expenditures in all three states are low. In 1993/94, per capita expenditure at current prices was Rs. 100 in Punjab, Rs. 90 in Karnataka and Rs. 72 in West Bengal (between US$ 2-3 per capita). These expenditures are well below the norms required for the minimum package of health services as described in the World Development Report, 1993. They are also substantially below the norms set by GOI, which would require a 50 percent increase in budgetary allocations over the current level (India: Policy and Finance Strategies for Strengthening Primary Health Care Services, Grey Cover Report No. 13042-IN, May 15, 1995).

10. Effects of Fiscal Adjustment on Health Budgets. Spending on health and family welfare grew at around 12-13% per annum in nominal terms in the three states between 1980/81 and 1990/91. In real terms, annual growth rates were in the range of 2.8% to 4.4%. Expenditures grew most rapidly in Karnataka, followed by Punjab and West Bengal (Table 5).

11. The consequences of the economic and financial difficulties at the start of the 1990s and the resulting adjustment measures have differed across the three states. In West Bengal and Punjab, expenditures fell in real terms in the first year of adjustment. While there has been a partial recovery in Punjab, the level of

expenditures previously attained in West Bengal have yet to be regained. Expenditures fell by 16% in real terms in 1991/92. Although the growth rate increased in subsequent years, the absolute level of real expenditures in 1993/94 was still below that of 1990/91. In Punjab, the nominal growth rate in 1991/92 was positive, but real expenditures fell by almost 4%. Real growth in subsequent years was very small so that again the level in 1993/94 was (slightly) below that in 1990/91. Karnataka, on the other hand, has sustained high growth rates both in nominal and real terms, resulting in higher real expenditures in 1993/94 when compared to those attained in 1990/91.

12. It would appear, therefore, that the effects of the fiscal crisis and the consequent adjustment measures on the overall budgetary position of Punjab and West Bengal were passed on to the health budget resulting in a decline in real expenditures. Given the relatively low level of expenditures on health particularly in West Bengal, these trends are of concern. Special mechanisms may be required to protect and raise the level of real expenditures on health in these two states.

13. Share of Budgetary Resources Devoted to Health. Health and Family Welfare budgets in the three states generally absorbed less than 10% of the total state revenue budgets throughout the 1980's (Table 6). In each state the share has declined over time suggesting that during the period of adjustment past trends have been exacerbated, rather than reversed. This decline in shares occurred despite the rise in real per capita expenditures in all states up to 1990/91, indicating that total state government expenditures rose even faster than health expenditures. Since 1990, the budget share has increased in Karnataka (from 6.1 to 6.4%), but fallen further in West Bengal (from 8.4 to 7.2%) and in Punjab (from 6.6 to 5.3%).

Table 5: Real Growth Rates in Health Expenditures - Project States 1980/81 -1993/94
(annual in %)

	Karnataka	Punjab	W. Bengal
1980/81-90/91	4.38	4.30	2.80
1991/92	5.66	-3.80	-16.23
1992/93	13.36	0.50	0.41
1993/94 R.E.	10.57	1.12	6.95

Table 6: Share of Health and Family Welfare Sector in Total State Revenue Budget

	80/81	85/86	89/80	90/91	91/92	92/93	93/94 R.E.	94/95 R.E.
Karnataka	7.87	6.53	6.51	6.12	5.96	6.44	6.43	n.a.
Punjab	9.00	7.19	7.76	6.60	4.32	5.78	5.31	n.a.
W. Bengal	12.05	8.90	8.01	8.44	7.32	7.55	7.15	6.10

Composition of the Health Budgets

14. The allocation of spending between primary, secondary and tertiary level facilities and services is not readily available in state budget documents. The approximate shares can be obtained only by reclassifying individual line items. This exercise has been undertaken in varying degrees for each state.

15. West Bengal. The total health budget in West Bengal for the years 1989/90 to 1994/95 has been re-classified under five heads: (i) primary health care, (ii) rural hospitals and dispensaries, (iii) urban health care facilities, (iv) items of general expenditure and (v) medical education (Table 7). Primary care comprises expenditure on public health, family welfare, rural health services (allopathic and non-allopathic) and urban non-allopathic services. Expenditure on Employee's State Insurance has been placed under urban health care facilities since the scheme covers workers in the organised sector of industry, which is mainly located in urban areas.

Table 7 West Bengal: Composition of the Health Budget
(as % of total)

	89/90	90/91	91/92	92/93	93/94	94/95
I. Primary care	**39.66**	**38.19**	**40.30**	**38.55**	**40.53**	**39.24**
MNP	6.40	-	-	-	-	-
Subsidiary centres	1.73	-	-	-	-	-
Other	3.01	1.03	0.008	0.006	0.004	0.004
Rural health serv. (non-allopathic)	1.42	1.02	0.009	0.009	0.009	0.009
Urban health serv. (non-allopathic)	-	0.006	0.007	0.007	0.008	0.009
School health scheme	-	-	-	-	-	-
Public Health	12.42	13.77	13.02	12.25	12.48	12.28
Family Welfare	12.93	12.36	13.38	13.0	14.59	13.09
PHCs	1.73	9.32	11.33	10.92	11.15	11.40
II. Rural Hospitals & Dispensaries	**3.90**	**2.42**	**1.90**	**2.2**	**2.13**	**2.24**
III. Urban facilities	**40.00**	**40.12**	**43.16**	**43.16**	**42.52**	**43.50**
Urban hospitals & Dispensaries	32.49	33.38	35.40	36.67	34.20	34.96
Employees' State Insurance	7.5	6.74	7.75	6.98	8.32	8.54
IV. General	**10.34**	**12.23**	**8.15**	**8.62**	**7.46**	**7.48**
Direction & Admn.	3.15	3.58	3.75	3.85	3.25	3.32
Medical store depots	6.4	5.43	4.03	4.51	3.86	3.81
Other exp.	0.006	3.03	-	-	-	-
V. Medical Education and Training	**6.12**	**7.01**	**6.47**	**7.44** -	**7.34**	**7.52**
Total (Rs. crores)	322.77	445.2	386.96	426.55	502.11	539.46

Source : Govt. of West Bengal, Budget Documents.

16. According to this reclassification, primary health care absorbed around 40% of the health budget in 1989/90 and this share has been maintained subsequently. The share for urban (secondary and tertiary) facilities increased from 40% to 43.5%. The share for medical education and training also rose marginally from 6% to 7.5% in 1994/95.

17. Rural hospitals and dispensaries (the Community Health Centres) have received the lowest share of expenditures and this has been reduced almost by half since 1989/90 (from 3.9% in 1989/90 to 2.2% in 1994/95). Recent sector work has demonstrated that there is considerable underfunding nationally of this segment of the health services in relation to both needs and prescribed norms (India: Policy and Finance Strategies for Strengthening Primary Health Care Services). Moreover, it appears that these services have been under the greatest pressure in recent years.

18. The share of general expenditures has also decreased, from 10% to 7.5%. This is almost entirely due to the reduction in the share for medical stores and depots, which declined from 6.4% to 3.8%. Thus, in addition to rural hospitals, expenditure on drugs and other consumables has also borne the brunt of expenditure contraction during the period of adjustment.

19. In order to determine the broad allocation of resources across different categories of inputs and different levels of hospital services, the composition of non-plan expenditures on hospitals and dispensaries in West Bengal during the last three years was examined. Urban hospitals were divided into two categories, tertiary and secondary. Hospitals in metropolitan centers and speciality hospitals were designated as tertiary, while all district urban hospitals were designated as secondary. The results are presented in Table 8. The level of expenditure on urban secondary and tertiary hospitals is broadly similar. Expenditure on rural secondary hospitals is only one ninth of that on urban secondary hospitals.

20. In urban tertiary hospitals, salaries and wages account for about two-thirds of revenue expenditure. Although there was a slight reduction in 1993/94 (to about 60%), the budgeted share rose to 65% in 1994/95. Expenditure on materials and supplies (including drugs) comprise around 9-10% of the total, although again there was a slight dip in 1993/94. Machinery and equipment absorbed over 5 % of the total in 1992/93 and 4.7% in 1993/94. Expenditure on diet rose from less than 6% to 9%. Expenditure on maintenance has been negligible, but this understates the overall maintenance expenditure on buildings which is included in the budget of the Public Works Department. The remaining share of expenditure is absorbed by overhead costs and by aid to non-government hospitals (about 10% and 3-4%, respectively).

21. The expenditure pattern is broadly similar in urban secondary hospitals, with about 75% going towards salaries. Apparently, expenditure on materials and supplies fell quite dramatically in 1992/93 (to less than 5%), rising to around 9% in subsequent years. Expenditure on machinery and equipment is 2%, while expenditure on diet has increased to about 7%. It would appear that in urban secondary hospitals, the share of salaries was protected with the budget cuts of 1992/93 borne by drugs and consumables.

22. In rural secondary hospitals, the share of materials and supplies fell to 1% of the total in 1992/93, while the share of salaries was 75%. In the following two years, however, the share of salaries and wages was brought down drastically to less than 60%; salary expenditure actually fell in absolute terms, probably indicating that vacancies were not filled. The share spent on materials and supplies rose to over 12%. However, since the absolute expenditures on rural hospitals hardly increased in this period (and real expenditures fell), the rise in the share does not indicate any significant improvement in availability of drugs and consumables though it does indicate an attempt to restore the levels of spending attained earlier.

Table 8 West Bengal: Composition of Spending in Hospitals and Dispensaries 1992/3 - 1994/5 (Rs. Crores)

	Urban Tertiary			Urban Secondary			Rural Secondary		
	92-93	93-94	94-95	92-93	93-94	94-95	92-93	93-94	94-95
Salaries and Wages	66.1	60.1	65.0	74.9	74.5	74.1	75.3	58.3	59.8
Materials & Supplies	10.2	8.7	9.3	4.6	9.5	8.9	1.0	12.7	11.9
Machinery and Equipment	5.2	4.2	4.7	1.2	1.7	2.0	2.8	4.2	4.5
Motor Vehicles	0.2	8.0	0.1	0.3	0.3	0.3	1.0	0.4	0.4
Diet charges	5.9	7.1	8.0	3.2	6.6	6.7	7.9	15.8	15.0
Maintenance	0.03	0.06	0.06	0.02	0.02	0.02	-	-	-
Aid to non-govt. hospitals	2.7	2.8	3.0	0.9	0.9	0.9	-	-	-
Office Exp & Oth.	9.7	9.1	9.9	14.9	6.5	7.1	11.9	8.5	8.5
Total (Rs. crores)	**74.49**	**87.58**	**88.30**	**76.82**	**83.85**	**91.82**	**8.43**	**9.48**	**10.06**

Note: Total refers to Non-Plan spending only. 1993/94 expenditures are revised estimates and 1994/95 expenditures are budget estimates.
Source: West Bengal, Budget Documents.

23. Karnataka. Again, budget allocations were disaggregated and re-classified into functional activities: primary health, family welfare, secondary and tertiary health, medical education and training, and administration. The percentage distributions from 1990/91 to 1994/95 are described in Table 9.

Table 9 Karnataka: Distribution of Health Care Revenue Expenditures by Level of Care 1990/91-94/95 (%)

Function	1990/91	1991/92	1992/93	1993/94	1994/95
Administration	2.6	2.9	2.2	2.2	2.1
Medical Education	9.1	9.8	10.5	8.7	10.1
Secondary & Tertiary	34.3	34.8	32.5	35.9	33.0
Public Health	38.3	34.3	38.4	37.2	37.7
Family Welfare	15.7	18.2	16.4	16.1	17.1

24. Throughout the period, primary health care and family welfare have absorbed around 53 percent of the total health budget. Secondary and tertiary care combined have absorbed between 33 and 36 percent and medical education and training, around 10 percent. The most notable change in shares has been for family welfare. For this activity, nominal expenditures increased by 23 percent a year compared to the lowest growth rate of 16 percent for secondary and tertiary care and 18 percent for primary health care. It is of interest to note that family welfare is a 100% centrally sponsored scheme.

25. Complicating the disaggregation of allocations in Karnataka is the substantial degree of decentralisation to the district councils (Zilla Parishads) While most of the health functions of the councils relate to primary health care and family welfare, they also include community and some district hospitals. From a review of the budgets of one Zilla Parishad from 1990/91 to 1994/95, the share for these facilities appears to have fallen from 23 percent to 5 percent. If this is typical, the rural hospitals in Karnataka have been under severe and increasing pressure similar to the apparent case in West Bengal.

26. Punjab. Health expenditures for Punjab were re-classified under primary, secondary and tertiary health care. Primary care was defined as including primary health centers, sub-centers, services from non-allopathic systems of medicine (apart from teaching), family welfare (apart from MCH, included at the secondary level), disease control programs, drug control, public health laboratories and paramedical training. Secondary care includes MCH, community health centers and district hospitals. Tertiary care covers the teaching hospitals. The composition of health expenditures between these three levels of service is described in Table 10. According to the breakdown, an average of 61 per cent of expenditures are allocated to primary care, 27 percent to secondary and 12 percent to tertiary. Over the five year period, however, some changes have occurred. The shares for primary and tertiary health care have fallen by 5 and 1.5 percentage points respectively while the share for secondary care has increased by 6.5 percentage points.

Table 10 Punjab: Distribution of Health Revenue Expenditures by Level of Care 1990/91 - 1994/95 (%)

Function	1990/92	1991/92	1992/93	1993/94	1994/95
Primary	63.5	60.9	65. 9	56.9	58.4
Secondary	23.0	26.5	21.8	31.8	29.6
Tertiary	13.5	12.6	12.3	11.3	12.0

27. The data prepared for Punjab also allow for some analysis of items of expenditure. For each level of care, salary items dominate. In 1994, salaries absorbed 77, 70 and 67 percent of primary, secondary and tertiary care expenditures. Materials, supplies and equipment absorbed 10, 25 and 18 percent respectively. Over time, there are no clear trends in these distributions.

Project Financial Sustainability

28. The project's financial sustainability depends on the ability and willingness of the state governments both to commit resources for the continuation of project activities at the end of the project period and to support adequately those non-project activities upon which the project activities depend. The level of recurring costs and the level, composition and trend in health expenditure will have an important bearing on financial sustainability. Because of the size of the project in each state, some consideration of the states' overall public finances are required.

29. Karnataka. The incremental recurring costs of the project, including contingencies, at the end of the project period are estimated at Rs. 360 million. In 1994/95, total revenue expenditures in the Department of Health and Family Welfare were Rs. 4,872 million. Since 1991/92 these have been increasing at a real rate of 9 percent a year. Over the previous decade, expenditures rose by 4.4 percent a year. Assuming continuation of the overall trend since 1980/81 (5.2 percent) , expenditures in the year following the end of the project will be around Rs. 6,950 million. Incremental recurring costs of the project will be equal to 5.2 percent of total expenditures of DOHFW and 100 percent of the total trend departmental incremental expenditures in that

year. If the incremental recurrent costs of the project were to be funded in addition to the 'normal' increase this would imply an increased share for health of total government revenue expenditures of around 0.3 percentage points (from a current level of 6.4 percent).

30. In practice, the incremental costs are likely to be met partly through the trend increase and partially through additional resources allocated to the sector. While the incremental project costs are clearly sustainable on the basis on maintenance of past trends in overall departmental expenditure, they would lead to some restructuring of overall health allocations in the absence of a significant proportional increase in expenditures at the secondary health level. (While not all of the project expenditures are for secondary health activities, the majority are. The same is true for Punjab and West Bengal). An approximate calculation of expenditure on secondary health in 1994/95 suggests a total of Rs. 848 million. Projecting this forward to the end of the project period at a real rate of growth of 5.2 percent a year, expenditures would be Rs. 1,209 million. If project incremental expenditures were financed in addition to the trend increase in health allocations, these would add 30 percent to the total expenditures on secondary health and would be equal to over five times the 'normal' increment in that year. (In fact, such a sharp jump would not occur in one year since part of the incremental recurrent cost burden e.g. salaries, will be funded on an increasing basis through the project's life by the state). Assuming no other changes in the composition of health expenditures, the allocation to secondary health would increase from around 17 to 22 percent of the total.

31. Is there any reason to expect that the high growth rates of health expenditures over the past fifteen years cannot be maintained as a result of deterioration in the states overall financial position? The revenue account in 1993/94 was in surplus. The gross fiscal deficit is equivalent to 17 percent of revenues - one of the smallest among the major states. Interest payments on debt accounted for 11.6 percent of total revenue expenditures in 1992/93 rising to 12.7 percent in 1994/95. Public debt was equal to 26.3 percent of state domestic product in 1990/91 and to 27.0 percent in 1994/95. The indicators of public finances in Karnataka show some slight deterioration over the past few years as a result of increased borrowing for capital expenditures but overall demonstrate a picture of reasonable strength.

32. The financial implications of the project for the state government include the necessity to service the loan, as well as the incremental recurring expenditure. Including contingencies the projected loan is Rs. 6,458 million - this represents 4.7 percent of the current outstanding debt of the state government. Given the currently relatively low share of interest payments in total revenue expenditures (second to lowest among the eleven major states) the additional burden arising from this project should be manageable.

33. Punjab. Punjab is India's wealthiest state with per capita income twice that of West Bengal and 1.7 times that of Karnataka. The incremental recurring costs of the project at the end of the project period are estimated at Rs. 150 million. Total expenditure on health in 1993/94 was Rs. 2,202 million. Through the 1980s real expenditures on health increased by an average 4.3% a year. Between 1991 and 1993 real expenditures fell and growth since then has been marginal. Assuming that expenditure growth recovers to 1980s levels, total health expenditures in the year following the end of the project will be Rs. 2956 million. Incremental recurring costs of the project will be equal to 5.1 percent of total expenditures and around 1.2 times the annual addition to departmental expenditure. However, the growth trend in total state government revenue expenditure since 1990/91 has been around 5.5 percent a year. If in the future, the share of health expenditure in total expenditures can be maintained and the latter continue to increase by the recent growth rate of 5.5 percent a year then the total health allocation at the end of the project period would be Rs. 3,203 million with an annual increment of Rs. 176 million - almost 20 percent higher than the project's incremental cost in that year. If the incremental cost of the project is financed in addition to 'normal' increases, the share of health in total revenue expenditures would increase by 0.2 percent (from a current level of 5.3 percent).

34. If the share of health expenditures in total expenditures is maintained together with the increases in overall expenditures at least at the trend of the 1980s, the project's sustainability should be attainable. Financing incremental recurrent project costs through the 'normal' growth in allocations would, however, lead to some change in the structure of health expenditure. Currently, secondary health services consume roughly 30 percent of the total, or around Rs. 660 million (with 58 percent for primary care). Projecting these expenditures to the end of the project period (assuming a constant share of total expenditure for health and continuation of the 1980s trend in total expenditures) the allocation would be Rs. 960 million with a 'normal' increase in that year of Rs. 63 million. The required project incremental expenditure would be almost two and a half times as large. Hence the need for reallocation. Assuming no other changes in the composition of health expenditures, the allocation to secondary health would increase from the current 30 percent to 34.5 percent.

35. How feasible is the assumption of overall revenue growth in the state being equal to the level of the 1980s? The deficit on the revenue account was estimated at 13.5 percent of revenue receipts in 1994/95 and to 23 and 24 percent in the two previous years. The gross fiscal deficit has been equal to 40-45 percent of revenue receipts over the past three years - the highest for any state. Interest payments on the state government's debt as a share of total state revenue rose from 12.5 percent in 1985/86 to 37.2 percent in 1994/95 - the second highest among the eleven most highly populated states. Revenue growth from state taxes has been buoyant in recent years and well above that for all states combined. However, additional efforts will be required both to increase revenue receipts further and to restructure expenditures if growth in social sector real expenditures is to revive. The relative wealth of the state suggests that increased revenues should be possible to generate.

36. West Bengal . The incremental recurring expenditures at the end of the project period are estimated at Rs. 250 million. The total revenue allocation for the Health Department in 1995/96 is Rs. 5,570 million. Real growth rates in health expenditure through the 1980s averaged 2.8 percent a year. In 1991/92 real expenditures fell by 14 percent. Since then they have risen by an average of 2.9% a year. Assuming a continuation of this trend, revenue expenditures in the year following the end of the project will be Rs. 6,803 million with a 'normal' increment in that year of Rs. 197 million. Project incremental recurring costs would be just over 3.7% of total revenue expenditures on health or around 1.25 times the 'normal' increment. However, overall trends in government revenue expenditures in recent years have been above those in health. If, in future years, the health sector maintains its share of total expenditures and the trend in total expenditures over the past three years is maintained (7.9 percent), the health allocation in 2001 would be Rs. 8,790 million, with a 'normal' increase of around Rs. 694 million. Project incremental costs would then be equal to 36 % of the 'normal' annual increase. The incremental project costs imply an increased share of total government revenue expenditure for the health department of 0.3% (the current share is 7.2%).

37. In order for the project incremental expenditures to be accommodated relatively easily at the end of the project without a sudden large increase, the share of overall health expenditures should increase at a rate at least as fast as total revenue expenditures. If that occurs, the costs should be sustainable. If the growth rate of health sector allocations was to continue to be substantially below that of overall expenditures, the question of project sustainability would be more ambiguous.

38. The project is likely to result in an increased share of health expenditures for secondary level services (unless overall expenditures increase at a very rapid level). Expenditure on secondary health in 1994/95 was equal to 25 percent of total health expenditures, around Rs. 1,400 million (with 45 percent for primary care). Maintaining a constant share of total government expenditures at the recent trend rate would lead to an allocation of Rs. 2,384 million at the end of the project period. If project incremental costs were financed in addition to the trend increase, these would add an additional 10 percent to this total and the share of secondary services would increase to almost 30 percent of total health expenditures million. To the extent that the

incremental expenditures are financed through the normal trend increase, the share for secondary services would increase further.

39. How feasible are the assumptions regarding increases in health sector financing? The deficit on the revenue account was equal to 19 percent of revenue receipts in 1994/95 (the highest ratio across the 15 major states). This has increased from 14 percent in 1991/92. The gross fiscal deficit is currently (1994/95) equal to 30 percent of revenue receipts. Interest payments on the state government's debts were equal to 19.1 of revenue expenditures in March 1995. This is slightly above the average across the major states (18.0 percent). Outstanding debt is equivalent to 22.6% of state domestic product which is slightly below the average. Efforts are underway to improve state public finances. The fiscal deficit in 1995/96 is anticipated to be below the previous years' and as a share of revenue receipts is planned to fall to 27%. Further efforts to increase revenues and to alter the structure of expenditure obviously will be necessary to reverse the relatively weak position of public finances in general and the deteriorating situation of finances for the health sector in particular.

40. The project will add 4.5 percent to the current debt of the state government (Rs. 5,969/13,081 million).

41. Summary. The position of public finances in Karnataka and recent trends in expenditure on health both suggest that the project's incremental recurrent costs are sustainable. In Punjab and West Bengal, however, continuation of recent trends in health expenditures would not be sufficient to absorb the incremental costs. In both cases, the rate of growth of health expenditures in recent years has been below the growth rate of overall expenditure. If health expenditures can be maintained at least as a constant share of overall expenditures throughout the life of the project, the risks of sustainability would decrease significantly. Punjab and West Bengal will need to enhance their contributions to the health sector. In the case of Punjab, the necessary resources needed to sustain this commitment can be mobilised with small increase in tax effort. In the case of West Bengal, some reorientation of its fiscal policies may be required to ensure sustainability.

COSTS AND EFFICIENCY OF FIRST REFERRAL VERSUS TERTIARY LEVEL HOSPITAL CARE

1. The Annex estimates the costs and efficiency of treating patients at a first referral hospital compared to a tertiary hospital. It deals specifically with two issues: (i) the overall unit costs related to specific inputs for in-patients and out-patients at first referral versus tertiary hospitals; and (ii) costs and efficiency comparisons of first referral versus tertiary level hospitals for a sample of interventions. One of the rationales for the project from an economic efficiency point of view is that the unit costs of treatment can be reduced considerably by providing health care services at lower level facilities where unit costs for comparable services are lower. The analysis in this Annex will, therefore, test whether this hypothesis is true; and if it is accurate, what would be the approximate magnitude of the cost savings if diagnosis and treatment of conditions that are possible to be addressed at secondary level facilities are indeed taken care of at that level, rather than at the tertiary level.

2. During project preparation, service norms at different level facilities throughout the system were streamlined and rationalized in each of the three states. This will make it possible to provide diagnosis and treatment services at an appropriate level facility in a cost-effective manner. Therefore, the "without" project scenario is one in which a substantial number of diagnosis and treatment services would continue to be done at tertiary hospitals; and the "with" project scenario is one in which many of these services can be performed at first referral hospitals.

3. Analysis comparing cost-effectiveness between different types of hospitals is limited in India, because of the unavailability of data. However, due to variations in the case-mix, it is difficult to compare cost-effectiveness comparisons between these categories of hospitals. Also, because more serious and complicated cases are admitted at tertiary hospitals, the length of stay and treatment costs tend to be higher at tertiary hospitals. Previous analysis has shown that between 25-40% of costs could be saved by treating patients at first referral facilities rather than at tertiary hospitals. The data used in such analysis have been much more broad-based and have tended to overlook some of the problems noted here. Moreover, such analysis did not compare similar services.

4. A preliminary analysis was undertaken during the preparation of the project and is the initial part of a much broader study being undertaken as part of our sector work on "Comparative Analysis of State Health Systems Reform in India " The analysis here estimates cost savings of treating patients at a first referral hospital compared to a tertiary hospital in Hyderabad. The reason for choosing hospitals in Hyderabad was because of the availability of accurate cost data and the comparability of the services provided. These hospitals were the Suraj Bhan hospital, a first referral facility and the Sultan Bazaar Maternity hospital, a tertiary hospital attached to the Osmania Medical College in Hyderabad. Both hospitals provide antenatal, intranatal and Family Planning Services in addition to gynecological care. The case-mix at the two hospitals is more or less similar – where a major chunk of the in-patient facility is utilized by obstetric and family planning cases which constituted about 40% and 30% of in-patients, respectively during the past 2 years in both the hospitals; about 11% of the in-patients were constituted by patients' admitted for gynecological problems and procedures; and a roughly equal proportion of in-patients had complicated obstetric care. One difference, however, was the higher utilization of out-patients at Suraj Bhan (first referral) Hospital, with a much higher number of out-patients per in-patient (6 to 1) compared to the Sultan Bazaar Maternity Hospital (1.2 to 1).

5. Estimation of Costs. The recurrent costs for the Sultan Bazaar Hospital were taken from the budget books, and the recurrent costs of the Suraj Bhan Hospital were taken from hospital records and

grants received from the Government. The recurring expenditure under different heads for three financial years for both the hospitals is presented in Tables 2 and 3. Since both hospitals come under different administrative systems, cost heads do not exactly match, and information on some heads is not being routinely compiled by these institutions. However, at an aggregate level both data sets represent average recurring costs.

Table 1: Recurring Expenses of Suraj Bhan Hospital
(Costs in Rs.)

Head of Account	1992-93	1993-94	1994-95	Average 93-95
Pay & Allowances	1,641,124	2,397,259	2,656,855	2,527,057
Rent rates and Taxes	50,263	80,419	69,214	74,817
Water and Electricity	23,776	17,514	17,534	17,524
Cleanliness Charges	5,274	3,624	2,650	3,137
Stationary, Imprest & other Contingents	13,687	15,496	12,111	13,803
Maintenance	10,869	9,935	19,143	14,539
Electrical Goods	73,709	65,037	57,247	61,142
Drugs and Medicine	1,326	1,973	5,632	3,803
Drugs & Supplies Provided from Headquarters	425,000	467,500	514,250	490,875
Diagnostic and Lab Material	2,812	2,532	4,999	3,765
Surgical Instruments	1,380	3,060	767	1,914
Uniform	48,648	40,855	39,578	40,216
Diet	0	91,250	91,250	91,250
Total	2,297,868	3,196,454	3,491,230	3,343,842

Table 2: Recurring Costs of Sultan Bazaar Hospital (Rs.)

Head of Account	92-93	93-94	94-95	Average 93-95
Pay & Allowances	5,055,000	5,862,000	7,110,000	6,486,000
Service Postage	0	0	3,000	1,500
Water and Electricity	0	0	597,000	298,500
Other Office Expenses	33,000	0	90,000	45,000
Rents and Taxes	70,000	29,000	112,000	70,500
Publications	15,000	50,000	15,000	32,500
Machinery and Equipment	172,000	1,546,000	150,000	848,000
Motor Vehicles and Other Expenses	0	157,000	0	78,500
Maintenance	0	581,000	9,000	295,000
Materials and Supplies	1,450,000	1,397,000	1,400,000	1,398,500
Diet	0	220,000	220,000	220,000
Total	6,795,000	9,842,000	9,706,000	9,774,000

6. Estimation of Capital Costs. Capital costs, however, were more difficult to estimate, as both hospitals are located in old residential structures that were converted several decades ago. In addition, the equipment is relatively old. Hence, it was not possible to arrive at precise capital costs. An approach suggested by WHO for estimating capital costs[1] was used. This included a detailed listing of existing capital resources of both hospitals, namely building (area), equipment (major, minor and surgical) and furniture. The current costs of these capital resources were applied to the existing facilities of both hospitals. For each capital facility the mean duration of utility was arrived at by obtaining expert opinion. Examples from the Indian context were taken to arrive at a capital facility with a mean duration of use and the annual capital cost component.

[1] Andrew Creese & David Parker, Cost Analysis in Primary Health Care: A Training Manual for Programme Managers; WHO, Geneva 1994.

Table 3: Estimation of Annual Capital Costs (Rs.)

Capital Facility	Description	Current Costs		Mean Duration or Use in Years	Estimated Capital Costs per Annum	
		Sultan Bazaar	Suraj Bhan		Sultan Bazaar	Suraj Bhan
Equipment	Major	4,287,100	1,050,100	10	428,710	105,010
	Minor	187,000	90,000	5	37,400	18,000
	Surgical	230,000	67,000	1	230,000	67,000
Furniture	@ Rs. 8720/bed	1,395,200	436,000	10	139,520	43,600
Building Area	@ Rs. 400 per Sq. Feet	15,290,000[2]	6,960,800[3]	50	305,800	139,216
Total Capital Costs per Annum					1,141,430	372,826

2 .Sultan Bazaar Hospital: Total Building Area 38,225 Sq. Feet

3 Sultan Bhan Hospital: Total Building Area 17,402 Sq. Feet

6. Estimation of Unit Costs. Since the hospitals studied provide both in-patient and out-patient services, a comprehensive index which captures both types of services was applied to arrive at a unit cost figure. The day equivalent method which equates the cost of one in-patient day with four out-patient visits was used. Using the case equivalent method, the unit cost for each hospital was calculated. The results are shown in Table 4.

Table 4: Estimation of Unit Costs for 1993-95 (Rs.)

Description	Sultan Bazaar Hospital	Suraz Bhan Hospital
Average IP	52,516	12,199
Average OP	62,150	79,962
Case Equivalents	68,054	32,190
Annual Recurrent Costs	9,774,000	3,343,842
Annual Capital Costs	1,141,430	372,826
Total Annual Cost	10,915,430	3,716,668
Cost per Case Equivalent	160	115

[2] Andrew Creese & David Parker, Cost Analysis in Primary Health Care: A Training Manual for Programme Managers, WHO, Geneva 1994.

[3] Howard Barnum & Joseph Kutzin; Public Hospitals in Developing Countries, published for the World Bank by The John Hopkins University Press.

7. As data on in-patients and out-patients were available only for two years (1993-94; 1994-95), the analysis applies only to this period. The results indicate that day equivalent at the Suraj Bhan secondary hospital is about two-thirds that of the Sultan Bazaar Maternity Hospital. The results are similar to other studies which found that services at secondary level facilities can be provided more cost effectively than at tertiary hospitals if it is technically possible to provide these services at the secondary level. In other words, there can be considerable cost savings if services that can be provided at secondary level facilities are provided at those facilities rather than at tertiary hospitals. The main reason for this at the two hospitals studied was largely because of greater unit costs of infrastructure and overheads at tertiary hospitals.

8. A review of several studies undertaken by Barnum et. al. also concluded that within a country, tertiary hospitals tend to have higher average costs than the less technically complex district level hospitals. However, they did not analyze unit costs for similar types of services provided. These results are merely indicative, and apply only for two hospitals. However, they do illustrate the fact that streamlining and rationalization of services can result in considerable cost savings.

USER CHARGES AND COST RECOVERY

1. The principle of implementing user charges more rigorously for both inpatient and outpatient diagnostic and treatment services in hospitals has been adopted by the Governments of Karnataka, Punjab and West Bengal. The Governments regard cost recovery as a way of augmenting public resources for healthcare, though not for substituting for them. Responsibility for meeting the incremental recurrent costs of the project has been accepted by each Government. Three-quarters of total health expenditures in India already are made directly by patients to private doctors and hospitals. Studies show that the poor are disproportionately represented among the users of public hospitals. Full cost recovery in the public sector is neither feasible nor desirable. Equally, however, each government has adopted the principle that those patients who are able to pay for services in public hospitals should do so to some degree and that revenues should be of a size to have a significant effect on funding non-salary recurrent costs. Therefore, the system of user fees proposed by each state is a combination of voluntary payments and targeting of the poor for exemption.

2. In summary, the guiding principles for implementing user charges will be to: (a) recover a part of the costs of inpatient hospital services from those patients who can afford to pay, while protecting the poorest sections of society; (b) charge all outpatients a nominal fee partly to improve record-keeping and partly to raise moderately hospital income (Punjab and West Bengal); (c) concentrate charges on voluntary services such as private rooms or wards and on medical services with a relatively low cost-effectiveness; (d) enable hospitals to retain all or part of the revenues collected by them (Punjab) or to empower district health committees (West Bengal and Karnataka) to retain the revenues and redistribute them among hospitals within the district according to both need and level of collection; (e) ensure that revenues are used for non-salary recurrent items. In the absence of quality improvements, new or increased charges could lead to reduced demand for hospital services with an overall reduction in revenues. Increased charges will, therefore, be introduced in a phased manner and matched to higher quality levels of services. Some would be appropriate immediately. Others would need to await improvement in services and infrastructure.

3. While the general principles are common across the three states, there are variations in the way they will be implemented. The programs of each state are described below, followed by an indicative example of the levels of revenue which might accrue.

Karnataka

4. Outpatient charges. Currently no charges are made for outpatients. A recommendation is before the Government to implement an annual Rs. 2 registration fee. The intention is both to encourage patients to keep a record of their treatment and to raise revenues. Charges of Rs. 5 are currently made for issuing health certificates. Half the revenue is retained by the doctor and half retained by the government. Such charges represented 40 percent (Rs. 41 million) of total revenues collected by the Department of Health and Family Welfare during 1992-93.

5. Inpatient charges. The last revision of charges was made in 1988. Patients who are a member of a family with an annual income of above Rs. 8,000 a year are meant to be charged Rs. 2 per day for a bed in a general ward. Daily charges for four, two and single bedded rooms are Rs. 5, Rs 7.5 and Rs. 15 respectively. Of total hospital beds, paying beds currently constitute only

around 4 percent (600 out of 17,500). Fees for medical services are also listed and they are also graded. Patients in special wards are meant to pay full fees while those in paying general wards should pay 50 percent of the fee. Patients in general wards pay no fees. Average annual revenues from all charges over the period 1990-93 were Rs. 66 million -- equivalent to under 2 percent of total DOHFW expenditure. If all the charges were in practice being levied, revenues would be greater than those actually collected. Recommendations are before the Government to introduce a small registration fee (with no exemption), to revise the charges for paying beds and to increase their number through the designation of 20 percent of all additional beds. Revisions of charges for treatment will be undertaken during the project but the immediate priority is to increase the collection of existing charges.

6. Exemption for the Poor. A criterion for exempting the poor has been proposed by the Government. The Government proposes to use the existing green/tricolor card system within the Public Distribution System (PDS) in the state, which is used to provide nutritional support through issue of subsidized grain, as a basis for exemption from user fees. Green card holders are also entitled to subsidized cloth and kerosene. All poor families with an annual income level of Rs. 11,850 or below (i.e., the nationally accepted norm under the JRY program) are entitled to such green cards. Comprehensive surveys of the rural population were undertaken in the past for identifying the beneficiaries. As of now, the rural population with an annual income of Rs. 11,850 or below has been provided with green cards. This includes special categories of underprivileged populations like landless agricultural laborers, village artisans, small and marginal farmers, old-age pensioners, widow pensioners as well as the urban poor. The green card facility has recently been extended to the non-notified slums. The number of green card holders in the state are about 5.3 million compared to the 9 million ration card holders of the PDS system. The Government has provided assurances that it will carefully monitor the green card system as a basis for exemption from user fees and ensure that leakages are minimized.

7. Revenue administration. The main reason why charges are under collected at hospitals is that the revenues currently revert to the Government treasury, where they become part of general revenues. There is no direct incentive for collection. The Government is taking necessary action to ensure that the receipts will be fully transferred to District Health Committees and be reallocated between hospitals in the district on the basis of both need and level of revenue collection.

Punjab

8. Outpatient charges. Currently, a charge of Rs. 2 is made for outpatients. A Government Order giving notification of (among other things) Rs. 5 registration fee was prepared in early 1994, but is still pending. The Government provided assurances that it would implement the enhanced outpatient charges as quality improvements are effected through the project. In addition, it has proposed to establish 'pay clinics' in government hospitals to be operated after regular hospital hours by government doctors. Of the fees, 50 percent would be retained by the doctor and 50 percent retained by the institution.

9. Inpatient charges. The Government Order also established sets of fees for inservice medical facilities. These included charges for special wards in district and sub-divisional hospitals, daily visiting charges by doctors and for laboratory investigations such as X-ray, diathermy, ECG, CT scan and ultra sound and for various categories of surgery. The proposed charges are higher than those proposed in the other two states and the coverage of treatments wider.

10. Exemption for the Poor. Exemptions to the charges noted above include state government employees and members of families holding yellow cards which signify a family income of below Rs. 11,850 based on the JRY norms. New lists of families eligible for these cards have begun and will have been completed by negotiations. Total revenue raised by DOHFW in 1993/94 was Rs. 25 million or just over 1 percent of expenditure. According to the National Sample Survey 1987/88, almost 50 percent of hospitalized cases are in non public hospitals. The average payment per case in these institutions was Rs. 1,200, indicating a willingness to pay among the general population. Because of the higher income level in Punjab, the ability and willingness to pay for services is greater than in the other two states. As a result, there exists considerable opportunity to increase revenue collection through increased charges and better collection methods.

11. Revenue administration. The Government has determined that revenues will be retained by the institution of collection for the purpose of non-salary recurrent expenditures.

West Bengal

12. Outpatient charges. A structure of hospital charges was implemented with effect from November 1992. Among the changes implemented was an outpatient charge of Rs. 1 per prescription slip, an OPD ticket which is used on average 3 times, for teaching and district hospitals. In 1995, a Government Order was issued to cover all subdivisional hospitals in the Calcutta Municipal Corporation and all polyclinics in Calcutta. There are no exemptions for these OPD charges. Charges for most tests and diagnoses exist -- in the range of Rs. 10 to Rs. 50 -- but few are collected. A review body is currently considering some new charges. The Government provided assurances that extension of charges to state general hospitals will be considered upon improvement of services under the project.

13. Inpatient charges. The review of 1992 also resulted in an upward revision of charges for private beds, diagnostic services and surgery in district and sub-divisional hospitals. Fees are charged for 10 percent of beds (mostly in special wards). As a result of several perceived anomalies in the structure of fees, these were again revised and extended in early 1995. Paying bed charges in general wards are Rs. 10 a day in most tertiary teaching hospitals and Rs. 6 in state, district and sub-divisional hospitals. Separate room charges are Rs. 30 and Rs. 16 respectively. Charges are made for diagnoses and for surgery for those in private beds and wards. The majority of charges are below Rs. 50 apart from those for endoscopy and CT scan. More recently, another review has been initiated which, in addition to surveying the levels of charges, is attempting to rationalize them across both the secondary and tertiary sectors. Regarding paying beds, the Government proposes to enhance these to 30 percent of all beds at district, state general and sub-divisional hospitals. A further extension to rural hospitals will also be considered. Another avenue of user charges are the polyclinics in urban centers manned largely by doctors of teaching hospitals. These provide mainly outpatient services and charge Rs. 16-20 per visit. In 1994/95, the largest of the polyclinics generated almost 15 percent of recurrent costs with a similar amount being paid to the doctors. Revenues generated by all charges are currently equal to just under 3 percent of total DOHFW expenditure.

14. Exemptions for the Poor. The existing system for exempting the poor in West Bengal is based on an 'Indigent Certificate' from the local elected representative, given to families with an income level below Rs. 1,500 per month. The West Bengal Government proposes to use this

criterion rather than the JRY criterion because the latter does not apply to large portions of the urban population of West Bengal.

15. Revenue administration. Provisions exist for the Government, through the Finance Department, to reallocate 50 percent of the incremental funds collected through user charges to the collecting institution. The procedures, however, are said to be very tortuous and are rarely used. The Government has provided assurances that it will take necessary actions to ensure that revenues collected through user charges at the district, state general, sub-divisional and rural hospitals will be retained at the district level to be reallocated amongst hospitals in the district based on both need and level of revenue collection.

Potential Revenues From User Charges

16. In each of the three states, review bodies to consider the structure and implementation of user fees in hospitals exist and proposals are being actively considered. Here, an indicative example is developed of the potential revenue that would be generated through the implementation of the types of user charges now being discussed and implemented. Sets of alternative assumptions are used. The example is based on information for Karnataka.

17. Paying beds and wards. Currently, total bed strength is 14,858 at secondary hospitals. Of these there are around 400 paying beds in the district hospitals and 200 in the tertiary, teaching, hospitals. The project will add 3,832 additional beds. Another 1,400 beds will be added through a planned KFW project. Of the additional beds it is proposed that 20 percent will be paying beds. In secondary level institutions, the total number of paying beds will increase from around 400 to almost 1450. As was described above, there are different bed charges depending on the number of beds per room. Currently, the average charge is Rs. 6 per day. It is intended to increase the charges considerably. Assuming that charges for 2 and 1 bedded rooms average Rs. 50 per day and for 4 and 6 bedded rooms, Rs. 20 per day, that one quarter of the beds fall under the first category and two thirds under the latter and that occupancy rates remain at around the current level of 85 percent, the increase in revenue would be:

Table 1: Project Revenue from Paying Beds and Wards

Current:	400 beds	x	310 days	x	Rs. 6 = Rs. 0.7 m.
Future:	362 beds	x	310 days	x	Rs. 50 = Rs. 5.6 m.
	1088 beds	x	310 days	x	Rs. 20 = Rs. 6.7 m.
					Total Rs. 12.3 m.
					Increase: Rs. 11.6 m.

18. Charges for Diagnostic Services and Surgery. A proposal is currently being considered by the Government to charge a registration fee (Rs. 5) for each in-service case. The most recent estimate, for 1992, is of 900,000 cases a year. The fee (if applied with no exemptions) would raise Rs. 4.5 million. The charges being discussed for diagnostic services and surgery in Karnataka tend to vary according to whether the patient is in a special ward or the general ward. It is proposed that one set of charges would apply to all those in paying beds while those in general wards (but with an income of over Rs. 11,850 a year) would pay half that rate. Obviously, in setting charges for

patients in special wards care will need to be taken to ensure that the combined higher quality of room and services can justify the additional charge. Otherwise, patients will either opt for the general wards or for private sector treatment and the paying beds will be underutilized. Currently, while there is a schedule of charges, last revised in 1988, few are collected owing to the lack of institutional incentive previously described. The charges in Karnataka, similar to those being proposed in West Bengal, suggest a level of Rs. 45 for minor surgery and Rs. 100 for major surgery. Charges for some forms of diagnosis are higher but apart from scans etc. few are above Rs. 300.

19. The total number of inpatient cases in Karnataka is estimated to be 900,000 a year. Those inpatients below the defined poverty line and therefore to be exempted from charges are estimated at 30 percent -- 270,000 patient cases. Of the remaining 600,000 or so cases, six percent or 36,000 will be in paying beds. The remaining 564,000 would be in general wards. Assuming that one-quarter of patients require major surgery and the rest require minor surgery, the annual revenue from the charges would be:

Table 2: Projected Revenue from Major and Minor Surgery

Patients	Major Surgery	Minor Surgery	Revenue
36,000 in paybeds	9,000 x Rs. 100 +	27,000 x Rs. 45 =	Rs. 1.3 m.
564,000 in general	141,000 x Rs. 50 +	423,000 x Rs. 23 =	Rs. 17.0 m. wards
			Total Rs. 18.3 m.

Overall, increased revenues from inpatients might be around Rs. 11.6 million for bed charges, Rs. 4.5 million for registration fees and Rs. 18.3 million for diagnostic services and surgery: a total of Rs. 34.5 million.

20. Outpatient charges. A recommendation to charge a registration fee (covering a year or until the registration card is filled up) of Rs. 2 for outpatients without exemptions is being considered by Government. In 1992, roughly 10 million cases were registered. Revenue would be Rs. 20 million.

21. Other charges. Forty percent of departmental revenues are currently generated through charges for health certificates. The charge is Rs. 5. A proposal to double the charge is being considered. This would increase revenues from this source from Rs. 41 million to Rs. 82 million a year.

Summary

22. Annual recurrent expenditures for secondary health services are expected to be Rs. 1,560 million at the end of the project period. The measures described above could generate around Rs. 136 million, equivalent to almost 9 percent of the total or over 29 percent of all non-salary recurrent expenditures. This amount of additional resources could have a significant effect on the levels of service quality provided by secondary health care institutions. In these computations, the existing charges for treatment have been utilized. Revenues generated from these would provide only one quarter of all revenues and are much less than those arising from increased charges for certificates etc. The charges of Rs. 45 and Rs. 100 for minor and major surgery respectively might be compared to the average private expenditure on an episode of hospitalization in a rural private

hospital in 1986/87 of Rs. 733 (NSSO). The estimated revenues from user charges, therefore, should be regarded as being at the low end of the potential range. There remains considerable opportunity to review and enhance charges for minor and major surgery, while making sure that appropriate mechanisms for protecting the poor are in place.

23. These calculations are mainly illustrative. While the decisions have been made in each state both to increase the role of user charges and improve the system of implementation, Governments have yet to implement all aspects of the levels and coverage of charges that would yield this level of revenue. The results, however, do indicate the potential which exists to augment government resources for health services through a few relatively simple measures. The immediate priority is to implement the existing patterns of charges more effectively and to monitor the use and effects of the revenues on health services.

PROJECT MANAGEMENT

1. Project management arrangements in the three states have several common elements and some differences. In Karnataka and West Bengal, the project will be managed and implemented by the Department of Health and Family Welfare (DOHFW) which will be strengthened under the project to address increased investment at the primary and secondary levels of health care. In Punjab, the project will be managed and implemented by the Punjab Health Systems Corporation (PHSC), which was established as an Act and promulgated as an Ordinance on October 20, 1995. The aim of the Corporation is to establish, expand, improve and administer medical care at the secondary or first referral level in Punjab. Chart 1 of this Annex shows the functional levels of project management that apply across all three states.

2. The project management arrangements proposed in each state have taken account of the existing organizational set-up of the Health and Family Welfare Department, the health programs being currently implemented by the Department and the overall set-up of public administration in the state, especially with regard to the nature of decentralized administration in each state. The management structure proposed in each state would assist in implementing a health system both efficiently and effectively. This Annex describes in detail the project management arrangements to implement the project in Karnataka, Punjab and West Bengal.

Karnataka

3. A Project Governing Board (PGB), at the top of the management structure, includes high-level representation from all relevant parts of the state Government that would be associated with the project. The PGB is fully empowered to make major policy decisions and develop the broad policy outlines for the project in Karnataka; approve the annual budget; authorize major project revisions as necessary; ratify decisions made by the Steering Committee; formulate rules and regulations; and undertake an annual review of project implementation and monitor overall project progress. The PGB would meet twice a year.

4. The PGB would delegate adequate powers to the Steering Committee to carry out its functions as the nodal body for project implementation. The Secretary, DOHFW, would be the Chairman of the Steering Committee and the Project Coordinator. The Steering Committee will supervise and monitor project implementation, undertake planning activities and facilitate project management activities. It will report to the PGB (Chart 2).

5. The Project Management Cell would be headed by an Additional Secretary, IAS cadre, who would serve as the Project Administrator. This officer would report directly to the Secretary, DOHFW. An Additional Director (Health Systems, World Bank) would assist the Coordinator and Administrator in day-to-day operations. Under the Additional Director, a Technical Wing would assist in carrying out project implementation. A Joint Director (Hospitals), who would be a Senior Medical Officer, and who has considerable field experience of working in hospitals of all levels, would be in charge of the medical and technical aspects of the project. This official would be supported by four Deputy Directors: Deputy Director (Training and Referral); Deputy Director (Hospitals North); Deputy Director (Hospitals South); and Deputy Director (HMIS). They will maintain the project profiles in respect of all 202 institutions being taken up under the project, prepare Action Plans for each institution and be responsible for the continuous implementation and monitoring of progress for each component of the project. The position of an Additional Director for the Gulbarga region would be created to implement the KfW project and will be financed by the KfW project. This officer will report to the Project Administrator to foster collaboration between the World Bank and KfW projects and facilitate the functioning of the overall health system.

6. A Design and Engineering Wing in DOHFW, headed by a Chief Engineer, would be responsible for designing, supervising and monitoring all the facilities to be renovated/extended under the project. The budget for civil works will be directly released by the project management to this wing, which would be fully accountable to the project authorities. Administratively, this wing will function as part of project staff. The Chief Engineer would be supported by two Superintending Engineers, and an adequate complement of Executive Engineers, Assistant Executive Engineers and Junior Engineers in the various districts. The Superintending Engineer of World Bank supported IPP-IX will also report to the Chief Engineer. A Senior Architect, specialized in hospital design, would be responsible for reviewing hospital design. He would report to the Additional Director (Health Systems Project) for administrative purposes and to the Chief Architect of the state for all technical issues. Equipment Management arrangements incorporated in the project are described in Annex 10.

7. A Strategic Planning Cell (SPC) headed by an Additional Director (Planning), would report directly to the Secretary, DOHFW. The SPC would monitor the critical issues in the health sector in the state by commissioning studies, workshops and seminars, and by directly hiring consultants to facilitate these activities. These issues would include monitoring the development of the private health sector; reviewing suitability of present regulations regarding the quality of private care provision; analyzing the evolving epidemiological profile in the states; evaluating the burden of disease and cost-effectiveness of public health interventions; reviewing medical manpower and reviewing the implementation of cost-recovery mechanisms and sectoral resource allocation patterns.

8. At the district level, a District Health Committee/Project Implementation Cell would facilitate functioning of the referral system, the collection and redistribution of user charges, maintenance of equipment, waste management, training of technical staff, quality assurance, surveillance of communicable diseases, and the monitoring and supervision of all project activities (Chart 3). It would ensure that user charges would be implemented more rigorously at all hospitals. A post of Resident Medical Officer (RMO) for each district hospital has been created. The RMO will take over the management of the district hospital, thereby enabling the District Surgeon to take on an expanded set of responsibilities, including monitoring the functioning of the referral system; planning and implementing the training component at the district level; supervising all hospitals outside the purview of the Zilla Parishad; and managing and supervising the equipment maintenance facility at the district level. The counterpart of the District Surgeon for non-hospital health and family welfare services at the district level is the District Health Officer, who will continue to implement all state and national health and family welfare programs. The District Surgeon would be supported by a social worker, mass media officer, junior engineer and an assistant controller of finance and accounts in implementing the project at the district level.

Punjab

9. At the top of the management structure of the Punjab Health Systems Corporation (PHSC) would be the Board of Directors, whose ex-officio Chairman would be the Secretary, DOHFW (Chart 4). The Board of Directors would consist of 13 members: 7 ex-officio members, including the Secretary, DOHFW; Special Secretary and Managing Director of PHSC; Secretary, Finance; Secretary, Rural Development and Panchayats; Secretary, Local Government; Director, Health Services; a Representative from the Ministry of Health and Family Welfare, GOI; and 6 nominated members. The Board of Directors would have powers to formulate policies for the Corporation, make regulations, borrow money and levy fee for services, and would be responsible for overseeing the overall management of the Corporation. The Government of Punjab would have the powers to issue directions to the Corporation in matters of policy, inspection and control, monitoring, and accounting.

10. The Project Management Cell would be headed by Special Secretary, IAS Cadre, who would be the Managing Director of the Corporation. The Project Management Cell would undertake all aspects of project implementation, including routine management, monitor progress, maintain flow of funds and project accounts, provide general administration and technical guidance and prepare progress reports. The Managing Director would be assisted by an Additional Managing Director and five other Functional Directors: Administration and Personnel; Medical Management, Medical Services, Engineering Services, M & E and HMIS and Financial Management. The Additional Managing Director would be responsible for Administration and Personnel and would be supported by a Manager for personnel matters relating to doctors, two Assistant Managers and four Assistants. He will also be responsible for purchase of non-medical equipment, stationary and other office equipment and will be supported by an accountant and an assistant in the performance of these functions. Another Assistant would also support him on matters relating to purchase and maintenance of vehicles.

11. The Director for Medical Management would be supported by four Joint Directors – one for referral, quality assurance and medical audits, one for ensuring linkages with national programs, one for waste management and surveillance of communicable diseases and one for purchase and distribution of drugs and medical supplies. These Joint Directors would be supported in the performance of their functions by the necessary Deputy and Assistant Directors. The Director for Medical Services would be supported by a Manager, personnel (nurses and paramedics), a Joint Director for training, and a Joint Director for the purchase of drugs and medical supplies. The Manager and three Joint Directors would be supported by a number of Deputy and Assistant Directors for performing specific functions. The Director for M&E would be supported by a Deputy Director for IEC and a Deputy Director for M&E and performance indicators. The latter would be supported by two Research Officers/Statisticians.

12. The Director for Engineering Services would be responsible for both civil works as well as equipment management and maintenance matters. He would be supported by a Superintending Engineer (whose level would be that of a PWD, Building and Roads Superintending Engineer) and three Executive Engineers under him. The three Executive Engineers would be responsible for public health (water supply, sanitation, pipes and fitting, sewerage, anesthetic and oxygen systems), electrical matters (wiring, equipment, etc.), civil works and building maintenance. Each of the Executive Engineers would be supported by two Subdivisional Engineers. For civil works and building maintenance, two additional Junior Engineers and an Accountant would also be recruited.

13. The Director for Financial Management would be responsible for revenue, audits and accounts. He would be supported by two Deputy Managers, one for Audit and one for Accounts/Revenues. The Deputy Manager for Audit will be assisted by two Assistant Managers, one for Pre-Audit and one for Post-Purchase, and by four Auditors. The Deputy Manager for Accounts/Revenues would be responsible for banking, ledgers, user charges, flow of funds and salaries. He would be assisted by two Accountants and one Assistant.

14. A Strategic Planning Cell (SPC) would report to the Secretary, DOHFW through the Managing Director, PHSC. The SPC would monitor the critical issues in the health sector in the state by commissioning studies, workshops and seminars, and by directly hiring consultants to facilitate these activities. These issues would include monitoring the development of the private health sector; reviewing suitability of present regulations regarding the quality of private care provision; analyzing the evolving epidemiological profile in the states; evaluating the burden of disease and cost-effectiveness of public health interventions; reviewing medical manpower and reviewing the implementation of cost-recovery mechanisms and sectoral resource allocation patterns.

15. At the district level, a District Health Committee/Project Implementation Cell (chart 5) would be the nodal implementing agency. It would facilitate functioning of the referral system, ensure maintenance of

equipment, manage hospital waste, train technical staff, provide quality assurance, undertake surveillance of communicable diseases, monitor and supervise project activities, and collect and redistribute user charges at the district level. The Civil Surgeon would be the Deputy Medical Commissioner and Chairman. The Committee would be composed of the District Development and Panchayat Officer; District Horticulture Officer; Executive Engineer, Municipal Corporation; Senior Medical Officer; and Municipal Health Officer as official members, and two members from the hospital welfare committee as non-official members. The Deputy Medical Commissioner would be assisted by an Assistant Medical Commissioner and by a Medical Coordinator, Administration and a Health Coordinator, Training -- the former for administration, procurement, surveillance, waste management and referral, and the latter for training, records, and HMIS. In addition, the District Coordinator would be assisted by a Social Worker, a Mass Media Officer, a Junior Engineer, an Assistant Controller for Finance and Accounts and a Superintendent of Office.

West Bengal

16. A Project Governing Board (PGB), at the top of the management, will include high level representation from all relevant parts of the state Government that would be associated with the project. The West Bengal structure is similar to the one in Karnataka (Chart 6). The PGB will be fully empowered to make major policy decisions and develop the broad policy outlines for the project in West Bengal; approve the annual budget; authorize major project revisions as necessary; formulate rules and regulations; facilitate project management activities; and undertake an annual review of project implementation and monitor overall project progress. The PGB would meet twice a year.

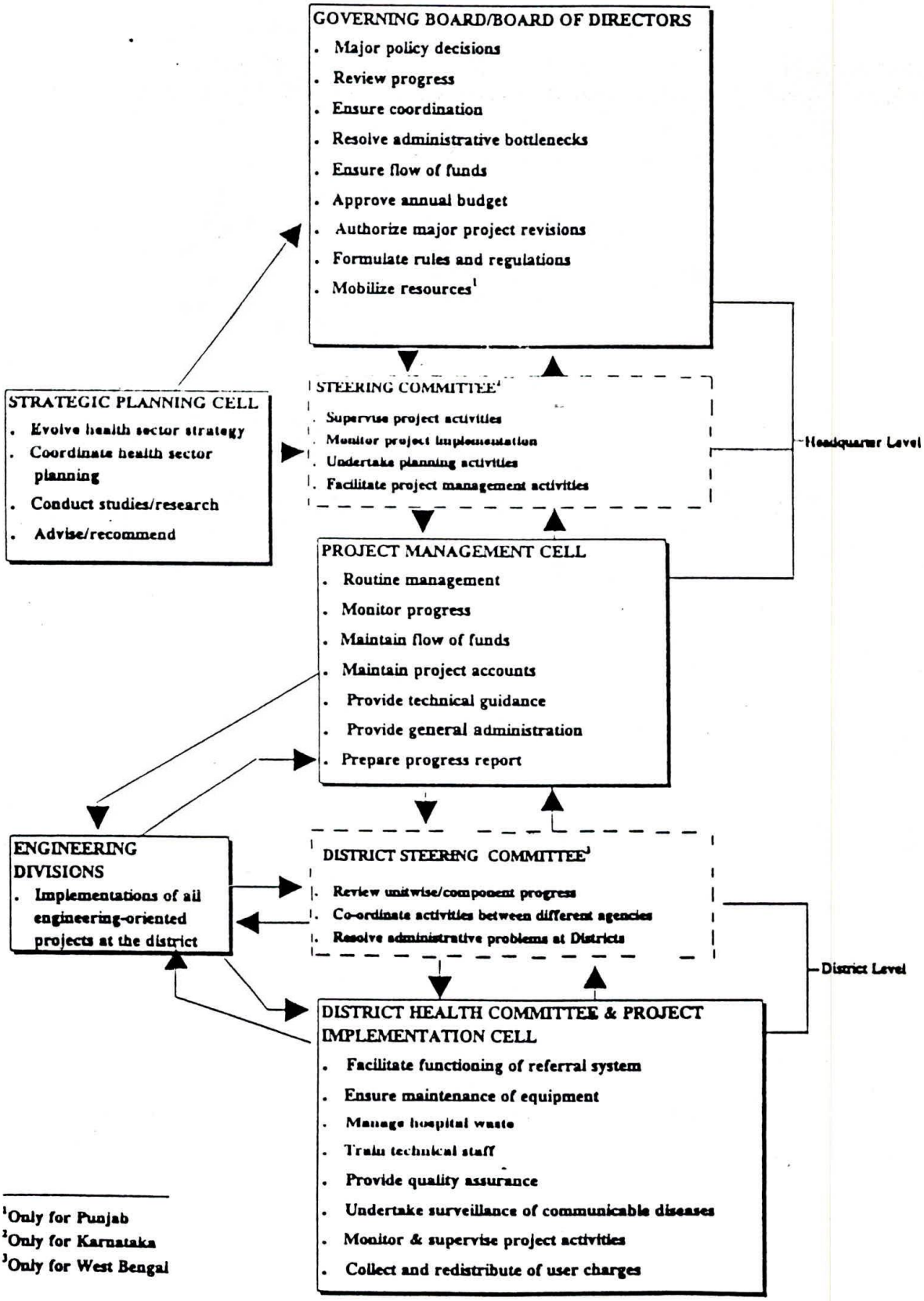
17. The Secretary, DOHFW will be the project coordinator. The Project Management Cell would be headed by a Special Secretary, DOHFW, who would be the Project Director. The Project Management Cell would undertake all aspects of project implementation including routine management, monitor progress, maintain flow of funds and project accounts, provide general administration and technical guidance and prepare progress reports. Because of the large volume of work, the Project Coordinator and the Project Director would receive additional support for implementing the project by two Special Officers -- one for medical and for non-medical activities. The Project Director would be supported by five Additional Directors: Administration and Finance; Engineering and Civil Works; Health and Medical I; Health and Medical II; HMIS and IEC. The Additional Director for Administration Finance would be a non-medical person and be responsible for recruitment, non-medical purchase, vigilance, financial audits, accounts and revenue matters. The Additional Director for Engineering and Civil Works would be responsible for supervision and monitoring of civil works and architectural designs and management and maintenance of equipment. The Additional Director for Health and Medical I would be responsible for personnel matters, training, quality assurance program and medical audit. The Additional Director for Health and Medical II would be responsible for the surveillance of major communicable diseases, monitoring of the referral system, waste management and medical purchase. The Additional Director, for HMIS and IEC would be responsible for M&E, performance indicators and IEC activities. The five Additional Directors would be supported by a complement of Joint, Deputy, Regional and Assistant Directors in the performance of their duties noted above.

18. A Strategic Planning Cell (SPC) would report to the Secretary, DOHFW through the Special Secretary (Project Director). The SPC would monitor the critical issues in the health sector in the state by commissioning studies, workshops and seminars, and by directly hiring consultants to facilitate these activities. These issues would include monitoring the development of the private health sector; reviewing suitability of present regulations regarding the quality of private care provision; analyzing the evolving epidemiological profile in the states; evaluating the burden of disease and cost-effectiveness of public health interventions;

reviewing medical manpower and reviewing the implementation of cost-recovery mechanisms and sectoral resource allocation patterns.

19. A District Steering Committee in each district would be composed of the Sabhadhipati, Zilla Parishad (Chairman); District Magistrate; Karmadhyakya, Jana Swastha Committee; Chief Medical Officer (CMO); Executive Engineer; Superintendent of local hospital; and an NGO representative (Chart 7). The Committee would meet monthly, and would review and monitor the progress of the project; coordinate activities between different agencies involved in the project; and provide necessary administrative and technical guidance at the district level. The CMO or the District Project Officer would be the head of District Project Implementation Cell. This Cell would be responsible for implementing the project at the district level including : facilitating the functioning of the referral system, maintenance of equipment, waste management, training of technical staff, ensuring quality assurance, undertaking surveillance of major communicable diseases, and monitoring and supervising other project activities. The District Project Officer would be supported by: a Deputy Project Officer; an Assistant Project Officer for administration, procurement, surveillance, referral, waste management; an Assistant Project Officer for training, records, miscellaneous activities and stores; a social welfare officer; a mass media officer; an accounts officer; and an engineering cell.

Chart 1: Functional Levels of Project Management



[1]Only for Punjab
[2]Only for Karnataka
[3]Only for West Bengal

Chart 2 Karnataka Health System: Management Structure

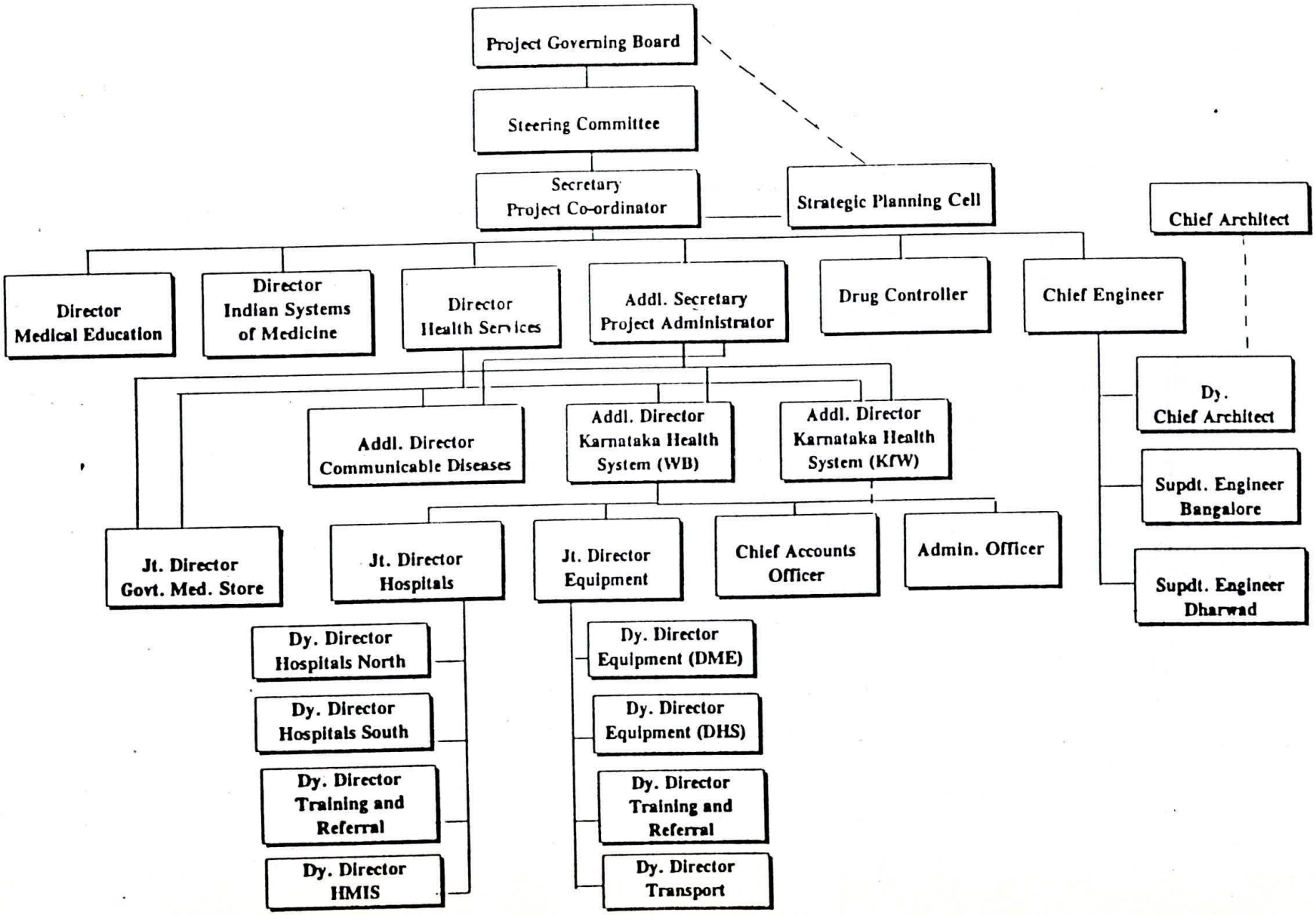


Chart 3 Karnataka Health System: District Level Organization

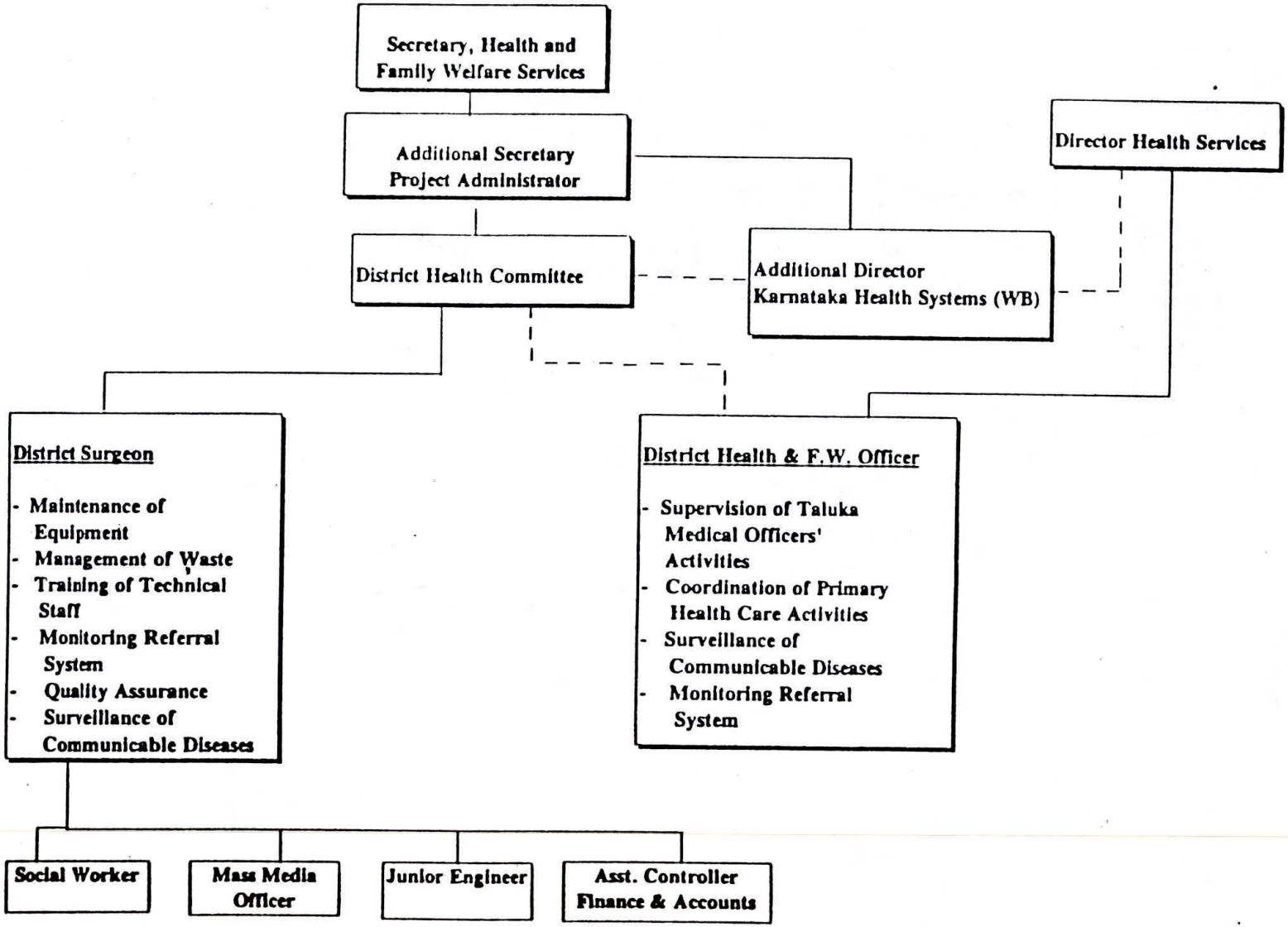


Chart 4 Punjab Health Systems Corporation: Management Structure

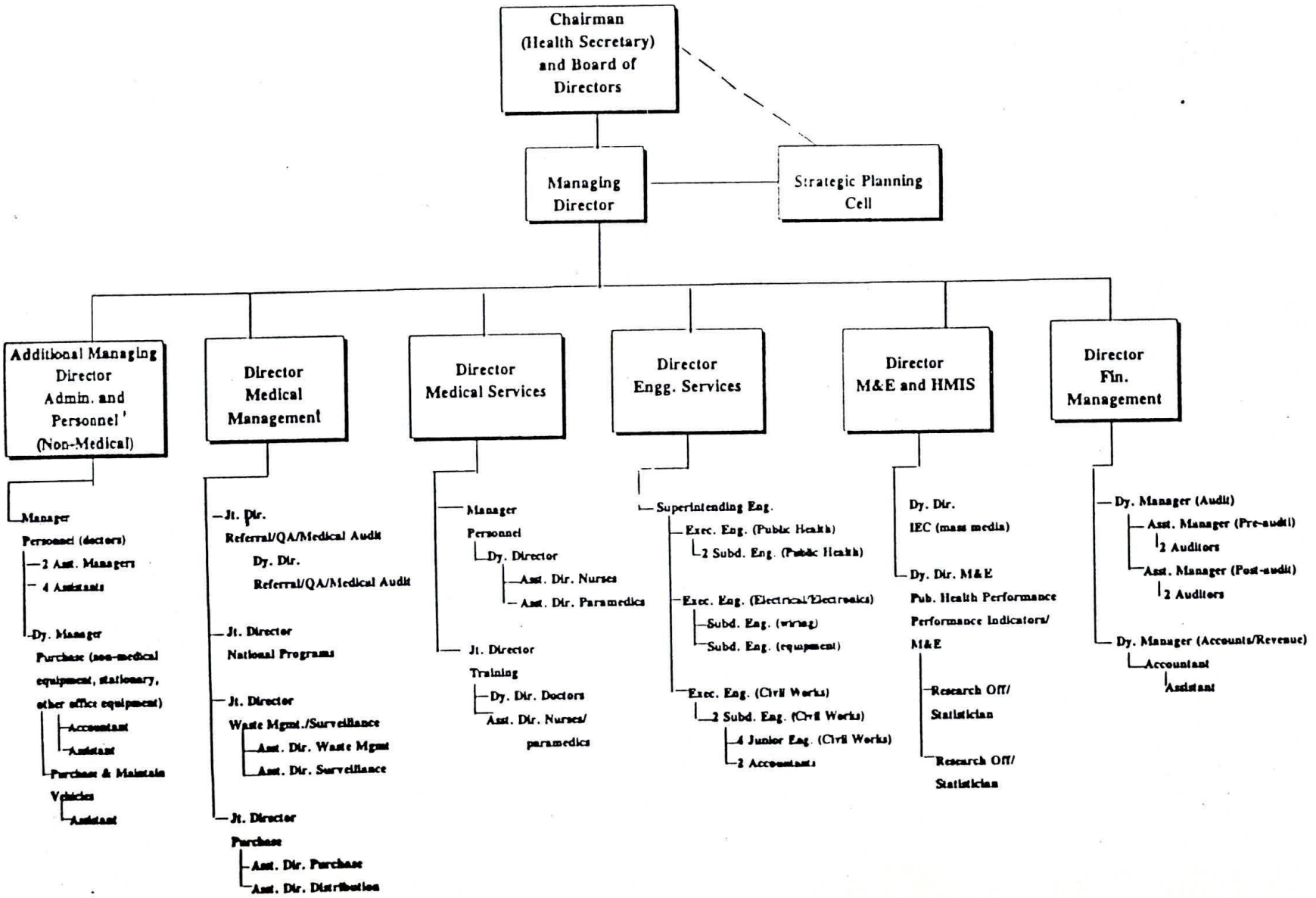


Chart 5 Punjab Health Systems Corporation: District Level

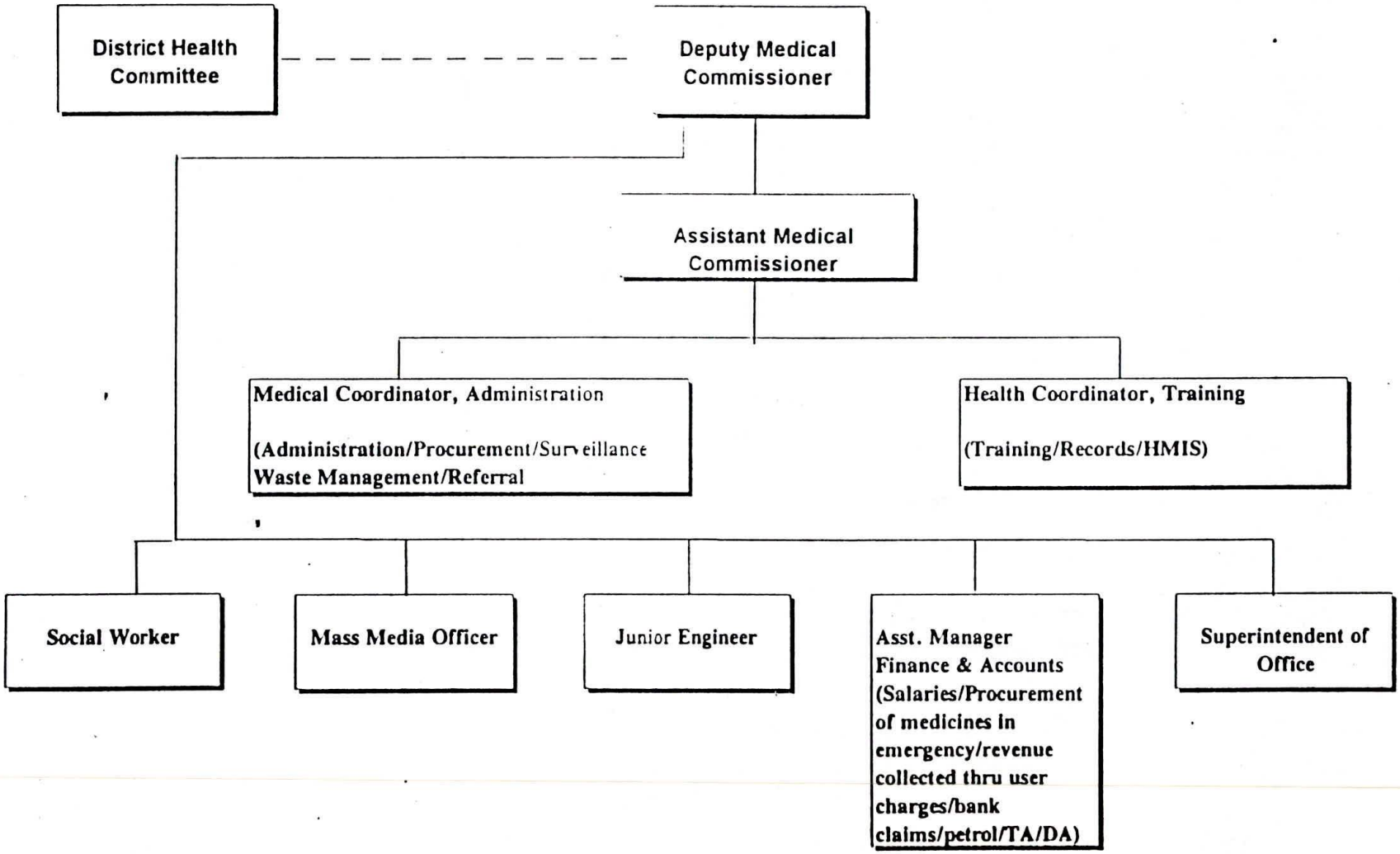


Chart 6 West Bengal: Management Structure

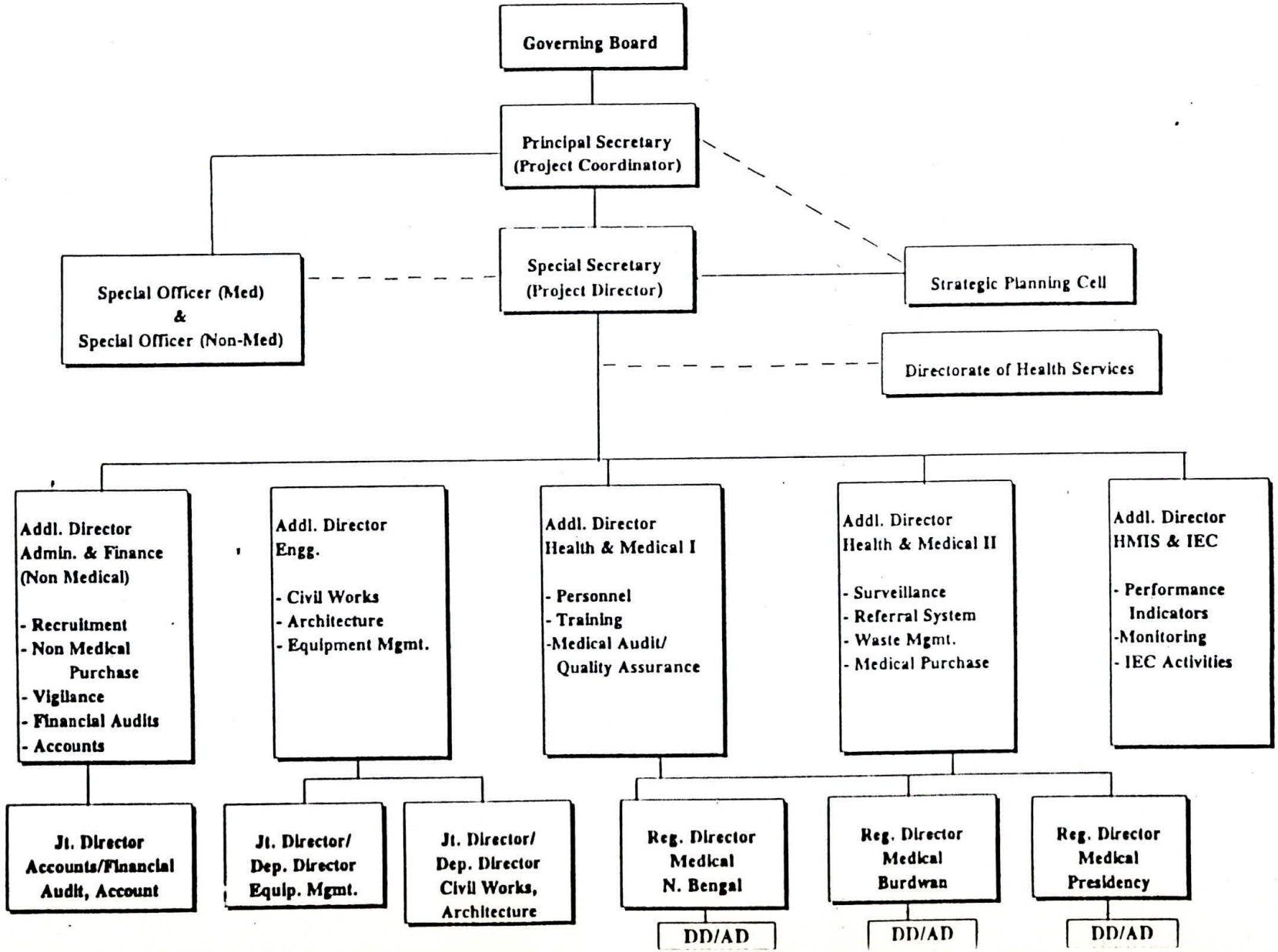
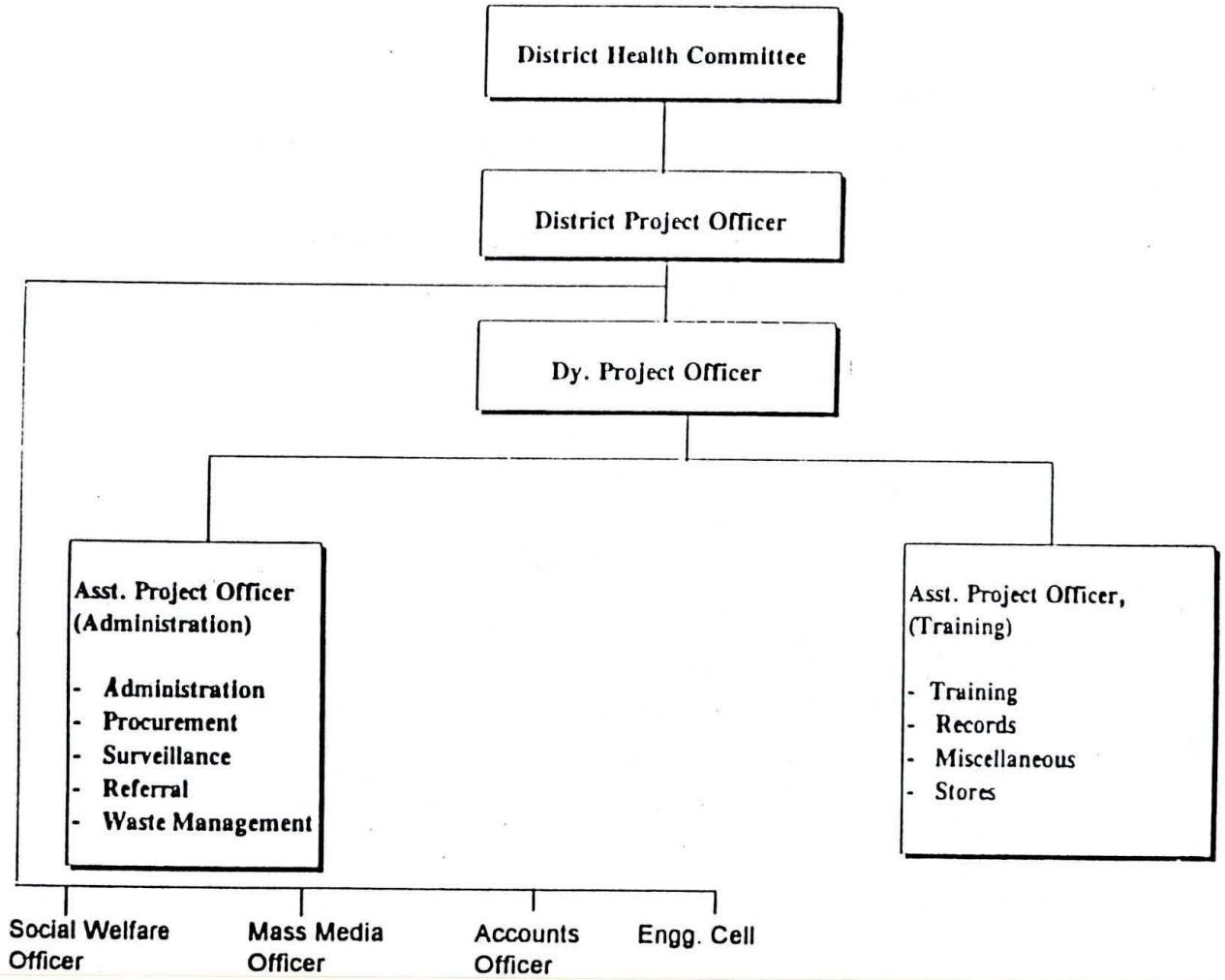


Chart 7 West Bengal: District Level Organization



KARNATAKA

PROJECT GOVERNING BOARD (PGB)

- Additional Chief Secretary to the Government
- Finance Commissioner
- Development Commissioner
- The Secretary to Government, Department of Planning
- The Secretary to Government, Department of Public Works (PWD)
- The Secretary to Government, Department of Women's Welfare
- The Secretary to Government, Department of Social Welfare
- The Secretary to Government, Department of Health and Family Welfare
- (Project Coordinator)
- The Additional Secretary, Karnataka Health System Development Project
- (Project Administrator)
- The Director of Health and Family Welfare Services
- The Representative of the Government of India from the Ministry of Health and Family Welfare (MOHFW)

PROJECT STEERING COMMITTEE

- The Secretary to Government, Department of Health and Family Welfare (Chairman and Project Coordinator)
- The Secretary II to Government, Finance
- The Additional Secretary, Department of Health and Family Welfare
- The Secretary to Government Planning
- The Director, Department of Social Welfare
- The Director, Department of Women's Welfare
- The Director, Department of Medical Education
- The Director, Health and Family Welfare Services
- The Joint Director, Hospitals
- The Additional Director, Strategic Planning Cell, Department of Health
- The Chief Engineer, Design and Engineering Wing, Department of Health and Family Welfare
- The Chief Architect, Design and Engineering Wing, Department of Health and Family Welfare
- The Chief Accounts Officer, Department of Health

PROJECT IMPLEMENTATION

Technical Wing

- Joint Director Hospitals
- Deputy Director Hospitals North
- Deputy Director Hospitals South
- Deputy Director Training and Referral
- Deputy Director HMIS
- Joint Director Equipment
- Deputy Director Equipment (DME)
- Deputy Director Equipment (DHS)

- Deputy Director Training and Referral
- Deputy Director Transport
- Joint Director Medical Stores
- Chief Accounts Officer
- Administrative Officer

Design and Engineering Wing

- The Chief Engineer
- Superintendent Engineers
- Executive Engineers
- Assistant Executive Engineers
- Assistant Engineers
- Junior Engineers
- Senior Architect

The organizational arrangements for the technical components of the project are described in the relevant annexes.

DISTRICT HEALTH COMMITTEE

- Chief Executive Officer, Zilla Parishad
- District Surgeon
- District Health and Family Welfare Officer
- Lay Secretary

PUNJAB: PUNJAB HEALTH SYSTEMS CORPORATION

BOARD OF DIRECTORS

- The Secretary to the Government, Department of Health and Family Welfare (Chairman of the Board of Directors)
- The Managing Director, Punjab Health Systems Corporation
- The Secretary to the Government, Department of Finance
- The Secretary to the Government, Department of Rural Development and Panchayats
- The Secretary to the Government, Department of Local Government
- A Representative of the Government of India from the Ministry of Health and Family Welfare (MOHFW)
- The Director of Health Services, Department of Health
- A Representative of a Medical Institution of Excellence
- Two Distinguished Experts in Professions related to medicine and health
- An Experienced Professional in Systems Management
- The Director of the National Institute of Pharmaceutical Education and Research
- A Representative of a reputed Industrial House Manufacturing Pharmaceuticals

PROJECT IMPLEMENTATION

- Managing Director (IAS Office, Special Secretary), the Punjab Health Systems Corporation (PHSC)
- Director, Administration and Personnel, PHSC
- Director, Monitoring and Evaluation and Health Management Information System, PHSC
- Director, Medical Services, PHSC
- Director, Medical Management, PHSC
- Director, Engineering Services, PHSC
- Director, Financial Management, PHSC
- Other key staff of the rank of Joint/Deputy/Assistant Directors, Research Officers, and Statisticians who will assist the Managing Director and the six Directors of the PHSC in implementing the project

DISTRICT LEVEL

- District Coordinator, Health Services
- Deputy District Coordinator
- Assistant District Coordinator, Administration (Administration, Procurement, Surveillance, Waste Management, Referral)
- Assistant District Coordinator (Training, Records, HMIS, Stores, Pharmacist)
- Social Worker
- Mass Media Officer
- Junior Engineer
- Assistant Controller, Finance and Accounts
- Superintendent of Office

WEST BENGAL

PROJECT GOVERNING BOARD

- The Chief Secretary to the Government (Chairman)
- The Secretary to the Government, Department of Health and Family Welfare (Vice Chairman of Governing Board and Project Coordinator)
- The Secretary to the Government, Department of Finance
- The Secretary to the Government, Department of Public Works
- The Secretary to the Government, Department of Pandrayat and Community Development
- The Director of Health Services
- Special Secretary to Government, Department of Health and Family Welfare (Project Director)

PROJECT/MANAGEMENT CELL

- The Secretary to Government, Department of Health and Family Welfare (Project Coordinator)
- The Special Secretary to Government, Department of Health and Family Welfare (Project Director)
- Special Officer, Medical
- Special Officer, Non-Medical
- Head of the Strategic Planning Cell
- Director of Health Services
- Additional Director, Administration and Finance
- Additional Director, Engineering and Civil Works
- Additional Director, Health and Medical I
- Additional Director, Health and Medical II
- Joint Director, Accounts/Financial
- Joint/Deputy Director, Equipment Management
- Joint/Deputy Director, Civil Works/Architecture
- Regional Director (Medical), North Bengal
- Regional Director (Medical), Burdwan
- Regional Director (Medical), Presidency
- Deputy/Assistant Director, North Bengal
- Deputy/Assistant Director, Burdwan
- Deputy Assistant Director, Presidency

DISTRICT STEERING COMMITTEE

- Sabhadhipati, Zilla Parishad (Chairman)
- District Magistrate
- Karmadhyakya, Java Swastha Committee
- Chief Medical Officer
- Executive Engineer
- Superintendent of Local Hospital
- Representative of NGO

DISTRICT HEALTH COMMITTEE/PROJECT IMPLEMENTATION CELL

- District Project Officer
- Deputy Project Officer
- Assistant Project Officer , Administration (Administration, Procurement, Surveillance, Referral, Waste Management)
- Assistant Project Officer, Training (Training, Records, Miscellaneous Activities, Stores)
- Social Welfare Officer
- Mass Media Officer
- Accounts Officer
- Engineer Cell

SCHEDULE OF APPOINTMENT OF KEY HEADQUARTERS STAFF AND OTHER PERSONNEL

I. Karnataka

- Additional Secretary
- Additional Director (3), including one for KFW Project in Gulbarga District
- Joint Director (3)
- Chief Engineer
- Deputy Chief Engineer
- Executive Engineer (2)
- Assistant Architect
- Chief Accounts Officer
- CAO

II. West Bengal

Currently Filled

- Principal Secretary (Project Coordinator)
- Project Director
- Strategic Planning Cell
- Additional Director Engineering
- Additional Director, HMIS and IEC
- Deputy Director Civil Works
- Deputy Director Equipment Management
- Deputy Director Accounts/Financial Audit
- Four Office Assistants
- Secretariat staff of Project Director and other officers

To be Filled (by July 31, 1996)

Headquarters

- Additional Director, Administration and Finance (Non-Medical)
- Additional Director, Health and Medical I
- Additional Director, Health and Medical II
- One Regional Director, Medical

District

- District Project Officer
- Deputy District Project Officer

- Assistant Project Administration Officer (District)
- Social Welfare Officer
- Mass Media Officer
- Accounts Officer
- One designated Engineer

To be Filled (by December 31, 1996)

Headquarters

- Special Officer/Assistant Director (Medical)
- Special Officer/Assistant Secretary (Non-Medical)
- Two Regional Directors

District

- Assistant Project Officer (Training)
- Additional officers in the Engineering Cell

III. Punjab

Currently Filled in the Punjab Health Systems Corporation

- Chairman
- Managing Director
- Members of the Board of Directors (appointed/nominated)
- Director of the Strategic Planning Cell
- Health Economist
- Systems Analyst
- Additional Managing Director (Personnel)
- Director Medical Management
- Director Medical Services
- Director Engineering Services
- Manager, Finance/Accounts
- Secretary, Board of Directors
- Deputy Director, Medical Management

To be filled (by July 31, 1996)

Headquarters

- Director, M&E and HMIS
- Director, Financial Management

District (17; one in each District)

- Deputy Medical Commissioners
- Assistant Medical Commissioners
- Junior Engineers
- Mass Media Officers
- Manager, Finance & Accounts
- Superintendent of Office

To be Filled (by December, 1996)

Headquarters

- Jt. Director Personnel
- Jt. Director Purchases
- Jt. Director Quality Audit
- Jt. Director Waste Management
- Executive Engineers for Construction/Maintenance
- Manager (Audit)

District

- Medical Superintendents (remaining 150 institutions)
- Medical Specialists

TRAINING

1. The primary objective of the training component is to improve quality and strengthen the services provided at first referral facilities. The strengthening of services at these hospitals is expected to improve the referral system, provide better quality of services, and reduce the burden on tertiary hospitals in the cities. Each state would implement a comprehensive training program for upgrading skills at rural, sub-divisional and district hospitals.

2. During project preparation, the DOHFW in each state set up a working group responsible for matters related to training and skill development. The working groups are composed of experienced clinicians from rural and teaching hospitals as well as nursing personnel, hospital superintendents and administrators. These working groups conducted a *rapid training needs assessment* study, where teams from the working groups visited a number of secondary hospitals and interacted with the medical and paramedical staff of these hospitals. Each state then conducted a training workshop to discuss the results of the rapid training needs assessment study and developed priority intervention strategies.

3. The working groups' concluded that training programs are necessary for all categories of hospital manpower, including doctors, specialists, nurses and technicians at all levels. It was decided that the program should include training of clinical skills, hospital management, use and maintenance of equipment, hospital record-keeping and reporting, and the functioning of referral system. In addition, the teams identified other types of training where participants would include not only hospital staff, but other state and district level officers. These participants would receive training on IEC, health management information system (HMIS) and on surveillance of major communicable diseases. Additional information on specific training programs are provided in the individual annexes.

4. The working groups considered several factors while formulating a comprehensive training program: (a) the target group to receive training; (b) the issues/subjects that need to be addressed; (c) the number of staff in each category to be trained; (d) the training of trainers; (e) the availability of existing training materials versus the need to develop new curriculum and training modules; (f) the number of trainees each year; and (g) the unit cost of training.

Clinical Training

5. Concept. In order to improve the quality and effectiveness of clinical services in hospitals, the states would establish periodic in-service clinical training for health professionals. The goal of clinical training would be to upgrade skills of health professionals, in order to provide safe and high quality services to clients. Norms for these services were defined for each type of hospital through workshops held in each state.

6. Clinical training deals primarily with obtaining the knowledge, attitudes and skills necessary to carry out a specific procedure or activity. Although this training can be thought of as being effective if it succeeds in conveying information or influencing attitudes, it will have failed if the participants are unable to satisfactorily perform the activity assigned to them. Clinical training would therefore focus on providing the essential facts and attitudes, as well as developing skills required for performing a specific procedure or activity.

7. The training provided would be competency-based training (CBT) or learning by doing. It is based on a social learning theory which states that when conditions are ideal, a person learns most

rapidly and effectively by watching someone (in this case the trainer) perform a skill. The participant later performs the skill under the guidance and facilitation of the trainer. To successfully accomplish CBT, the skill or activity to be taught must be broken down into essential steps. Each step is then analyzed to determine the most efficient and safe way to both teach and learn it. This process is called standardization. Once a procedure has been standardized, competency-based learning guides and checklists could be developed to facilitate learning the necessary steps and provide more objective evaluation of the participant's performance.

8. Training Approach. This project would undertake the CBT approach to clinical training which is based on demonstration, practice, feedback and assessment of the minimum level of competence in performing a job. A combination of three modalities would be used for providing in-service training: short courses, practical training and distance learning packages. In order to do so, responsible working groups in each state would develop curricula suitable for each type of training. These working groups would also design and conduct the training of trainers and develop necessary training modules.

9. Who Will be Trained? A preliminary analysis of the categories of staff and training needs indicates that two distinct categories of training will be provided: (a) updating the knowledge and skills within specialty areas for those who have already had post-graduate training; and (b) updating the knowledge and skills for those who have not received post-graduate training in the identified areas (MBBS, nurses, lab technicians, radiographer).

10. Curriculum Development. Since clinical training will focus on hands-on practice to improve skills in performing procedures, a specific curriculum needs to be developed accordingly. With the assistance of a consultant on clinical training, each state is expected to establish several working groups and conduct workshops to develop suitable curricula for different types of training categories (physicians, specialists and nurses). The members of the working groups would consist of experienced clinicians who are competent in their specialties, physicians who have experience working in rural hospitals and some members from medical colleges. Curricula would be continued to be developed during the early implementation phase of the project.

11. Training Modules. The modules for clinical training would be very specific, including learning objectives and methods, and check lists to evaluate skills. Karnataka, Punjab and West Bengal will first review existing training materials developed by APVVP in Andra Pradesh, USAID-JHPIEGO and WHO, and adapt training materials accordingly. If necessary, the states will assign working groups to develop the specific training modules.

12. Training Site. To train physicians from the community, rural, sub-district and sub-divisional hospitals, the states would assign some district hospitals within the states as training centers. Some of the advantages of such an arrangement would be: (a) conditions at district hospitals are more likely to be similar than at teaching hospitals; (b) training rural hospital physicians at district hospitals is likely to familiarize them with the functioning of the district hospital, thus facilitating the referral process. Suitable district hospitals have been identified. The project will support construction of training facilities at district hospitals, which consist of classrooms, libraries and training equipment.

13. For training of specialists from district hospitals, the states have assigned several teaching and tertiary hospitals as training centers. Further coordination with the staff of medical colleges will be conducted during the first year of the project.

14. Training of Trainers. Trainers who will provide clinical training in each state need to be kept abreast of training technology and familiarized with the specific curriculum and training modules. Training technology that they would have to acquire include: selection and use of appropriate teaching methods for development of psychomotor skills (i.e. patient management procedures); small group teaching methods; acquisition of desirable attitudes; and methods of assessment for evaluation of learning outcomes. For this purpose, the state would organize appropriate short courses for staff of district hospitals and medical colleges who will be serving as trainers in the training programs. Input for such training of trainers will be obtained from institutions such as the National Teacher Training Centers for Medical Education and Research (e.g. JIPMER in Pondicherry, PGIER in Chandigarh, etc.). Funds for such consultant support will be available under the project.

15. Distance Learning Packages (DLP). In addition to the regular training mentioned above, the states would use DLP to improve clinical skills in various areas of specialties. DLPs are training materials designed to be used by physicians and other health professionals to update their skills through independent study. DLPs will help states to update physicians' skills on a regular basis, in a cost-effective way. Since there is no experience in the use of DLPs, a pilot test will be conducted in a small area. For development of the DLP, selected training institutions will be given contracts to develop or adapt DLP appropriate to the training needs.

16. Fellowships. The project will provide several fellowships for trainers to improve their teaching skills, for managers and physicians to attend several short courses outside the country.

17. Phasing of Training Program. The training program will be implemented in a phased manner through the life of the project. The phasing is required both for the benefit of carefully planned training, as well as for avoiding service distortion which could result from many doctors being away at training at the same time. The total cost of the training program is therefore phased out over the five years of the project (see Annex 21).

Clinical Training: Features Specific to Each State

16. Karnataka. At government hospitals, the major cause of death of inpatients (compared to total patients admitted) were as follow: perinatal complications (12.4 %), circulatory system disorders (9.1 %), ill-defined conditions (7.3 %), congenital anomalies (7.0%) and injury and poisoning (4.0%). The working group has focused on improving the clinical skills of the hospital staff in these particular areas while taking into consideration the results of the Workshop on Norms.

17. A priority list of clinical skills for physicians and nurses of community hospitals, sub-district hospitals and districts hospitals were identified and grouped by area of specialty. A plan outlining an approach to updating these skills was completed in order to facilitate the preparation of training manuals. The first priority is in the areas of obstetrics, neonatalogy, internal medicine, surgery and anesthetics. Training for physicians of community hospital and sub-district (Taluka) hospitals will be conducted at district hospitals. A teaching center, attached to each district hospital, will be constructed and completed with teaching aids. Training of the specialists will be done at the teaching hospitals. The clinical training for other areas of specialties will follow after the first priorities have been settled. Table 1 describes the training programs for physicians and various specialties while Table 2 describes those for nurses.

20. Punjab. A transition in the burden of disease is currently underway in Punjab. Data from several medical institutions (1993) showed that 76.5 % of out-patients and 85.7% of in-patients suffered

from non-communicable diseases. Acute respiratory infections were the next frequent reported cases, when both out-patients and in-patients were taken into consideration. The Survey of Causes of Deaths in rural areas (1991) showed that apart from "fever" (24 %) which reflects infected conditions, the other leading cause of rural deaths were circulatory system disorders (17.2 %), degenerative conditions (17%), trauma (11.3%) and respiratory disorders (11%). The working group focused on improving clinical skills of the hospital staff in these particular areas while taking into consideration the result of the Workshop on Norms.

21. The Punjab Health Systems Corporation would give contracts to selected teaching institutions within the state (medical colleges and nursing colleges) to assist the district hospitals in implementing their training program. Under this contract, the teaching institutions will assist the district hospitals in conducting short on-site courses and practical clinical training. Fourteen teaching centers will be constructed and they will be attached to fourteen district hospitals. These facilities will consist of classrooms and library and teaching equipment. The total number of staff to be trained is about 10,000 including specialists, physicians, dentists, nurses and technicians.

22. During the early stages of the project, short on-site courses and some practical clinical training will be provided at the medical colleges or nursing colleges. The trainees will later be posted at the district hospitals to obtain hands-on practical experience under close supervision of college professors. After the project's initial two years, the on-site courses and practical clinical training will shift entirely to the district hospitals. Throughout the training period selected staff from the teaching institutions will be posted at district hospitals.

18. West Bengal. The major cause of death at health institutions, as obtained from the Survey of Causes of Death, 1987 (Model Registration Scheme), were complications of pregnancy and child birth (22.7 %), infection and parasitic diseases (17.6%), ill-defined conditions (13.2 %), diseases of the digestive system (10%) and injury and poisoning (8.7%). The working groups at the state level have focused on improving the clinical skills of the hospital physicians, specialists and nurses in their particular areas, in order to improve their clinical performance and quality of care.

24. However, a survey on the causes of deaths carried out in the Howrah Municipal Corporation in 1993, a typical overcrowded industrial area with a sizable slum population, revealed that the major causes of death were from chronic lung diseases, such as bronchitis, asthma and emphysema (10.5%), cerebro-vascular diseases (8.5%), and pneumonia (7.3 %). The state will emphasize improving the clinical skills in this area.

19. DOHFW would select several teaching institutions within the state to assist the district hospitals in implementing their training program. During the early stages of the project, short on-site courses and some of practical clinical training will be provided at the teaching institutions. The trainees will later be posted at the district hospitals to obtain hands-on practical experience under close supervision. After the initial two years of the project, the on-site courses and practical clinical training will shift entirely to the district hospitals. Throughout the training period selected staff from the teaching institutions will be posted at the district hospitals. The working group has prepared a plan outlining the clinical training program. Table 9-3 describes the training program for various specialties.

Management Training

26. The three states would provide management training for hospital administrators at the secondary level and for state level officers involved with project management. For state level officers, management training will be provided through scholarship programs within India or internationally.

20. Hospital Management. The main objective of this training is to strengthen management knowledge and hospital administrators' skills. The important management issues that will be covered in the training program are: personnel, finance, facility management, equipment management, consumable supplies, information systems and general management. The intention of management training will be to provide practical training to enhance the ability of administrative staff to face day-to-day problems. Details of the program are shown in Table 4.

21.. Training Institution. Management training would be contracted to outside institutions. A specific working group responsible for management training was established in each state during project preparation. This group will continue to collaborate with designated institutions to work on the curricula and training modules.

22. Training Approach. Hospital management training will emphasize analysis of the existing situation. The analytic steps of the process are: problem identification, objective setting, options-appraisal and decision-making. The approach will be a continuing element in future management activities. Case studies based on local situations will be developed for training purposes.

Management Training: Features Specific to Each State

30. Karnataka. In order to improve the administrative capability of hospital managers, the state will organize regular training course for Civil Surgeons, Assistant Surgeons and Nursing Supervisors. The course curriculum and content will be developed in collaboration with management institutions specializing in hospital administration.

31. Punjab. Considering the need for close interaction between primary care providers and other district health officers, Punjab will conduct joint training of hospital managers and primary care providers in addition to the regular management training to be provided under the project.

32. West Bengal. Management training would be provided by one of several training institutions: ATI of Salt Lake, ASCI of Hyderabad, and IIHMR of Jaipur. Up to 10 scholarships have been proposed for state level officials to strengthen management capacity.

Implementation of Training Programs

33. Arrangements for implementation and management of training programs in each state will follow the overall arrangements for project management, as laid out in Annex 8.

34. Karnataka. At the state level, training programs will be implemented and managed by a Deputy Director for Training and Referral. This Deputy Director will be supporting the Joint Director for Hospitals, who in turn will be supporting the Additional Director of Health Systems with the carrying out of project implementation. At the district level, a District Health Committee/Project Implementation Cell would be in charge of supervising the functioning of the health system. A District Surgeon, who

will report directly to the District Health Committee, will plan and implement the training programs for technical staff.

35. Punjab. At the state level, the implementation and management of training programs will be the responsibility of the Joint Director for Training, who will be supporting the Director of Medical Services. At the district level, the nodal implementing agency will be the District Health Committee/Project Implementation Cell. Within this Committee, the Assistant District Coordinator for Training will be responsible for coordinating and implementing training programs.

36. West Bengal. At the state level, there will be an Additional Director for Health and Medical I who will be responsible for the implementation and management of training programs. The Additional Director would be directly under the Special Secretary/Project Director. At the district level, the nodal implementing agency will be the District Health Committee. This Committee will include an Assistant Project Officer for Training, who would be responsible for supervising and implementing training programs.

Table 1 Clinical Training Program for Physicians and Specialists: Karnataka

Category of personnel:	Clinical skill practice	Duration of training	Minimum cases for hands on practice	Training Center
Obstetric:				
Physicians from Community Hospital and Sub-district (Taluka) hospitals.	• Normal obstetrical procedures • Obstetric emergency procedures (section cesarean) MTP procedures	one month	10	District Hospitals
Obstetric and Gynecology specialist from District hospitals	• Management of obstetric critically ill patients	15 days		• A.I.I. M.S, Delhi • Jaslok Hospital, Bombay • JIPMER, Pondichery.
	• Care of new born • Use of incubator • Neonatology	15 days	5	• Vani Vilas Hospital, Bangalore • St. Johns, Bangalore, • St. Marthas, Bangalore
	• Laparoscopy sterilization	one month	20	• Referral Hospital, Bangalore City Corporation
	• Ultrasound Sonography	15 days	20	• Victoria Hospital, Bangalore • Jubilee Nursing Home, Bangalore • St. Johns, Bangalore, • St. Marthas, Bangalore
Neonatal:				
Physicians from Community Hospital and Sub-district [Taluka] hospitals.	• Resuscitation procedure • Management of birth asphyxia	2 weeks	10	District Hospitals
	• Management of premature and Low Birth Weight babies [over 2 kg]. • Use of warmers	2 weeks	10	District Hospitals
Pediatricians (children specialists) from District hospitals	• Management of birth asphyxia • Birth injuries Jaundice Convulsion • Neonatal intensive care	2 weeks	15	• Vani Vilas Hospital, Bangalore • St. Marthas, Bangalore
	• Management of premature and Low Birth Weight babies (less than 2 kg). • Use of incubators, radiant, phototherapy unit.	2 weeks	10	• Vani Vilas Hospital, Bangalore • St. Marthas, Bangalore

Table 1 *(continued)*

Category of personnel:	Clinical skill practice	Duration of training	Minimum cases for hands on practice	Training Center
Internal Medicine				
Physicians from Community Hospital and Sub-district (Taluka) hospitals	• Management of hypertension • Management of burns • Cardio-pulmonary resuscitation • Training on the use of ECG			District Hospitals
Internal Medicine specialists or cardiologist from District hospitals	Management of ICU [Intensive Care Unit] and ICCU [Intensive Coronary Care Unit]	15	10	• Sri Jayadeva Institute of • Cardiology, Bangalore • Wokhardt's Heart Hospital, Bangalore • Manipal Hospital, Manipal • St. Johns, Bangalore • Mallya Hospital, Bangalore.
	Management of critically ill patients	15	5	• A.I.I.M.S, Delhi • Jaslok Hospital, Bombay • Grant Medical Hospital, Bombay • JIPMER, Pondichery.
	Training on the use of Endoscopy	10 days	5	• Bowring & Lady Curzon Hospital, Bangalore • St. Johns, Bangalore
Surgery:				
Physicians from Community Hospital and Sub-district (Taluka) hospitals	Management of injury patients: resuscitation and patient stabilization before referring to other hospital			District Hospitals
General Surgeons from Sub-district hospitals and District hospitals	Management of head injuries	two weeks	10	• NIMHANS, Bangalore • Manipal Hospital, Manipal • CMC Hospital, Vellore
	Management of thoracic injuries	two weeks	5	• SDS Sanitarium, Bangalore • MS Ramiah Medical College Hospital, Bangalore.
	Management of orthopaedics emergencies	two weeks	10	• Victoria Hospital, Bangalore • St. Johns, Bangalore • JJM Hospital, Davanagere • KMC Hospital, Manipal
	Management of critically ill patients	15 days		• A.I.I.M.S, Delhi • Jaslok Hospital, Bombay • JIPMER, Pondichery
	Training on the use of Ultrasound Sonography	two weeks	20	• Victoria Hospital, Bangalore • Srinivasa Screening Center, Bangalore • St. Johns, Bangalore • St. Marthas, Bangalore

Table 1 *(continued)*

Category of personnel:	Clinical skill practice	Duration of training	Minimum cases for hands on practice	Training Center
Anesthesia				
Physicians from Community Hospital and Sub-district (Taluka) hospitals	Administration of general anesthesia and regional anesthesia for normal or non complicated cases	six months	10	• All teaching hospitals in Karnataka State including private Medical College Hospitals.
Anesthetists specialists from Sub-district (Taluka) hospitals and District hospitals	Advance techniques and the used of latest drugs	one week	6	• All teaching hospitals in Karnataka State including private Medical College Hospitals.
Radiology				
Radiologist specialists from District hospitals	• Ultrasound Sonogaphy • Special Radiological investigation • Spectra-photometry	one month	50	• Victoria Hospital, Bangalore • Jubilee Nursing Home, Bangalore
Dental Service.				
Assistant Dental Surgeon (BDS & MDS)	• Management of maxila-facial injuries and fractures	one month	10	• Government Dental College, Bangalore • SDM Dental College, Bangalore
	• Oral Cancer Detection Biopsy & Excision of small lesions & follow up.	one month	10	• Kidwai Memorial Institute of Oncology
Orthopedics				
Orthopedic surgeon (MS or D.Ortho) from District hospitals	• Management of Polytrauma cases	two weeks	10	• Sanjay Gandhi Memorial Accident Complex & Rehabilitation Center, Bangalore • Victoria Hospital, Bangalore • Manipal Hospital, Bangalore
	• Practice in Implant surgeries	four weeks	20	• Sanjay Gandhi Memorial Accident Complex & Rehabilitation Center, Bangalore • Victoria Hospital, Bangalore • Manipal Hospital, Bangalore
Tuberculosis				
TB Specialist	• Pulmonary test	one month	10	• PKTB Hospital, Mysore • SDS TB Hospital, Bangalore

Table 1 ***(continued)***

Category of personnel:	Clinical skill practice	Duration of training	Minimum cases for hands on practice	Training Center
Opthamology				
Ophthalmologist (MS or DOMS) from District hospitals	• Cataract surgery with IOL implementation Keratoplasty	one month	10	• Minto opthalmic Hospital, Bangalore • Lion's Eye Hospital, Bangalore • Narayana Netralaya, Bangalore
	• Micro surgery Use of operating microscope	one month	10	• Minto opthalmic Hospital, Bangalore • Lion's Eye Hospital, Bangalore • Narayana Netralaya, Bangalore
Ear-Nose-Throat				
ENT surgeons (MS or DLO) from District hospitals	• Bronchoscopy and remove of foreign bodies.	three weeks	5	• SDS Sanatorium, Bangalore • St. Johns, Bangalore
	• Micro surgery	six weeks	10	• Basavangudi ENT Center • Chinnammal Memorial Trust Hospital, Madras • KEM Hospital, Bombay.
Skin and Venereal Diseases				
Dermatologist, Skin specialist from District hospitals	Recent advances	15	5	All teaching hospitals

Table 2 Clinical Training Program for Nurses and Lab Technicians: Karnataka

Category of personnel:	Clinical skill practice	Duration of training	Minimum cases for hands on practice	Training Center
NURSES				
Staff Nurses of CHCs/ Taluk/ District Hospitals	* ICCU Nursing Care	15 Days	10	Sri Jayadeva Institute of Cardiology Bangalore
Staff Nurses of CHCs/Taluk/District Hospitals	* Pediatric Nursing	15 Days	10	* Vani Vilas Hospital, Bangalore * Cheluvamba Hospital, Mysore
Staff Nurses of CHCs/Taluk/District Hospitals	* O.T Training	One Month	30	* Bowring & Lady Curzon Hospital Bangalore * K.C.G. Hospital, Bangalore * General Hospital, Jayanagar, Bangalore
Staff Nurses of CHCs/Taluk/District Hospitals	Psychiatric Nursing	15 Days	10	* NIMHANS, Bangalore
Staff Nurses of CHCs/Taluk/District Hospitals	Anesthesia	One Month	5	* All Teaching Hospitals in both Govt. and Private Sectors
Staff Nurses of CHCs/ Taluk/District Hospitals	* Labour Ward Training (in use of Foetal and Maternal Monitors)	One Month	10	* All Teaching & Hospitals Private Hitech Hospitals
Staff Nurses of CHCs/ Taluk/District Hospitals	* Laparoscopy	15 Days	10	* All Teaching Hospitals in both Govt. and Private Sectors
Staff Nurses of CHCs/ Taluk/District Hospitals	Nursing Training in Management of Poly Trauma cases and usage of Orthopedic Appliances including Splints	One Month	10	* Sanjay Gandhi Memorial Accident Complex & Rehabilitation Centre, Bangalore * KMC Hospital, Manipal * St.Johns Hospital, Bangalore * KLE Society Hospital, Belgaum J.J.M. Medical College Hospital, Davanagere

Table 2 *(continued)*

Category of personnel:	Clinical skill practice	Duration of training	Minimum cases for hands on practice	Training Center
Laboratory Technicians				
Lab.Technicians	Procedures of Histo-Pathology	15 Days	30	* All Hospitals attached to Teaching Colleges Including Private Medical College Hospitals
Lab.Technicians	Procedures of Micto-Biology	15 Days	30	* All Hospitals attached to Teaching Colleges Including Private Medical College Hospitals
Lab.Technicians	Procedures of Bio-Chemistry	15 Days	30	* All Hospitals attached to Teaching Colleges Including Private Medical College Hospitals
Lab.Technicians	Procedures of Blood Bank	15 Days	30	* All Hospitals attached to Teaching Colleges Including Private Medical College Hospitals

Table 3 Clinical Training Program for Physicians and Specialists: West Bengal

Specialty	No. of Candidates	Phases	No. of Candidates in each phase	Venue
Medicine	150	5	30	NRS-10 CMC-10 IPGMER-10
Surgery	150	5	30	NRS-10 CMC-10 IPGMER-10
G&O	165	5	33	NRS-11 CMC-11 IPGMER-11
Orthopaedics	75	5	15	NRS-5 B.C. Roy Chil-5 B.C. RoyPolio-5
E.N.T.	75	5	15	NRS-3 CMC-3 RGK-3 CNMCH-3 PGMER-3
Ophthalomology	90	5	18	NRS-5 RIO-5 RGK-5 CNMCH-5 IPGMER-3
Radiology	155	5	31	NRS-6 CMC-6 RGK-6 CNMCH-6 IPGMER-7
Paediatrics	75	5	15	NRS-3 CMC-3 RGK-3 CNMCH-3 IPGMER-3
Anesthesiology	284	9	32	NRS-9 CMC-9 RGK-7 CNMCH-7 IPGMER-4 days by rotation
Dental Surgeon	184	5	33	R. Ahmed-12-8 days NRS-10-3 days CNMCH-11-3 days
Endoscopy	30	5	6	NRS=3 IPGMER=3

Table 4 Management Training Program: Karnataka, Punjab and West Bengal

Management Aspects:	**Focus of training:**
Facility management:	facilities planning, assist registration, planned preventive maintenance.
Personnel management:	recruitment procedures, rules and regulation, supervisory techniques, disciplinary procedures, motivation, team building, group dynamics, training and development.
Maintenance:	planning for preventive maintenance, maintenance of the building, house keeping, monitoring of use and abuse, hospital/medical waste management.
Finance:	government financial procedures, budget planning, accounting system (procedures and practices), budget monitoring and control, internal audit, management of user charges.
Procurement matters:	procurement procedures, and rules and regulations.
Consumable supplies (including drugs) management:	planning for the supplies, procurement, inventory management, usages monitoring, storage.
Information system:	the use of information to improve hospital management, the importance of patients registration, medical records and medical reporting.
General issues:	the role of secondary level hospitals in supporting primary level facilities and referral system, the role of hospital advisory committee, the relationship of hospital with the community, etc.

REFERRAL SYSTEM

Objectives of a Referral System

1. A well-functioning referral system is an institutional mechanism through which patients with complex health problems are identified in a timely and systematic manner and examined, investigated and/or treated promptly at an appropriate health care facility. A multi-tier health delivery system which combines preventive, curative and specialized care works efficiently when the various tiers of the system are linked together through a referral mechanism. It works best when the lowest tier (the primary care level) is easily accessible to the community and provides the bulk of preventive care services as well as the first contact for treating common illnesses. Each successive level provides services that are technically more complex, the higher tier providing technical leadership and support for the lower tiers. Under such a system, the community has confidence in the quality of care provided and patients understand that they will be referred in accordance with their medical needs.

The Current Referral System in the Three States

2. The referral system in Karnataka, Punjab and West Bengal, as in the rest of India, does not function well. The lower tiers are underutilized since patients proceed directly to higher level hospitals for minor illness, thereby overloading the hospitals. Patients perceive the lower level facilities as providing lower quality of services. The Beneficiary Assessment study in West Bengal found that about 2% of the patients at first referral facilities were referred from PHCs.

3. An effective referral system which minimizes by-passing of lower levels of health facilities is desirable. It is estimated that a third of all cases which are currently treated at tertiary facilities could be treated at lower cost at first referral facilities, if those facilities received adequate inputs. Such a system would require:

- services at each level -- primary, secondary and tertiary -- to be clearly defined;
- service at each level to be of a quality promoting confidence among patients;
- patients and the community to have the confidence that patients will be properly referred and promptly transferred to higher levels of health care as needed;
- the public to be made aware of the types of services available at each level of care; and
- procedures to be implemented ensuring that patients do not by-pass lower level facilities.

The New Referral System

4. Under the project, the referral system would be improved through strengthening the following activities: (i) renovating and upgrading hospital buildings to provide appropriate space for services; (ii) upgrading and updating clinical skills of physicians and nurses through an effective training program; (iii) providing ambulances for transporting critical patients; and (iv) installing phone, fax, and/or radio communications. It is expected that these hospitals will become the referral point for the primary health care level.

5. The project would seek to ensure that a much higher proportion of patients coming to first referral hospitals had been seen at PHCs and referred upwards. The project would implement several measures to strengthen the referral system. These include: (a) introducing the use of Referral and Feed Back Cards; (b) implementing the referral guidelines that specify the "what", "when" and "how" of referrals; (c) establishing an incentive system for patients who follow referral procedures; (d) establishing linkages and communications between the first referral hospitals and primary care facilities through regular training and out-reach visits; (e) conducting intensive information, education and communication (IEC) targeted at providers and the community; (f) forming District Health Committees that will monitor the implementation of the referral system.

6. Referral and Feedback Cards. A new system of Referral and Feedback Cards will be introduced. Once a decision is made to refer a patient to a higher level facility, the patient will receive a Referral Card. The Referral Card will provide the patient direct access to the referred hospital. The Referral Card will contain general information about the patient (such as: name, age, address, and gender), clinical diagnosis, purpose of referral, and medical information (such as: examinations conducted, investigations carried out, treatment received and the condition of the patient). At the referred hospital, the patient could report directly to the unit or department to which he or she has been referred, instead of going through the regular Out-Patient Department (OPD). This card will be made available not only at the first referral hospitals but also at primary health care facilities. Alternatively, a special counter for receiving referral patients may be a preferred mechanism.

7. After completion of investigation, treatment or consultancy at the referred hospital, the patient will be reported back to the first facility. The referred hospital will provide the patient with a Feedback Card. This card will include: general information about the patient, final diagnosis, procedures and treatment given, type of investigation conducted, and follow-up advice. No new ticket will be required for patients returning from the referred hospitals.

Referral Guidelines

8. A manual of referral guidelines will be issued to all institutions that will specify procedures to make the system effective and acceptable to the community. It will consist of two parts, administrative guidelines and the referral protocols.

9. Administrative Guidelines. The administrative guidelines are expected to be completed in the first year of project implementation and will provide the following information:

- *location of hospitals* within the state district in order to ensure that referral of patients are made to the nearest hospital;
- *transportation facilities* that could be used for referral, in particular, the kind of transport arrangements that could be required for critical patients;
- *operational hours* of the referral hospitals, particularly, the opening hours of specialist clinics, radiology department, laboratory hours, etc.;
- *examples of Referral and Feed Back Cards*;
- *incentives to the patients* for following the referral procedures.

10. Referral Protocols. The referral protocols will be developed in a participatory manner by a technical group consisting of senior clinical specialists. It will provide information on:

- *service norms* that elaborate the type of services provided at each level of care. During project preparation, each state has streamlined its service norms and rationalized the provision of services at different level of care.
- *patient conditions* are needed to refer patients either for investigation or treatment at higher level facilities for each area of specialization;
- *procedures* to be followed before referring the patients; for example, for critical patients, procedures that would stabilize the patient;
- *counseling for patients* and the family prior to referral (such as: purpose of the referral, benefits from referring the patient to another hospital, location of the referral hospital and timing of admittance, likely events at the referred hospital, cost of medical care, and precautions and preparation to be undertaken by the patient prior to hospital admittance).

11. Incentives to Patients. Efforts will be made to provide incentives to patients in order to encourage proper referral procedures. Referred patients will not need to pay an out-patient fee at the referred hospital. They will be able to report directly to the unit or department to which they have been referred without going through the OPD registration window. The referring hospital will provide transporting at a suitable fee. The Referral and Feedback Cards will serve as tickets at the hospitals.

12. Technical Support to Primary Level. The first referral hospitals will have closer linkages with the primary level health facilities. Certain primary level facilities and community hospitals will be grouped into one zone based on geographic location. An identified district or sub-divisional hospital will be assigned responsibility for providing technical support to that particular zone. Technical support will be carried out through:

- dissemination of referral guidelines to primary level facilities;
- training of staff from primary level facilities and community hospitals at the district hospital or sub-divisional hospital;
- regular meetings to discuss problems in clinical management at the primary level;
- out-reach visits to provide on-the-spot consultation.

13. Strengthening Referral Management. District Health Committees, to be established under the project, will make the referral system operational. The members of these committees will include: a District Surgeon, a District Health and Family Welfare Officer, medical officers from the taluka/subdivisional hospitals level, and superintendents of teaching hospitals, if available. These committees will have the following responsibilities:

- *identifying zones for referral,* which link identified PHCs, CHCs and rural/community hospitals to a particular district hospital, for the purpose of serving as a preferred referral site and providing technical back-up for lower level facilities;
- *monitoring the implementation of the referral system* which will be done by assessing data from referral registers. In addition, the District Health Committees will review feedback from primary care facilities;
- *mobilizing transport for referral needs* through collaboration between the Committee and NGOs or other agencies; and
- *coordinating technical support* for lower level of care, as required.

14. IEC support. An extensive IEC program has been proposed to support the development of an effective referral system. There will be two target groups. The first target will be the providers at the primary level and the first referral facilities. This group would mainly be provided information about the guidelines and functioning of the referral system. The second group would be the community which would be provided with information focusing on the benefits of using the referral system. Additional information about IEC support is described in annex 15.

15. Training. After the guidelines have been finalized, the staff of primary level and first referral facilities will be familiarized with these documents through training. For staff at first referral facilities, referral training will be integrated with clinical training or management training.

Features Specific to Each State

16. Karnataka. The state has selected the districts of Chitradurga and Hassan as pilot areas for implementing the referral system and for introducing the quality assurance program. By the end of the third year, when the upgrading of the physical structure at the first referral hospitals are complete and the clinical and management training program are in place, the referral system will be implemented throughout the state.

17. The state has also developed a plan to improve the linkages between primary and first referral levels. As mentioned earlier, primary care facilities and community hospitals will be included in one zone, and an identified sub-district or district will be assigned to provide technical support for each zone. In Karnataka, technical support will be provided through:

- dissemination of referral administrative guidelines and referral protocols to the facilities;
- regular meetings and briefings with physicians of primary level facilities to discuss problems of clinical management;
- out-reach visits to PHCs and CHCs by consultants from the district hospitals for providing on-the spot consultation for selected cases and practical demonstration of selected management techniques.

18. For tribal communities, the state has proposed annual health check-ups to identify health problems. Those who require treatment or further investigation will get a Referral Card to go to the appropriate health facilities.

19. Punjab. The state has proposed a color coded Referral Card. *Blue* Referral Cards will be used by community and area hospitals, *green* cards by sub-divisional hospitals and *white* cards by district hospitals. At the hospitals, there will be a separate counter or window for accepting referred patients to avoid long waiting time. After registration, referred patients will be guided directly to the concerned specialist for consultation, examination, investigation or further treatment. Referred patients will be given preference over other patients and will be examined by the most senior specialists available.

20. West Bengal. Special attention will be given to establish a referral mechanism for the Sunderbans area, where 8 Block PHCs and 28 PHCs are included in the project. The Government will approach the Zilla Parishads to construct rest houses for the patients and their families. These are not accounted for under the project.

21. Regarding training for the referral system, the state's working group has developed a training agenda. It decided that the persons to receive training will be medical officers, specialists, superintendents, administrators, block medical officers of health (BMOH), nursing staff, ward masters and SWOs. Training for the medical officers, specialists, superintendents and BMOH will be for 3 days, conducted at district hospitals and cover the following materials: service norms at various levels of care; flow of referral mechanism; use of communication; referral guidelines; use of Referral and Feedback Cards; and IEC and HMIS orientation. Training for nursing staff, ward masters and SWOs will be for a day at sub-divisional hospitals and will cover the following materials: arrangement of vehicles for referring patients; filling up Referral and Feedback Cards and explaining to patients the importance of the referral; providing counseling and guidance; and other relevant topics.

QUALITY ASSURANCE PROGRAM IN HOSPITALS

1. Quality Assurance (QA) is an approach to building institutional capacity and organizational culture that focuses on continuous improvements in service delivery and on consumer satisfaction. It is an on-going process that monitors the shortfalls in quality and implements remedial measures to address these shortfalls. A well planned QA program would empower managers, clinicians and technicians to monitor the quality of care provided by their own hospitals and assist in instituting rapid remedial measures wherever shortfalls in quality are noticed. The program will cover as many clinical activities as possible, but will focus on a few selected aspects at the beginning of the project.

2. Quality of care has many aspects, such as care, courtesy and comfort; technical aspects such as safety of care; and managerial aspects such as availability of resources and cleanliness of the facility. To implement a QA program, it is necessary to clearly define indicators for each aspect of quality in order to monitor the improvement over time.

Objectives and Scope of the Quality Assurance Program

3. The states propose to implement a systematic program of quality assurance that covers several aspects of clinical quality, user satisfaction and management of resources. This program will help to ensure that other project interventions, such as improvement of physical buildings, provision of new medical equipment, streamlining of service delivery norms, strengthening of clinical and management capacity and improvement of the hospital information system, will actually translate into better quality of care.

4. Since QA is a new program, each state will identify two districts to be the initial project sites during the first year of project implementation. All hospitals in these two districts will implement the QA program.

5. The QA program would consist of the following components: First, a QA committee would be established at the state level. This committee would develop an overall policy framework for quality improvement throughout the state. Second, several QA working groups would be assigned. These working groups would develop guidelines and necessary tools for implementing QA program in priority areas. These guidelines would be tested in hospitals in two selected districts chosen as pilot sites. After a year, a comprehensive evaluation of the pilot sites would be conducted and necessary adjustments of the guidelines would be made. A state wide implementation would start the second year of the project. Responsible QA officials will work closely with teams responsible for clinical training, management training and equipment provision.

6. Quality Assurance Committee. Each state would set up a State Quality of Care committee. The main task of this committee would be to develop a policy framework for the QA program for the whole state. This committee will undertake the following steps:

- identify influential opinion leaders from among several groups involved in health care delivery at hospitals. This would include professional groups such as: specialists, doctors and nurses; hospital managers, such as hospital directors or superintendents; union leaders; other managerial groups, such as district coordinators; and representatives of the community.
- plan a systematic program of consensus-building among these opinion leaders. This would include holding seminars to give information on the benefits and limitations of QA and workshops to involve opinion leaders in consultative decision making regarding the development of the program.

Seminar and workshop activities would include developing or reviewing indicators, setting standards for quality, and suggesting aspects of quality that should be monitored.

- identify priority areas. The suggested priority areas are obstetrics, pediatrics, medicine, surgery, orthopedics, anesthesia and nursing.
- identify working groups that will work on details of the selected areas of specialty.

7. Quality Assurance Working Groups. Several working groups will be established to work on the details of each area of specialty that has been selected as priority. The members of each working group will consist of specialists in that particular area, hospital administrators and physicians who have worked in lower level hospitals (first referral hospital) These groups will design the quality assessment tools, conduct evaluations of the current quality of services in selected hospitals, develop guidelines for the implementation of QA programs, and monitor the implementation of QA at the pilot sites. Consultants will be appointed to assist the working groups.

Activities to be Undertaken by the QA Working Groups

8. Quality Assessment. The first stage of program development is to establish *procedures for quality assessment*. This involves the development of acceptable standards, key indicators and methods for regular periodic assessment of the quality of selected aspects of care provided in hospitals. The QA working group at the state level will define the priority cases in the areas of medicine, pediatrics, surgery, obstetrics, orthopedics, anesthesia and nursing in which the quality of care will be improved during the life of the project. The criteria for priority selection are the most frequent cases admitted to the hospital or those that constitute a significant burden of disease. Examples include: pediatric cases, acute respiratory tract infections and diarrheal diseases. The group will assign sub groups to work on standards of procedures and identification of suitable indicators for monitoring the quality of service.

9. The steps in setting up quality assessment for the selected areas of focus are: (a) identify suitable indicators for monitoring quality; (b) set acceptable standards; (c) pilot test methods of data collection e.g. routine records, interviews with patients, set-up complaints mechanism, focus group discussions with selected "clients" (women users, community leaders, tribal groups etc.); (d) review data that has been collected and review indicators and proposed standards; (e) establish regular on-going methods of data generation; and (f) establish procedures for reviewing the data and identifying hospitals which have shortfalls in quality.

10. Evaluation of the Current Quality. A detailed analysis will be conducted in selected hospitals, to assess the discrepancies between the standards and the actual practices. Observation guides based on accepted treatment norms would be used to document where patient care fell short of the standard. Based on the results of this analysis, each hospital would develop its own plan of action to correct lapses in technical quality and implement the correction action through direct supervision and on-the-job training. In applying the concept it is important to note *that the evaluation process is not concerned with results that are theoretically achievable if there were unlimited manpower, skills, money or equipment, but rather with optimum results that can be achieved in a particular hospital given the available resources.* QA is concerned with determining the difference between an optimum achievable result, given the available resources, and the result that is actually being achieved.

11. Quality Improvement at Pilot Sites. A Quality Improvement (QI) group will be set up in each of the hospitals. QI groups will be formed from among the staff who are responsible for the provision of care in the area which has a shortfall in quality. The QI groups would identify some performance indicators that are easy to access, such as hospital acquired infection rate, wound infection rate and patient complaint rate. With the assistance of the QA Coordinator, the QI group would: (a) investigate

factors contributing to shortfalls in quality; (b) develop strategies for remedying shortfalls in quality and prepare an implementation plan; (c) submit a report of the investigation and the implementation plan to the QA Committee at the state level; and (d) implement the plan.

12. Criteria Audit. Criteria auditing is a system to assess a hospital's patient care management using criteria which have been developed by that particular hospital. By careful choice of criteria, it is possible to determine whether a procedure was justified, whether the process of care was satisfactory and whether the outcome was as desired. A subject of study, say a disease, would be selected by staff concerned with the subject. The criteria for screening, diagnostic, treatment and outcome would be developed and agreed by the QI group. The criteria are simplified and where possible quantified so that any designated hospital personnel can check whether the criteria have been met. In a case where the criteria have not been met, the QI committee would study the records to see if any departure from the criteria is justified.

13. Medical Audit. In case of disputes or unexpected mortality, a medical audit would be conducted. It examines retrospectively the clinical application of medical knowledge and compares care rendered to preset standard of excellence.

Implementation

14. State-wide implementation of the QA program would be undertaken after the conclusion of the pilot testing. The first step in implementation would be to *train* hospital staff in quality assurance. Staff must be aware of the principles and practical application in their discipline of quality assurance. The training would be a short orientation course about the basic concept and approach in QA or a special course of 1 or two weeks. The next step would be to implement the strategies or actions that will improve the quality or overcome the identified problem.

15. During the implementation, several approaches can be used to help identify the problems within a hospital. Where possible, existing information would be used as part of the review and evaluation. This information would be in the form of incident reports, mortality rates, infections and complications etc. and would usually be generated on a continuing basis. Other information may have to be collected through the use of patient questionnaires, observation or other methods.

Management of QA Program.

16. Management of the QA program in each state will follow the overall management structure as laid out in Annex 8. Specifically, in Karnataka, the Joint Director for Hospitals will supervise the QA program at the state level, while at the district level the District Surgeon will oversee the QA program. In Punjab, the Joint Director for Referral, QA and Medical Audit will manage the QA program at the state level, while the Assistant District Coordinator of Administration will oversee its implementation at the district level. In West Bengal, the Additional Director of Health and Medical I will be responsible for supervising the QA program at the state level, while the Assistant Project Officer of Administration will oversee its implementation at the district level.

17. Project Support. The project will support the activities of QA committee and QA working groups at the state level. This will include: meetings, workshops, consultants, and development of guidelines.

MEDICAL WASTE MANAGEMENT

1. Waste management is a part of the routine hygiene and maintenance activities of a health facility. Basic requirements such as reliable water supply, sanitary facilities, disinfection procedures and equipment are vital to keep a health facility clean and at a satisfactory level of hygiene. Medical waste should be carefully managed -- from the point of generation to final disposal. In most circumstances it is appropriate to consider an incremental approach to addressing medical waste management issues at the institutional level.

2. Inappropriate management of medical waste could cause transmission of HIV/AIDS virus, Hepatitis B or Hepatitis C virus. This could happen through injuries caused by syringe needles or sharp instruments that are infected by contaminated human blood. In addition to the above risks, hospital water sewage could also transmit some diseases such as cholera to the surrounding neighborhoods.

3. Medical waste may be produced in hospitals, health centers, clinics, nursing homes, laboratories, research institutes, veterinary clinics, midwifery and other medical care conducted at home. About 85% of medical wastes are non-hazardous wastes, 10% are infectious and around 5% are non-infectious but hazardous wastes. The amount of waste generated varies by type of facility. In developed countries, waste generated from general hospitals is estimated to be about 2.5-4.5 kg per bed day, while in Latin America it varies from 1.0-4.5 kg per bed day. A recent study estimated medical waste generated at hospitals in Bombay, Delhi and Madras to range from 0.85 to 2.25 kg per bed day.

Classifications of Medical Waste

4. There are several classifications used to categorize medical waste. WHO suggests the following:

General waste:	all non-hazardous wastes, similar in nature to domestic wastes.
Pathological wastes:	tissues, organs, body parts, human fetuses, most blood and body fluids.
Radioactive waste:	solid, gaseous waste contaminated with radionuclides generated from diagnostic or therapeutic procedures.
Chemical waste:	solid, liquid and gaseous chemicals used in diagnostic, experimental work or cleaning and disinfecting procedures. For the purpose of waste handling, chemical waste should be categorized as toxic, corrosive, flammable, reactive or genotoxic.
Infectious waste:	pathogens in sufficient concentration or quantity that could cause diseases.
Sharps:	needles, syringes, scalpels, etc.
Pharmaceutical waste:	pharmaceutical products, drugs, chemicals that have been returned from wards, spilled, outdated or contaminated.
Pressurized containers:	those used for demonstration or instructional purposes, containing gas, aerosol cans.

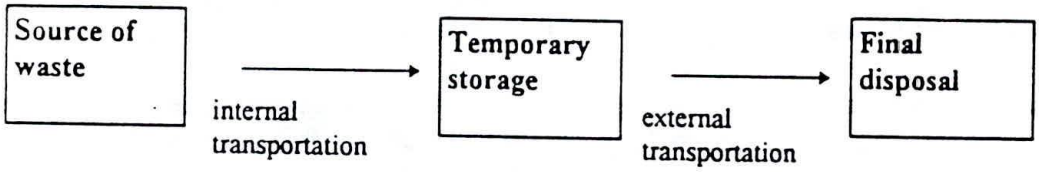
5. Since there is an overlap between some of the categories, it may be advisable for developing countries to use the following simplified classification for practical reasons: i) general wastes; ii) sharps; iii) infectious waste other than infected sharps; iv) chemical and pharmaceutical wastes; and v) other hazardous hospital or

medical wastes. Limiting the number of categories to five instead of eight will limit the number of separate waste collection and storage channels.

The Process of Waste Management

6. In general, the process of medical waste management at a particular hospital could be viewed as shown in figure 1:

Figure 1: Flow of Hospital's Solid Waste



7. Source of Waste. Waste can be generated in the patient ward, operating room, or examination room. At this stage, infectious wastes, sharps and hazardous wastes will be segregated from general wastes and put into different channels for disposal. The segregation of medical waste will be done by putting the waste into different colored bags.

8. Internal Transportation. Internal transportation involves transporting the waste from the point of generation to the place of temporary storage within the hospital. It is important that all colored bags are securely fastened with adhesive plastic tape. The trolleys or carts must have surfaces which are smooth and impermeable, that can be easily cleaned and drained, and that allow the waste to be easily loaded, secured and unloaded. At all times, care should be taken to maintain bags in an upright position to prevent leakage.

9. Temporary Storage. A temporary storage facility should be provided by designating an adequate storage area to store the waste *separately* in accordance with color coded bags before finally disposing the waste. If an incinerator is located within the hospital compound, the storage point should be as close as possible to the incinerator site. The storage room should be kept secure, so that unauthorized persons would not have access to the waste. Also, it should be kept out of the reach of animals, such as dogs, cats and rodents.

10. External Transportation: External transportation involves transporting the waste from temporary storage to the final the disposal site. If the final disposal site, for example, an incinerator, is within the hospital compound then no special vehicle will be needed. However, in certain urban areas the state governments have decided to have one incinerator serve several hospitals, and will make the necessary arrangements for transporting the waste.

11. Final disposal of Solid Waste. Medical solid waste should never be disposed into water because of the risks of polluting the water with chemical and microbiological materials. Therefore, solid waste should be disposed at a land site or by the use of an incinerator.

12. Present Practice. Due to insufficient resources and/or lack of understanding about the effects of medical waste, safety in handling medical waste has not been a priority in the health care system in Indian states. A study of waste disposal in a rural teaching hospital in India revealed the following practices. Normal waste was disposed in an open ground and burnt at irregular intervals. Disposable needles and plastic syringes were discarded along with other general waste. Used surgical dressing, pads, cotton and gauze were disposed

in open ground. Biological waste was treated more carefully, by disposing to the incinerator. Liquid or fluid waste, including blood or other body fluids, was directly discharged into the sewer and sewage system although the hospital was connected to the general municipal waste water system. Chemical wastes from laboratories were washed off with water and discharged into the same waste water system. All types of hospital waste were transported from the point of generation to the main storage through hospital corridors in small uncovered buckets. The waste was not sorted before being transported. The hospital incinerator was operated and maintained by an operator who was not trained with respect to desired temperature, retention time, handling procedures, etc.. In the absence of relevant guidelines, any waste that was brought to the incinerator was incinerated without sorting through the waste. Clearly much needs to be done to improve the management of the waste disposal system at the hospital level.

Project Support

13. The project will support the improvement of medical waste management in a comprehensive manner. This would mean that implementation of existing policies and regulations would be supported with adequate budget, training and monitoring for compliance.

14. Following a review of the existing practices, discussions with state, district and facility level authorities were held to formulate a better approach for medical waste management. The issues discussed included: systems development, development of a state-wide comprehensive plan for disposal of medical waste, and an implementation plan. Key elements of such a plan to be adopted include: segregation of waste using color coded containers; improvement of transportation, storage and final disposal methods; and improvement of the handler's knowledge and handling skill through extensive training. By improving waste management, the risk of affecting human health or the environment would be minimized.

Systems Development

15. The project will support the development of a system to improve medical waste management. At the state level, a Waste Management Unit will be set up and led by a person who has a management background. This unit would be responsible for medical waste and related matters for the entire state, with its main concern being the development of waste management policy, implementation strategies, coordination and monitoring capacity. The expected outcomes of this unit would be as follow:

- Develop state level medical waste policy in line with the environmental protection policy;
- Develop a comprehensive plan for the entire state, which would include all sectors concerned with medical waste;
- Review policy;
- Coordinate inter-sectoral collaboration with regard to medical waste management, particularly in urban areas;
- Develop guidelines related to medical waste handling that include segregation, storage, transportation and final disposal, and
- Monitor implementation.

16. At the district level, the District Health Committee would be the nodal point. The expected capacities on medical waste matters are as follows:

- Supervisory capacity; to make sure that other hospitals or other primary care facilities at the district area are implementing the waste management system;

- Training capacity to provide training for staff who handle medical waste. For physicians, training for medical waste handling would be integrated with the clinical skill training;
- Logistics capacity for storage and distribution of bags and other supplies; and
- Coordination capacity to coordinate the use of incinerators for several hospitals, especially in urban areas.

17. Facility Level. Each state has prepared a plan for improvement of the medical waste disposal for its health facilities. This includes all first referral hospitals, tertiary hospitals and primary care facilities. These facilities would segregate their medical wastes at the point of generation by putting infectious wastes, sharps and hazardous wastes into different colored containers and different channels for disposal. For the purpose of internal transportation, closed storage bins with wheels and wheel barrows will be provided to all hospitals under the project. For final disposal, the states have proposed to adopt three methods: incinerators for large institutions, purolators for small institutions, and burial method in wells or pits for primary care facilities. The plan is provided in Table 1.

Features Specific to Each State

18. Karnataka. Community/rural, sub-divisional and district hospitals would be provided with color-coded closed bins with wheels as containers for segregating medical waste. In addition, wheel barrows will also be provided for transporting the waste to the temporary storage area.

19. All hospitals with 50 beds and above will be installed with incinerators. For small hospitals, such as 30 bedded hospitals, the state has proposed to provide purolators. For large cities (i.e., Bangalore, Mysore and Hubli-Dharwad), the government has proposed to develop special landfills specifically for the disposal of medical waste. In these cities there are many health facilities that could share the use of these landfills instead of installing their own incinerators. It is also proposed that at a later stage the operation and maintenance of these landfills could be financed through cost-sharing among the users.

20. The Government of Karnataka has included the following specifications to ensure the safe operation of the incinerators: (i) all emissions and residues should be pathogen free; (ii) chimneys must be designed and constructed to remove combustion gasses effectively; (iii) incinerators must be safe to operate; and (iv) incinerator capacity and feed rate should be adequate.

21. For small institutions, such as PHCs and sub-center hospitlas, there is no proper provision for garbage removal by the local authorities, even for ordinary garbage. The Government has decided that at these institutions deep pits will be excavated in their back yards which will serve as the final disposal for medical waste. Under the project, specific guidelines will be developed and disseminated to these facilities.

22. Punjab. At present no first referral hospitals are provided with incinerators. With project assistance incinerators of various capacities would be provided to all hospitals based on their bed strength and the amount of waste likely to be generated at these institutions. 30 to 50 bedded hospitals will be provided with incinerators of R_1 type, 100 to 200 bedded hospitals with R_2 type, 400 bedded hospitals with P_{40} and those with more than 500 beds with P_{100} type.

23. At the primary care facilities, including sub-centers, PHCs and CHCs, the state would construct deep pits within the compound of these institutions. The project will support development of guidelines, manuals and conduct necessary training.

24. West Bengal. An assessment was conducted of waste disposal methods in several Calcutta hospitals. The assessment recommended that hospitals should make their own arrangements in dealing with waste generated, since training of municipal staff for this purpose would be difficult. The state has accordingly proposed to adopt methods of medical waste disposal through the use of incinerators, purolators for steam sterilization and K-type wells for the burial system. During the first two years the project will concentrate on first referral hospitals. However, gradually the plan will include guidelines for tertiary and private hospitals.

25. Incinerators will be made available for districts hospitals and some sub-divisional hospitals, where the number of beds are larger than 300. In installing these incinerators, several guidelines from the government, especially from the West Bengal Pollution Control Board, will be taken into consideration. For rural hospitals, the state has proposed the use of the K-type well. The K-type well is well-lined with earthen rings or concrete rings. The well has annular concrete steining and is plugged at the bottom. A concrete cover with locking arrangement will be provided on the top.

26. Training. The Government of West Bengal has developed a strategy for conducting training on medical waste management. Training of the hospital superintendents will be incorporated in the Hospital Management Training Program; training for doctors, nurses and technicians will be integrated in the clinical skill training program. A program for one day training at sub-divisional and district hospitals would be developed for ward masters and sweepers.

Table 1: Waste Disposal System

	Nature of waste	System of Segregation[1]	Final Disposal			Remarks
			D.H.	S.D.H.	C.H/R.H.	
1.	**General Waste** Paper, kitchen waste, residential, hospital campus waste	Color coding Black bin/trolley	Disposable through Municipal system	Disposable through Municipal system	Burial in land-fill or K-type well	
2.	**Sharps, needles, scalpels, scissors**	Special container for sharps, then put into yellow bags	Incinerators	Incinerators	Incinerators	Staff handling this type of waste will be trained
3	**Infectious waste:** Waste from operating rooms, isolation rooms, dialysis rooms, human tissue, maternity wards, etc.	Yellow bag	Incinerators	Incinerators	Incinerators	Staff handling this type of waste will be trained
4	**Chemical and Pharmaceuticals**: Drug section or hospital dispensary	Expired medicine will be returned to companies or disposed in yellow bags	Incinerators	Incinerators	Incinerators	Staff handling this type of waste will be trained
5	**Other hazardous :** Culture from laboratory	Autoclaved at source and put into yellow bag	Incinerators	Incinerators	Incinerators	Staff handling this type of waste will be trained

Note: [1)] the color of the bags or containers would vary by states.

EPIDEMIOLOGICAL SURVEILLANCE OF COMMUNICABLE DISEASES AND HEALTH MANAGEMENT INFORMATION SYSTEMS

A. Epidemiological Surveillance of Communicable Diseases

1. Epidemiological surveillance is the ongoing and systematic collection, analysis and interpretation of health data in order to describe and monitor health events. Surveillance activities include data collection, data compilation and processing, interpretation, actions taken and feed-back (see Chart 1). The project will address only major communicable diseases, and the diseases to be monitored will vary by state. Explicit criteria for these communicable diseases will be defined to avoid any ambiguity in reporting by different institutions.

2. Under this project, the states will establish a comprehensive and effective surveillance system, which would aim at describing health events over time in a simple, flexible, acceptable, sensitive, and accurate manner. The main purpose of this effort is to strengthen the capacity of district and state level health administrations to monitor major communicable diseases and to prevent an outbreak or epidemic. The development of a surveillance capacity and response capability for major communicable diseases will focus on the following steps: identification through education of health workers and community involvement; indexing of cases or isolation of cases and treatment; and tracing of contacts for monitoring and evaluation. In the long-term, however, the surveillance system would need to be expanded to include preventive examinations and immunization of groups most likely to be infected; and an enhanced response capability in case of outbreaks or epidemic. This project would fill some of the gaps in the national disease programs by linking the three elements noted above and by providing treatment at the secondary hospital level.

3. In order to achieve these objectives, the states will institute the following approach: (i) enhance data collection from various facilities; (ii) promote community involvement in data collection; (iii) define and strengthen those organizational structures at district and state levels which are responsible for surveillance; (iv) strengthen the capacity and capability of district level health administrator to analyze and interpret data; (v) enhance the district level health administrator capability to provide a rapid response to problems; and (vi) strengthen collaboration between district and state level health administrators and various service delivery facilities.

4. A working group was established in each state to conduct an assessment of the existing surveillance system. Currently, a basic surveillance system exists at the primary health care level at public facilities in Punjab, Karnataka and West Bengal. This surveillance system covers subcenters, PHCs and Block PHCs. However, at the secondary or tertiary level there is virtually no surveillance mechanism. The diseases that are reported and monitored at the primary level are mostly vaccine-preventable diseases. Communicable diseases, which are treated at the secondary level, are therefore not monitored by any institution.

Concept

5. Data Collection. The comprehensive surveillance system proposed in the project will cover all health care facilities, both public and private, throughout the states. The working group recommended that the existing surveillance activities at the primary care level be integrated into the proposed state surveillance system. The system will collect information on specific communicable diseases from these facilities through *regular reporting forms*. In addition to the routine data collection, special efforts are being proposed by the states. In rural areas of *Punjab*, information from the community level regarding

communicable diseases will be collected by the multi-purpose health workers (MPHW, male and female) during their routine field visits. *West Bengal* will introduce a stamped red card for quick transmission of information when a case of communicable disease occurs. The card will contain essential data (name, age, sex, address, etc.) of every patient who suffered or died from the disease. As soon as a case is detected, the card will be completed by the health provider and posted to the District Surveillance Unit. In *Karnataka,* taluka hospitals will monitor surveillance reports from primary care facilities within their areas. Anganwadi workers, school teachers and Gram Panchayat members would provide community level information for the surveillance system.

6. During project preparation, the states designed formats for daily, weekly and monthly reporting of the incidence and prevalence of the identified diseases. Before implementing a state-wide program, these formats will be tested in a pilot area of each state. At the hospital level, the project will strengthen the information system on out-patients and in-patients. In addition, the project will introduce a surveillance mechanism which will enable reporting of certain communicable diseases which are treated at the hospitals through the regular reporting system.

7. Strengthening District Level. At the district level, a District Surveillance Unit will be established. This unit will receive reports from various facilities within the districts, process and analyze the data, and provide information on trends of the monitored diseases. The Unit will therefore be able to provide early warning signals of epidemic outbreaks and alert the other officials within the district about the situation. The Unit will perform the following functions:

- Act as a nodal surveillance unit at the district level, receiving regular reports from private as well as public facilities (primary health care facilities and hospitals). In addition, the Unit will receive red cards directly from health facilities, in case any communicable disease is identified;
- Analyze the data and review morbidity and mortality trends of the monitored diseases from time to time;
- Provide early warning signals of epidemic outbreaks and alert the health officials about the condition;
- Coordinate with other related government agencies and local bodies, such as PWD, Fishery Department, Irrigation Department, Indian Medical Association and Zilla Panchayat.
- Assist local health facilities when there are increased cases, in order to overcome the problem and prevent spreading of the disease to other areas; and
- Send regular reports to the state level and provide feedback to health facilities.

8. These district units will be headed by an epidemiologist and consist of sufficient technical staff including an entomologist, microbiologist, statistician and medical officers. The units will be equipped with a computer and specific software (e.g. Epi-Info) to process the incoming data from public and private facilities within the district. The program will provide information on morbidity and mortality patterns of the specific monitored diseases. In the event of an increase in the number of cases or deaths, necessary action will be taken immediately.

9. State Surveillance Unit. A State Surveillance Unit will be established at the state level This Unit will become a nodal office for epidemiological surveillance of the entire state. Chart 2. shows the flow of reports of various facilities from the district level to the state level. In *West Bengal*, the State Bureau of Health Intelligence (SBHI) will be strengthened and function as a state unit, while in *Karnataka*, the state has proposed to transform the Health Intelligence Unit, presently functioning in the Directorate of Health, into the State Surveillance Unit.

10. Additional Staff. Table 1 shows the staffing pattern proposed by each state for the District Surveillance Unit and State Surveillance Unit. These posts will be filled through transfer of existing staff and new recruitment. *Karnataka* has proposed the establishment of 20 District Surveillance Units. About 100 additional staff will be required for these districts. These include entomologists, micro-biologists, statisticians, medical officers and drivers. The district epidemiologist post will be filled by existing staff. *Punjab* has proposed that all hospitals with 100 beds or more have a Health Supervisor to fill out necessary report forms and undertake any case or outbreak investigation under the supervision of a Senior Medical Officer or District Epidemiologist.

11. Training. An extensive training program has been designed by each state to support the effectiveness of the surveillance system. The training for District Epidemiologist and key officials of State Surveillance Units will be trained at the National Institute of Communicable Diseases (NICD). Health officials from various facilities will be trained at the district level (District Surveillance Unit) with focus on the surveillance system and familiarization with reporting forms. For community-based reporting the training will be conducted by the District Surveillance Unit.

Features Specific to Each State

12. Karnataka. The state will transform the Health Intelligence Unit, currently functioning at the Directorate of Health, into the State Surveillance Unit. Presently there are several Joint Directors (JD) dealing with communicable disease, i.e., JD of Communicable Diseases, JD for Malaria, JD for Tuberculosis and JD for Leprosy. These Joint Directors are responsible for prevention and control activities, including surveillance of these particular diseases. It was proposed that the status of Joint Director of Communicable Disease, within the newly structured State Surveillance Unit, will be upgraded to that of an Additional Director post (see Chart 2 of Annex 8). At the district level, surveillance activities related to the project will be coordinated by the District Surgeon and existing surveillance of the vertical program will continue to be monitored by the District Health and FW Officer.

13. Punjab. At the state level, an Epidemiological Cell will be created and will be under the coordination of Punjab Health System Corporation's Director of Medical Management. At the district level, the surveillance activities will be headed by Assistant District Coordinator, Administration.

14. At the hospital level, there is currently no infrastructure for conducting surveillance of communicable diseases. It is proposed that all hospitals with 100 beds or more have a Health Supervisor, who will fill out necessary report forms and undertake any case or outbreak investigation under the supervision of the Senior Medical Officer or District Epidemiologist. This supervisor is also to provide feed-back to the peripheral workers in the lower level facilities.

15. With regard to surveillance training, the Corporation will train State and District Epidemiologists at the National Institute of Communicable Diseases (NICD) for one month. The training of the SMO and MO will be arranged at SIHFW Kharar, Family Welfare Training Center, Amritsar, for a period of 5 working days. Health supervisors and other staff will be given training within their district for about 2 days. The period of training can, however, be increased depending upon the feed-back received.

16. West Bengal. At the state level, surveillance activities supported by the project will be coordinated by Additional Director Health & Medical II (see Chart 6 of Annex 8). At the district level,

it will be under the Assistant Project Officer, Administration. Opportunities for involving the private sector will be explored.

B. Health Management Information System

17. The Health Management Information System or HMIS is a mechanism for monitoring health information which assists organizational needs, program implementation and monitoring, problem solving, and system integration. The advantage of having an HMIS is that it allows for gathering, processing, and analyzing of health data and provides quick insight into health performance indicators. This in turn assists the implementation of programs that contribute to the improvement of health status. Moreover, the improved data availability and linkage throughout the health care system allows for better management and more efficient resource allocation. It also facilitates better monitoring of performance indicators and surveillance of major communicable diseases

18. Under the project, the state's HMIS will be strengthened by: i) making provisions for the linking and sharing of health data at the three health care levels through computerization; ii) improving the hospital information system; iii) strengthening the district level capacity to analyze data; and iv) providing training for data analysis and computer use.

19. Computerization of HMIS. The states will install computers at three levels: state head quarters, district levels and at selected hospitals. Information will be passed between all three levels and in the long run the computers themselves may be actually linked through a network. At the state level, the project will provide a Local Area Network (LAN) with a server and several work stations. This will data from the districts; ii) analyze the data gathered; iii) provide feedback to districts; and iv) back-up data allow the state head-quarters to: i) act as a nodal point for the compiling of gathered. The state head quarters will also be responsible for development of software modules for the state-wide HMIS and function as a training center for the district level. At the *district level*, one or more computers will be installed to facilitate the entry of data from hospitals and perhaps PHCs. The district level HMIS will also have limited capacity to analyze gathered data, before passing it to the state level. At *selected hospitals*, a computer would be installed which will assist patient admission and registration, patient and hospital accounting, management of medical records, patients care, office automation, inventory; and overall administration. Synthesized hospital data will be sent on a regular basis to the district level.

20. Improvement of the Hospital Information System. The states will improve the hospital information system through: i) development of standardized formats for in-patient records, out-patient cards, registration and other forms; ii) revision of monthly/annually reporting format to be submitted by hospitals; iii) improvement of storage facilities for medical records, and iv) training of medical records person. The project will provide computers for selected hospitals.

21. Strengthening of District Capacity. In addition to computers installation, HMIS staff will be trained to perform limited data analysis. The analysis will focus on evaluating performance indicators, such as hospital activity, and efficiency indicators of all hospitals available in the district. However, some analysis related to diseases surveillance will also be conducted by the HMIS staff. A software package will be available at this level.

Management

22. In implementing HMIS, each state will have its own structure arrangement as shown in Charts 2 to 6 of Annex 8. The structure will consist of two layers, district level and state level. Punjab and West Bengal will have special directors responsible for the HMIS, while in Karnataka HMIS will be a part of the Hospital Directorate. The following paragraphs will explain specific arrangement for each state.

23. Karnataka. At the *district level*, HMIS will be under the management of the District Surgeon. The District Surgeon will have several responsibilities that are project related, including monitoring the referral system, planning and monitoring training activities, and surveillance of communicable disease. At the *state level*, a Deputy Director will be appointed to manage the state HMIS unit. This unit will maintain performance indicators of 202 hospitals included in the project. The Deputy Director will report directly to the Joint Director of Hospitals.

24. Punjab. An Assistant District Coordinator, Training, will be appointed at the district level to administer several activities, including HMIS, training and medical records. He or she will report directly to the District Coordinator as shown in Chart 5 of Annex 8. At the state level, there will be a special director, Director ME and HMIS, who will be responsible for the monitoring, evaluation and information system.

25. West Bengal. At the district level, HMIS will be placed under the Assistant Project Officer for Administration. This officer will coordinate several project activities including the improvement of HMIS, surveillance, referral system, and waste management. At the state level, an Additional Director HMIS & IEC will be responsible for the development of HMIS in the whole state.

Chart 1: Surveillance Elements

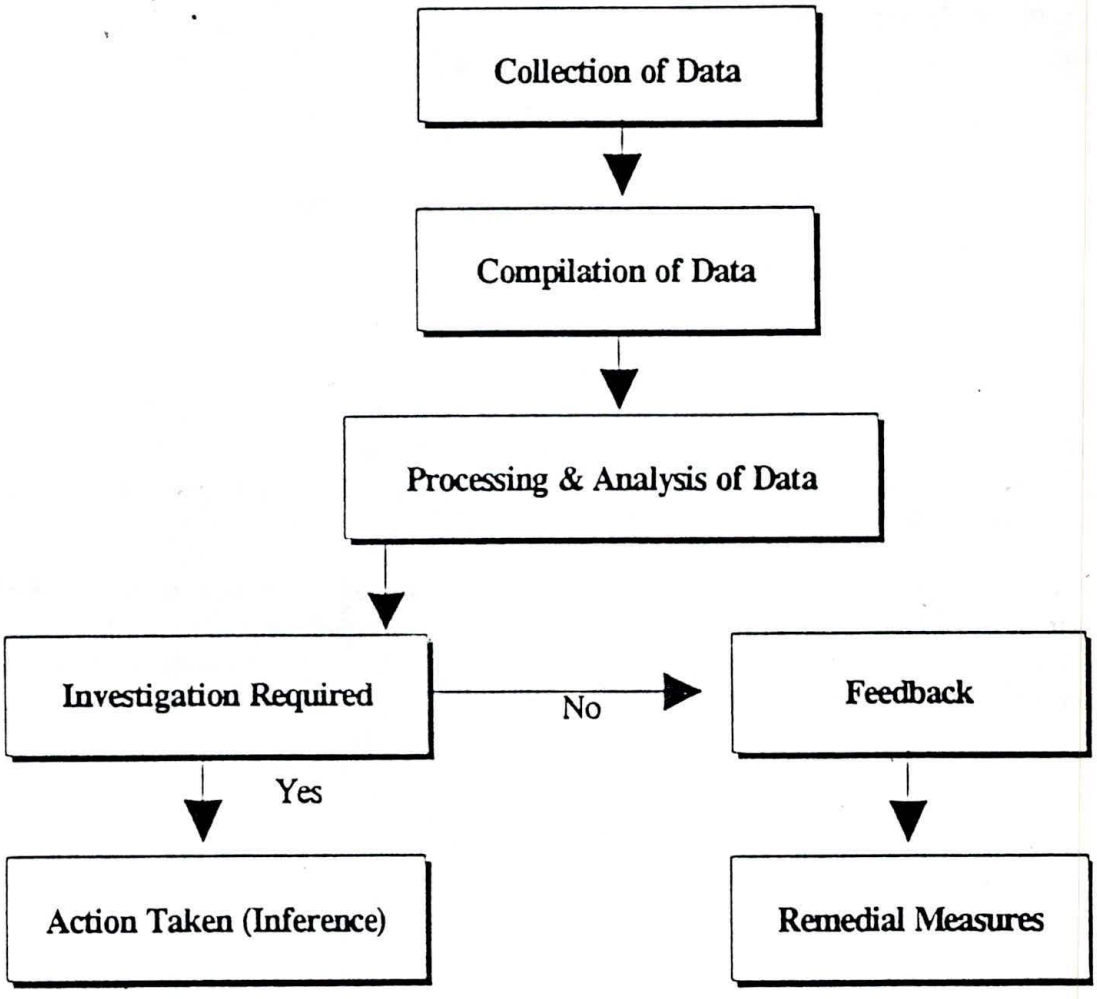


Chart 2 : Proposed Flow of Reports

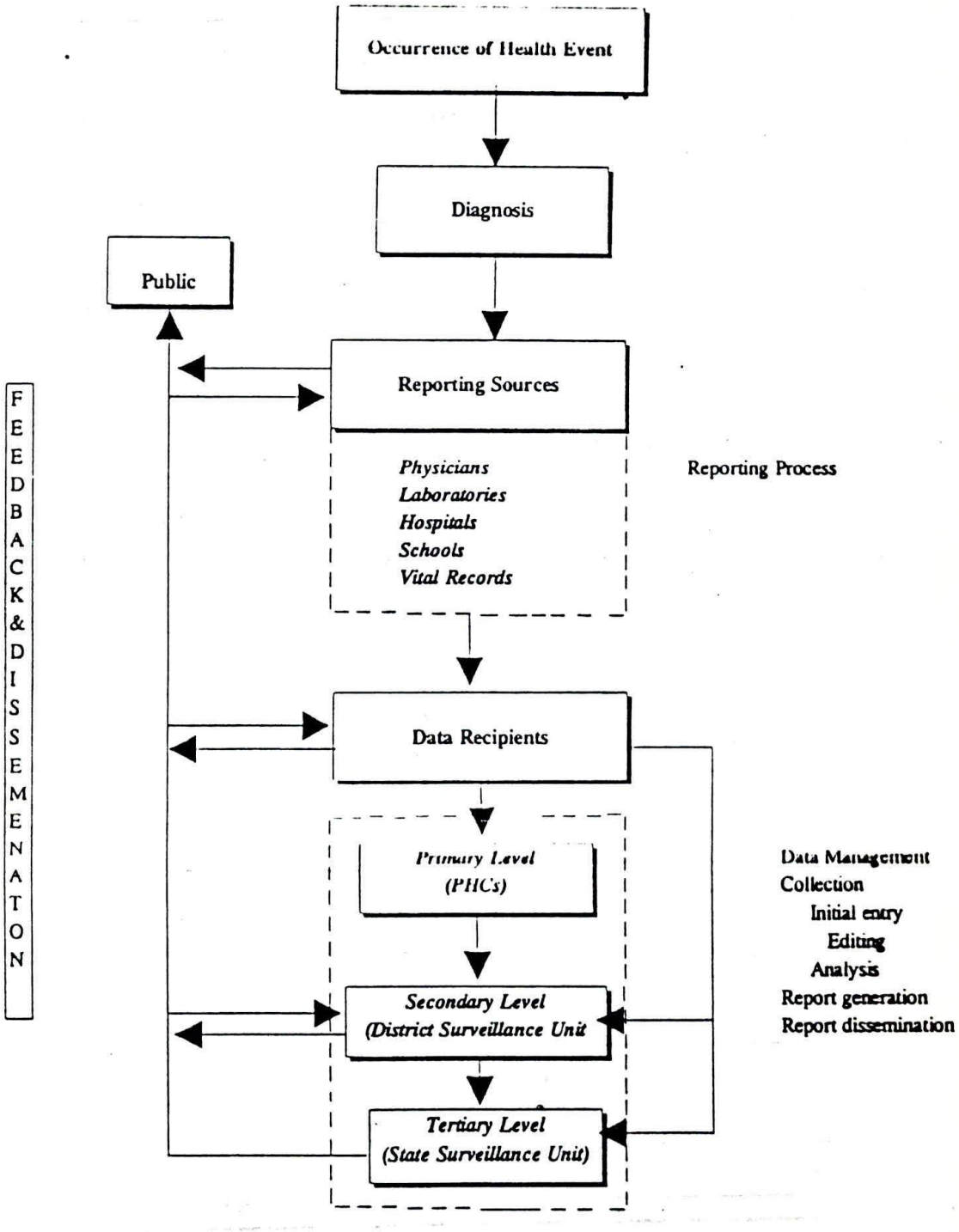


Table 1: Staffing Pattern for Surveillance Systems

Punjab	Karnataka	West Bengal
District Surveillance Unit		
Medical officer Health Entomologist Insect collector Health assistance [M & F] Driver	Micro-biologist Ass. Entomologist Ass. Scientific Ass. Statistic Typist Insect collector Health Supervisor Ass. Health	
State Surveillance Unit		
Deputy Director Malaria Epidemiologist Malaria District Malaria Officer Medical Officer Entomologist Insect collector		

Table 2: Major Communicable Diseases To Be Reported

	Karnataka		Punjab		West Bengal
1	Japanese Encephalitis	1	Poliomyelitis	1	Polio
2	Kyasanur Forest Disease	2	Measles	2	Measles
3	Cholera	3	Tetanus: a. Neo-natal tetanus b. Others	3	Viral hepatitis
4	Gastro-enteritis	4	Viral Hepatitis	4	Japanese encephalitis
5	Plague	5		5	Tetanus (neonatal and others)
6	Tuberculosis	6	Diphtheria	6	
7	Malaria.	7	Enteric Fever	7	

Table 3: Cost of HMIS in Project States

	PUNJAB			WEST BENGAL			KARNATAKA		
	State Level	District Level	Hospitals	State Level	District Level	Hospitals	State Level	District Level	Hospitals
Facility	$100,000	$140,000	$140,000	$100,000	$170,000	$500,000	$100,000	$200,000	$260,000
Computer Equipment	$41,000	$84,000	$84,000	$41,000	$102,000	$480,000	$41,000	$60,000	$240,000
Software	$16,000	–	$14,000	$16,000	$17,000	$80,000	$16,000	$10,000	$40,000
Staff (2 yrs)	$72,000	–	–	$72,000	–	–	$72,000	–	–
Oper /Recur	$50,000	–	–	$50,000	–	–	$50,000	–	–
Training	$10,000	$10,000	$5,000	$10,000	$15,000	$20,000	$10,000	$15,000	$10,000
Total Sub-Levels	$289,000	$234,000	$243,000	$289,000	$304,000	$1,080,000	$289,000	$285,000	$550,000
Total Overall	$757,000			$1,673,000			$1,124,000		

INFORMATION, EDUCATION AND COMMUNICATION STRATEGY

1. The information, education and communications (IEC) component of the proposed project will serve as a vital link between the various activities of the project, such as the referral mechanism, the tribal strategy, the gender component, and the beneficiaries of the project. Specifically, the objectives of quality improvement and increased accessibility to health care services require an enhanced level of knowledge and awareness amongst the beneficiaries which can be facilitated by a well-designed and effectively implemented IEC component. The IEC strategy, including target groups to be addressed, key messages to be transmitted to each group, and media to be utilized, has been fine-tuned on the basis of the data obtained from the Beneficiary Assessment studies undertaken in each state. An assessment has also been made of the manpower and other resources required to implement the strategy, and the administrative and management arrangements within the DOHFW and PHSC which will be utilized to coordinate the development and implementation of the IEC strategy. The linkages between the IEC component and other project components which will be addressed directly by IEC, such as the referral mechanism surveillance system, the quality assurance program and the tribal strategy, have been clarified.

Objectives

2. Improving Access to Health Services. Access to health services is dependent not only on physical distance and cost factors, but also on the levels of awareness and confidence that exist in the minds of the beneficiaries -- particularly Scheduled Caste/Scheduled Tribe (SC/ST) and other disadvantaged groups -- with regard to the quality of services provided by the health care facility and its staff. An important dimension of this is the sense of "care, courtesy and comfort" that patients perceive throughout their interaction with the health care system. Enhancing the willingness of beneficiaries to seek health care in a timely manner would be an important objective of the project.

3. Improving System Performance and the Quality of Services. The provision of additional facilities, equipment and clinical as well as technical training is expected to result in a significant improvement in the quality of service delivery. In this context, the IEC strategy will interact closely with some of the key components of the proposed project to enhance their efficiency and effectiveness. For example, IEC will be used to disseminate information on the functioning of the referral mechanism to be strengthened under the project, and reduce wastage of time and resources by directing patients to the appropriate level of care. The IEC component will also form linkages with the surveillance system and HMIS which will be put in place under the project. This will give the IEC agency access to vital information regarding the prevalence of communicable diseases and other vital information in the states. Such information can be utilized to target IEC messages more effectively. The IEC strategy will also take into account the objectives outlined by the tribal strategies for health in Karnataka and West Bengal. It will be ensured that the design of the IEC component assists in achieving the objectives of the tribal strategy.

4. Improving Efficiency in the Allocation and Use of Health Resources. Since resources are currently being used to provide free services to some people who can contribute to the costs, allocative efficiency will be improved by increasing the health system's capacity to recover a part of these costs. However, willingness to pay is a function not merely of ability to pay but also an assessment of what is being paid for. The communications strategy would contribute to allocative efficiency by raising the willingness of specific groups to pay user charges for selected services.

Communications Strategy

5. Six broad strategies are proposed for the component: (a) increase awareness of the services provided by first referral hospitals, particularly among lower income and disadvantaged groups (such as tribals), and thereby increase utilization of the system; (b) improve access to the expanded range of all reproductive health services among women; (c) motivate all hospital staff to maintain good standards of patient care in terms of "care, courtesy and comfort" so that the quality of services received by patients is enhanced; (d) sensitize hospital staff to hospital equipment maintenance issues; (e) promote hospital services to specific groups in a manner that increases their willingness to utilize these services and, where possible, to share in the costs of service delivery; and (f) address specific public health issues in each state such as road safety, alcohol abuse, healthy diet (particularly in Punjab), women's issues etc.

6. The strategy has been developed on the basis of decisions made with regard to: (a) identification of target groups; (b) selection of messages; and (c) selection of media. The rationale for each of these categories is as follows:

7. Target Groups. Five groups will be included in the target audience. First, government functionaries working at the grass roots level -- anganwadi workers, gram sevikas, school teachers, agricultural extension workers and multipurpose health workers -- would be targeted for information pertaining to the availability of different types of health care at different levels within the health care system. These workers are likely to be seen as opinion leaders by the populations they serve and they can be key information sources in spreading knowledge about the availability of services and the referral system. Second, women would be considered as a priority target, since their access to health facilities is comparatively low. They are, in addition, managers of the health status of the household and have demonstrated their ability as a group to mobilize the community. Third, patients who enter the hospital system would be considered a priority target. Their word-of-mouth based on their first-hand experience will carry far more weight than any other channel of communication. The imperative of creating satisfied customers, and thereby expanding the demand for services, particularly in tribal areas, must be recognized for the communication strategy to succeed. Fourth, private practitioners and NGOs would be targeted because of their potential role in referring patients, and because they should be aware of the improved standards of care in first referral hospitals. Fifth, the population in the Sunderban Area of West Bengal and SC/ST groups in Karnataka will be targeted, to raise awareness in those communities of the increased access to and improved quality of primary health care services now available to them.

8. Messages. The content of the messages that comprise the IEC strategy will vary based on factors such as geography, seasonality and local considerations. For example, in Punjab, where the incidence of non-communicable diseases such as cardio-vascular disease and cancer is particularly high, IEC will focus on prevention and treatment of such diseases; in Karnataka, where there is a relatively high incidence of traffic accidents, IEC will focus on issues of road safety as well as the availability of emergency facilities at first referral hospitals. In Karnataka and West Bengal, where tribal populations are significant project beneficiaries, IEC will focus on disseminating information to tribal groups about service availability, timing of OPD and other facilities, user charges and the referral mechanism.

9. Media Selection. Media selection would depend upon the outreach of different media to the various target groups. One of the most important media for the IEC strategy is the employees of the health care institutions. The manner in which they treat outpatients, inpatients and visitors will have the greatest impact of all the possible channels that may be employed. It will, therefore, be essential to provide training on communication and education to staff on patient and visitor handling. Training modules are being developed for this purpose. Further, training inputs will be sustained and supplemented through periodic internal "campaigns" to remind employees of their role in delivering quality health care. For the potential beneficiaries, the priority medium would be functionaries working in health and related sectors, who will be given in-house tours to enable them to understand the changes that have been instituted within the hospitals. Such tours would also be arranged for the elected Gram Panchayat and Zilla Panchayat representatives. The IEC strategy would also focus on periodic waves of printed communication to higher levels in the Health Department and in hospitals. Finally, the use of well-designed signs within hospitals, as well as in PHCs, providing information on what services are available and where, would be used as an efficient and low-cost medium.

Implementation

10. There is a full-fledged IEC wing functioning within the Health Department of each state. However, they have been focusing on Family Welfare and MCH related activities. There is also a Health Education wing functioning under the Health Department. This wing will provide support to the IEC wing in the development and implementation of the IEC strategy. In addition, professional communications agencies will also be used on a contractual basis to develop IEC materials and will coordinate their activities with an official designated by the IEC wing to the project.

11. In Karnataka, the IEC strategy will be coordinated by the Deputy Director (Hospitals North) and Deputy Director (Hospitals South) at the state level. At the district level, the Mass Media officer would be in charge of disseminating IEC material and would report to the District Surgeon, who serves as the coordinator of all project activities at the district level.

12. In Punjab, a new post of Deputy Director, IEC (mass media) has been created at the state level. This officer would work under the Director M&E and HMIS. The Mass Media Officer at the district level would be responsible for dissemination of IEC material in a particular district, and would report to the Deputy Medical Commissioner.

13. In West Bengal at the state level, IEC is the responsibility of the Additional Director, HMIS and IEC, who would report directly to the Project Director. At the district level, the Mass Media Officer would be responsible for IEC activities in a particular district, and would report to the District Project Officer, who would coordinate all project activities at the district level.

Timing

14. It is proposed that communication activities will be commenced in a phased manner. Some aspects of the IEC strategy, such as the public health and gender components, would begin early in project implementation. More project specific aspects will be implemented after enhancement of physical premises, equipment upgradation and manpower development steps have been completed since prematurely initiated IEC activities can be counter-productive.

TRIBAL AND UNDERDEVELOPED AREAS STRATEGY

1. Introduction. In both Karnataka, with a 3.3% Scheduled Tribe population, and West Bengal, with a 5.9% Scheduled Tribe population, tribal peoples would be substantial beneficiaries of the proposed project. Punjab does not have a tribal population. During project preparation, a number of workshops were held to facilitate stakeholder identification of health care problems in rural as well as tribal areas as well as to develop, through a process of consultation, an appropriate tribal strategy for Karnataka and West Bengal. In addition, Beneficiary Assessment studies, involving the informed participation of tribal groups, have been undertaken in tribal and rural areas of Karnataka and West Bengal and have: (i) provided a social context analysis for establishing the current distribution of and access to health care facilities in rural and tribal areas; (ii) provided an institutional analysis to understanding the supply factors which adversely affect health care utilization; and (iii) assessed the perception and attitudes related to health needs and health seeking behavior of tribal populations (see Annex 17 -- Social Assessment).

2. Health Awareness and Related Behavior Among Tribal Populations. An important finding of the study is the low hospital utilization rates of the tribal and rural population in both Karnataka and West Bengal. The study also focused on the following issues in the two states:

- *Physical Access*. Clearly, hospital services provided by the Government are inadequate in rural areas. Distance traveled to reach first referral hospitals seems to be an important factor in determining utilization. Community hospitals in tribal areas are located very far from tribal hamlets, with poor transportation and communication facilities, and often with no convenient residential arrangements for the medical personnel. Non-availability of staff, particularly doctors, is stated to be the most important reason for preferring private medical care over Government hospitals. In addition, the insensitivity of medical personnel strongly influences the community's confidence in them. Especially in emergency situations, the easy accessibility and ready availability of quacks or underqualified doctors is a major determining factor of community preference for their services. Another important issue is the non-availability of necessary drugs and medicines at first referral hospitals, particularly for curative care, which has been identified as a major constraint to patient satisfaction. The community, however, seems to be willing to pay for the medicines provided by the hospital staff.

- *Social Access*. Results from the qualitative survey conducted in the two states indicate that tribals have a special set of social beliefs and practices which affect their health seeking behavior. "Illness" was perceived as an inability to discharge one's daily duties. Illness was reported earlier amongst children than adults. Gender differentials were less common until the age of 12, after which it was observed that illness among girls was reported late. An estimated 30% of tribals still approach the traditional healer first, and go to a hospital only if the treatment provided by him is ineffective. Communities seemed to be generally better aware of causes responsible for fevers (sunstroke, mosquito bite), diarrhea, dysentery and jaundice (polluted water and food). However, chicken pox, measles, leprosy and epilepsy were ascribed to supernatural powers. Consequently, more money is spent on rituals and traditional healers for the latter diseases. In the case of diarrhea, a doctor is consulted within a day or two of onset if there is no improvement in the patient's condition, since the community is aware that diarrhea could be fatal. Children suffering from measles and chicken pox are kept secluded, and a paste of neem leaves and turmeric is applied on the body followed by a bath and rituals. Persons

suffering from TB and leprosy are isolated since the community perceives them as being dangerous to their health.

- *Economic Access*. The data show that substantial costs -- on fees, drugs, tests and transport -- are being incurred by tribals and disadvantaged populations possibly because they postpone treatment until the problem has become very acute. In addition, due to the relative inaccessibility of Government health care services, these populations are approaching the private sector for their health care needs. However, a majority were of the opinion that, although private hospitals offered modern equipment and convenient service, the costs of treatment were prohibitive, and few of them could afford to consistently visit a private practitioner. Moreover, it was felt that the private practitioners commitment to low-cost preventive care was minimal, and that in the case of emergencies a Government hospital was much more likely to provide efficient service.

3. *Tribal and Underdeveloped Areas Strategy*. The project's tribal and underdeveloped areas strategy in Karnataka and West Bengal is aimed at increasing the demand for hospital services in tribal and underdeveloped areas by improving the quality of services provided; by providing effective IEC to better inform tribal populations of the benefits of using health services at secondary hospitals; and by providing primary care services at selected sites. The number of beds at sub-divisional and community hospitals located in tribal and underdeveloped areas will be increased to reflect a share of beds at secondary hospitals that is much more commensurate with their proportion in the overall population of the states. In addition to increasing the bed strength in tribal and underdeveloped area hospitals, the project would: (a) strengthen linkages between primary and secondary health care services; (b) provide an incentive package to doctors and other medical staff in tribal and underdeveloped areas to encourage them to accept assignment in these areas; (c) increase the appropriate utilization of non-tribal medical systems by the tribal population; and (d) reduce the cost to tribals and disadvantaged populations of utilizing the system.

4. Specific project components have been developed in both Karnataka and West Bengal on the basis of this information, and these are described below.

West Bengal

5. Of the total West Bengal population of 68 million (1991), 3.8 million or 5.9% are STs. 5 large ST communities -- Santhals, Oraon, Munda, Bhumij, and Kora -- constitute 84% of the state's ST population. There are 35 other smaller groups of tribals dispersed across the state, of whom 3 have been designated as primitive tribal communities.

6. The Government of West Bengal has had a Tribal Welfare Department looking into the special needs of tribal peoples since 1952. This department was subsequently renamed the Scheduled Castes and Tribes Welfare Department in 1967, and has initiated and implemented several programs in education, including grants and scholarships; construction of schools and hostels; provision of books, clothing and mid-day meals; economic upliftment, including development of land and irrigation facilities, supply of seeds and fertilizer, soil conservation, and cottage industries; social sectors, including provision of medical facilities, drinking water supply, houses and house-sites, legal aid, and provision of grants-in-aid for voluntary agencies working with tribal peoples.

7. Access to Health Services in Tribal Areas. According to GOI service delivery norms for tribal areas, a sub-center is to be provided for every 3,000 population and a PHC for every 20,000 population, as against a norm of a sub-center for every 5,000 population and a PHC for every 30,000 population in other rural areas. There are now 303 sub-centers, 47 PHCs and 28 rural hospitals located in the tribal areas of the state. The Government plans to set up additional sub-centers and PHCs to bring their numbers up to the population norms.

8. Services provided in these health facilities include disease control, such as malaria, filaria, tuberculosis, gastroenteritis, Japanese encephalitis and kala-azar; other preventive programs; maternal and child health programs; and ayurvedic and homeopathic treatments.

9. Proposed Strategy for Improving Access to Quality Health Care. The following are the project activities in support of the tribal strategy described in para. 3:

- *strengthening health care delivery in tribal areas*. A large section of tribal and disadvantaged peoples still depend on traditional healers, or sometimes the local quack, since they do not have adequate access to public health services and cannot afford a qualified private doctor. In order to address this issue, under the Sunderban plan, all 28 rural hospitals located in underdeveloped areas will be strengthened under the project. In addition, 17 hospitals located in areas with a sizable tribal population will also be strengthened (see Annex 19).

- *strengthening linkages between primary and first referral health care services*. The available evidence points to the urgent need to strengthen linkages between primary and first referral levels of health care, particularly with respect to the referral of tribal and disadvantaged patients. Special efforts would be made to disseminate referral administrative guidelines and referral protocols to primary health centers in these areas. The Zilla Parishad would also construct rest-houses close to the first referral hospitals for the convenience of patients and their families who have been referred to hospitals far from home, requiring an overnight stay. Transport would also be provided free of charge from the referring facility to those patients who cannot afford the cost of public transport.

- *increasing incentives for medical staff in tribal and underdeveloped areas*. Staff would be provided incentives to increase their commitment to serving in tribal and underdeveloped areas in a variety of ways. Additional staff quarters will be provided to all grades of staff with the construction of new staff quarters in tribal areas. Other benefits, such as extra credit to doctors and other staff for PG qualification admission and for fellowships; enhanced opportunities for transfer to urban areas after serving in a tribal area for 4-5 years; and preference to the children of doctors in tribal areas for admission in Government-run schools. This would encourage doctors and staff to work in tribal and underdeveloped areas and provide quality services. This, in turn, will increase the credibility of the health care system for tribal and disadvantaged patients and encourage them to approach health care facilities more readily, when necessary.

- *increasing the appropriate utilization of the government health services delivery network by tribal and disadvantaged populations*. An important intervention aimed at encouraging the health seeking behavior of tribal and disadvantaged populations is an IEC program targeted particularly at increasing their awareness of disease. The IEC program would also increase the awareness and sensitivity of medical staff to tribal customs and culture, as a means to

improving the client-provider relationship in tribal areas and promoting the level of comfort that tribal peoples feel in the health facility.

- *reducing the cost to tribals and disadvantaged populations of utilizing the first referral health care system.* The analysis clearly shows that the poor, including tribals, are bearing a disproportionate burden of health care costs (see Annex 17) and they will be exempted from user charges, particularly for drugs and tests, which constitute the major share of expenditures incurred at Government health facilities (see Annexes 5 and 17). The rest houses to be provided by the Zilla Parishad, mentioned earlier, will also contribute in the reduction of the cost burden. In addition, the Government will coordinate with NGOs, where possible, to provide transportation and/or food to needy patients and attendants.

Karnataka

10. The ST population in Karnataka is about 2 million or about 3.3% of the state's population. They are geographically dispersed across the state, and are not a homogenous population. Some ST households who live in the plains are quite modern and well integrated with the rest of the population. Such households have considerably improved their economic and social position. However, other STs are primitive tribes, many of them hill and forest dwellers. The health indicators amongst this latter group tend to be very poor, due to their isolation and poverty.

11. An overall assessment clearly indicates that there is need for special targeted interventions for the STs. Within these communities, there is a special need to improve access to and quality of health care delivery for women.

12. *Proposed Strategy for Improving Access to Quality Health Care.* The tribal and underdeveloped areas strategy to be implemented in Karnataka will include components similar to the ones proposed in West Bengal. In addition, the Government of Karnataka proposes to implement a well-designed program of primary care interventions to improve the availability of health services for SC/ST households residing in rural areas. A major activity planned in this context would be a system of annual health check-ups for all SC/ST families, which would include: (a) physical examination, including pulse, B.P., eyes, ears, nose, teeth, tongue, skin disorders, disabilities etc.; (b) systemic examinations, including cardiovascular, respiratory etc.; (c) simple laboratory investigations; and (d) special examination of women, including pelvic examination and FW services. A record of the health check-up would be maintained in a master register and each individual would be issued a health check-up card free of cost.

13. *Implementation Plan.* The state has a large network of 7,793 Auxiliary Nurse Midwife (ANM) sub-centers which on average cater to a population of about 3,000 persons, of which about 40 would be tribals. The medical check-up will be scheduled in Health Check-up Camps to be organized in the ANM sub-centers according to a timetable to be drawn up by the District Health and Family Welfare officer. A team of medical professionals consisting of the Medical Officer of the Primary Health Center (PHC); Lady Medical Officer specially drafted for this purpose from a Government hospital; laboratory technician; Lady Health Visitor; ANM; and one para-medical staff would then visit the sub-center on the scheduled date. The team would carry with it such equipment and other materials as are required for a thorough medical check-up. Doctors and other staff would utilize the PHC vehicle where feasible. Where such a vehicle is not available, a vehicle will be hired for transporting staff and equipment to the camps.

14. *Referral.* Cases requiring further treatment would be referred to the nearest Government hospital where appropriate facilities are available. A referral card would be issued to the patients, and such patients would get free treatment at referral hospitals where necessary.

15. *Information, Education and Communication (IEC) campaign.* Prior to the date on which the health check-up is scheduled in a particular village, the ANM and male health worker would make house to house contact with each SC/ST household and provide information regarding the venue, timing and purpose of the health check-up. A particular target for IEC activities would be women, since they are less likely to avail themselves of the facility provided. This would ensure that the maximum number of households attend the camp. The camps would also be a good venue for IEC activities relating to the dissemination of general public health issues.

16. *Drugs and Medicines.* Based on an average of Rs. 10 per person towards drugs and medicines to be dispensed at the time of the check up, an amount of Rs. 500 will be allotted for this purpose to each camp.

17. *Lady Medical Officers (LMOs).* In some districts, particularly in the Hyderabad - Karnataka region, adequate numbers of LMOs are not available in the Government sector. Given the importance of the LMO in encouraging women in SC/ST communities to seek health services at the camps, the services of available lady doctors in the district hospital would be utilized for the check-up. In some cases, the services of private lady doctors available at the district and sub-divisional levels will be utilized, with the payment of an honorarium of Rs. 300.

18. *Pilot Introduction of the Scheme.* It is proposed to introduce this scheme in the 5 districts of Mysore, Hassan, Kolar, Bijapur and Raichur during the first year of the project. It would subsequently be extended to the districts of Belgaum, Chitradurga, Dakshina Kannada, Gulbarga and Bellary. Before extending the scheme to the next set of districts, an impact analysis of the scheme on the access of SC/ST families to health care delivery, and on the improvement of their health status would be conducted.

19. *Monitoring and Supervision.* The PHC Medical Officer will be responsible for the implementation of the scheme. The work done by the PHC MO will be monitored by the newly designated Taluk Level Medical Officers. A District Level Committee will be constituted with the CEO, Zilla Panchayat as Chairman. The composition of the Committee will be as follows: Chairman: CEO, Zilla Panchayat; Members: District Surgeon; Principal of the local medical college; District Information Publicity Officer; Representatives of 2 voluntary organizations; Assistant Director, Women and Child Development; and District Health and FW Officer.

20. The Committee would: (a) review progress of the scheme on a monthly basis; (b) arrange wide publicity for the camps; (c) secure full involvement of voluntary organizations; and (d) approve expenditure incurred. A monthly progress report would be sent to the Joint Director (Planning), who would be responsible for monitoring and reviewing the scheme at the state level.

SOCIAL ASSESSMENT

1. Background and Objectives. Between February, 1995 and October, 1995, a number of studies were conducted as part of project preparation in Karnataka, Punjab and West Bengal. These studies collectively comprise the Social Assessment (SA), and include the Beneficiary Assessment and the Review of the Private Sector. The SA was undertaken in an environment of intense collaboration between the World Bank team; local research organizations including the Administrative Staff College of India (ASCI), the Foundation for Research on Underprivileged Groups (FRUG), and Operations Research Group (ORG); the respective state Governments; local Government; and representatives of NGOs and the private sector.

2. Components. The SA had four components: (i) a social context and institutional analysis, identifying and selecting specific areas within each state that are geographically, socially and culturally distinctive, differentiating between rural and urban areas, and describing and analyzing the organizational and legal framework of the health care network in the state; (ii) an analysis of health needs, including an analysis of service utilization of both private and Government health services differentiated by income level, gender and social grouping (Scheduled Caste/Scheduled Tribe), and an analysis of the access and coverage of both traditional and allopathic systems of medicine in the more remote areas of the state, especially for more disadvantaged and tribal groups; (iii) an assessment of health seeking behavior amongst women and tribal populations; and (iv) a review of the role played by the private sector in health care provision, including the scope of the private sector, the role of NGOs, and the opportunities for contracting-out support services to the private sector.

3. Stakeholder Participation. An important aspect of the SA was the involvement of key stakeholders. Preparation of the project devoted special attention to facilitating a sense of ownership and commitment of those involved in the process. They included: (i) the Government of India (GOI), state Governments and agencies responsible for project implementation; (ii) the beneficiaries, i.e., the individuals, groups and communities who would benefit from the proposed intervention; (iii) women, scheduled castes (SC) and scheduled tribes (ST); and (iv) others with a vested interest in development initiatives, including other donor agencies, NGOs, religious and community organizations, local authorities and the private sector.

4. A number of participatory activities were incorporated into project design:

- three *preparation workshops*, organized by GOI, involving central and state Government officials, including the Health Secretaries of 11 participating states; representatives from WHO; the National Institute of Public Finance and Policy; the Gujarat Institute of Development Research; ASCI; the Indian Institute of Health Management and Research; the All India Institute of Hygiene and Public Health; and the IDA team were held in Hyderabad in November, 1994, in Jaipur in February, 1995, and in Shimla in June 1995, in which the group discussed health sector issues with regard to financing and implementation and agreed on a strategy for future activities;

- *beneficiary assessments* were conducted in each state, with Terms of Reference agreed with IDA, to determine the level of service availability; undertake a social context analysis of the geographically, socially and culturally distinctive features of each state; undertake an institutional analysis to understand the supply factors influencing health care utilization;

determine the health needs of communities, particularly women and SC/ST populations; study the social, physical and economic constraints to access to health care; and estimate the private costs of seeking treatment;

- *private health sector studies* were also conducted in each state, with the intensive participation of private medical professionals, to understand the scope of private sector involvement in health care delivery; the role of NGOs in the health sector; the coverage and cost of alternative systems of medicine; the potential for contracting-out services, particularly support services, to the private sector by the Government; and the current level of regulation and monitoring of the private sector.

- *technical norms workshops* were held in Bangalore, Chandigarh, and Calcutta to develop and reach a consensus on service norms for the different tiers of the health system viz. the community, sub-divisional and district level hospitals. Participants included officials from the Directorates of Health of the respective states, private medical practitioners, members of the academic community, the project preparation teams and members of the IDA mission. Subsequently, *training workshops* were held in Karnataka and West Bengal involving state medical officials, academics, and private practitioners, to determine the training needs for medical personnel from different disciplines functioning in different tiers of the health system;

- the participation of local NGOs was encouraged in all states. In Karnataka, for instance, an NGO functioning in the tribal areas of southern Karnataka participated in discussions between the Government of Karnataka and the IDA mission. In West Bengal, the IDA team discussed the scope of NGO work with the Tagore Society in the Sunderban area. Similar discussions were held in Punjab. Useful suggestions were made in all cases with regard to health care delivery for underprivileged groups.

5. Methodology. The studies were designed to provide answers to a series of questions which would enable the project preparation team to fine-tune the proposal to best serve the felt health care needs at the community level. Some of these questions were: Who are the stakeholders? Are the objectives of the project consistent with their needs, interests and capacities? What social and cultural factors affect the ability of stakeholders to participate or benefit from the intervention proposed? What will be the impact of the project on women and vulnerable groups? What are the social risks which might affect the success of the project? What institutional and management arrangements are needed for participation, and is there a plan for building capacity at the appropriate levels?

6. A multi-pronged strategy was adopted to gather the information required for the SA. The basic demographic, epidemiological and socio-economic data were gathered from secondary sources. These included the Statistical Abstract and Medical Directory of each state for data regarding the availability of medical services, utilization of services and other hospital-based data; National Sample Survey (NSSO) 42nd. round for discussions on rural-urban differentials in health facilities, public-private health facilities, paying-non-paying wards and cost differentials; Household Survey of Health Care Utilization and Expenditure (NCAER, 1995) for an understanding of the morbidity pattern at the state level and health care utilization and expenditure; and secondary information from selected health facilities on the availability of services, drugs and infrastructure.

7. Primary data consisted of quantitative data regarding the supply factors affecting health service delivery, linkages between traditional and allopathic medicine, physical, social and economic factors affecting utilization of health services, and cost of treatment; and qualitative data regarding the relationship between health, nutrition, sanitation, and hygiene, social services currently being offered by the Government/NGOs, health needs of the community, perception and attitudes related to health seeking behavior, gender differentials in health seeking behavior, and the cost of seeking treatment. The primary data was generated in a variety of ways: through participatory observation, interviews, case studies, focus group discussions and rapid rural appraisal.

8. **Health Status in the Three States**

- Karnataka. The population of Karnataka in 1991 was about 45 million, with urban areas accounting for about 31 percent of the population. Scheduled Castes and Scheduled Tribes formed 16.4 and 4.0 percent respectively of the population. 40% of the population is below the poverty line compared to about 33% for India as a whole.

- In Karnataka, the birth rate of 26.3, death rate of 8 and infant mortality rate of 67 per thousand live births compares to the national averages of 29.3, 9.8 and 80 per thousand live births respectively. However, neonatal and post natal mortality and still birth rates have increased during the late 80's and early 90's. In the last decade, the number of patients admitted in government hospitals has increased by 60 percent, putting a great deal of pressure on hospital facilities. During the period 1982-92, the increase in inpatients has been greatest for the treatment of infectious diseases, neoplasm, endocrine, nutritional and metabolic diseases and immunity disorders, complications due to pregnancy and puerperium, and injuries and poisoning.

- West Bengal. With a total population of 68 million, West Bengal is the most densely populated state in India (about 770 per square kilometer). 39% of the population is below 15 years of age, and only 27.5% is urban. The large rural population is mainly agricultural, with a predominance of small and marginal farmers. It is estimated that more than 30% of the rural population lives below the poverty line. Scheduled Tribes constitute 5.6% of the population and 23.6% belong to the Scheduled Caste.

- West Bengal has a birth rate of 25.6, death rate of 7.3 and infant mortality rate of 58 per thousand live births. The fact that more than 50% of the disease burden is attributable to maternal and child health and communicable diseases is good reason for selecting a package of interventions at the primary and first referral level that would cost-effectively address the major health care needs in the state.

- Punjab. twenty-nine percent of the population of Punjab lives in urban areas. The sex ratio of 882 females per thousand males as against the national average of 927 females per thousand males, according to the 1991 census, is a matter for grave concern. In 1991, the per capita income was US$554 equivalent, and 12% of the state's population was below the poverty line. However, as in other states, there is substantial regional variation in per capita income. The Upper Bari Doab area, in the northwest corner of the state, has 40% and Southern Malwa has 25% of its population below the poverty line.

- Punjab has a birth rate of 27.7, a death rate of 7.8 and an infant mortality rate of 53 per thousand live births. In terms of outpatients seen at medical institutions, the Annual Dispensary Report also shows that 76 percent of the disease burden is due to non-communicable diseases; acute respiratory infection is the other major disease burden at 17 percent. These figures when compared to other Indian states reflect the health transition underway in Punjab. (Details of the epidemiological profile in each state are given in Annex 1).

9. Major Findings. With a few variations between states, the main findings of the SA can be summarized as follows:

10. Profile of Users of First Referral Hospitals

- *Demographic Characteristics.* Irrespective of the type of hospital, the majority of users belonged to the age-group 16-35. Women and children below the age of seven demonstrated a clear preference for facilities closer to home and predominantly used the community and sub-divisional hospitals, while men were the predominant users of district hospitals.

- *Socio-economic Characteristics.* On average, the distribution of users by caste, literacy level and place of residence (urban/rural) are comparable to the average distribution of these populations in the state as a whole. However, the proportion of patients who are literate, urban residents, and higher caste and income groups tended to increase in higher level facilities, indicating that the most disadvantaged and needy sections of society have limited access to district hospitals.

- *Nature of Ailment.* About half the users visited the hospital for treatment of acute medical conditions such as fever, cough, diarrhea etc. A larger proportion of patients at the community hospital level suffered from acute medical conditions compared to the district hospital level. District hospitals were preferred for chronic medical, surgical, obstetric and orthopedic cases; while sub-divisional hospitals were used predominantly for injuries.

- *Distance Traveled.* More than two-thirds of respondents resided within a distance of 10 kms. of the hospital utilized, and about a third of the respondents were within walking distance. The proportion of users within walking distance was highest in primary and community health centers, and decreased in higher level hospitals.

- *Referral Mechanism.* Less than 2% of those interviewed at secondary hospitals reported either consulting or being referred by the staff at a Primary Health Center, indicating that the referral system is functioning very poorly. Two thirds of those interviewed had consulted a private medical practitioner, particularly for chronic ailments. A large number had either approached the hospital of their own accord, or been advised to do so by relatives.

11. Profile of First Referral Hospitals

- *Physical Access.* Although, in general, patients are within 10 Kms. of a first referral hospital, there are pockets in all the states where physical access is an important issue. The Sunderban

area of West Bengal, for example, consists largely of swamps, tidal estuaries and dense forest. Transport and communication networks are inadequate, and riverine transport between the network of 54 islands is unreliable. This area poses special challenges in the health sector, since cases of snake bite, shark bite, crocodile bite and tiger mauling are not uncommon. In addition, the population in the Sunderban consists largely of poor and marginal farmers, 40% of whom belong to scheduled castes and scheduled tribes (SC/ST). In the case of Karnataka, the northern districts of Bidar, Bijapur, Gulbarga and Raichur have historically been neglected in terms of health sector development and health indicators tend to be poor in these areas. There is a special need to strengthen health care networks in these areas, and to encourage the development of the private and NGO sectors to provide outreach services which the public health services are unable to provide.

- *Social Access*. According to hospital sources, the proportion of hospital users belonging to SC/ST groups is commensurate with their proportion in the general population. However, considering the poor socio-economic condition of these groups, and their low nutritional level, the morbidity and mortality in this population is greater and warrants a higher utilization of secondary hospital services. An additional issue is the low utilization of health services by women. In Karnataka, for example, the NSS survey indicates that the sex ratio among hospitalized cases is 786 females per 1,000 males, whereas the sex ratio in the population is 960 females per 1,000 males. The average household expenditure per illness was found to be lower for women and girls as compared to their male counterparts. Given the results of the NCAER survey (1993), which reports that the morbidity among females aged 15-59 is 10% greater than among men in the same age group, there appears to be a significant bias against females in both hospitalization and intra-household allocation of health resources.

- *Services Available*. There are no norms for the provision of services at the different level of first referral hospitals (community, sub-divisional and district). Basic specialist services i.e. medicine, surgery, gynecology/obstetrics, and pediatrics are available at all first referral institutions. In addition, at district hospitals, other specialist services such as orthopedics, ENT, ophthalmology, skin and S.T.D. and blood bank are available. Dentistry services are available at some district level hospitals, but not at others. Hence, there is considerable overlap between the first referral hospitals, and inconsistency between different regions within each state.

- *Personnel*. While there is not a general shortage of trained medical and para-medical staff, there is a shortage of medical personnel in rural and remote areas of all the states. Moreover, the absence of certain specialties at sub-divisional and district hospitals was reported repeatedly. In Karnataka and Punjab, for example, the presence of a gynecologist at the sub-divisional hospital was found to be of special importance. In Punjab, a need was expressed for more pediatricians at district hospitals. There is considerable difficulty in placing doctors in rural and remote areas in both West Bengal and Punjab.

- *Maintenance*. At present, approximately 2% of the original cost of construction is allocated annually towards the maintenance of the hospitals in each of the states. This sum is grossly inadequate. There are additional problems created by the fact that maintenance of secondary hospitals is in the charge of the Public Works Department (PWD) rather than the Health Department. Leaking roofs and peeling plaster are a common sight in most hospitals.

- *Equipment and Vehicles*. Some of the major equipment at secondary hospitals is non-functional. A shortage of well trained technicians was reported to be a significant problem. There is also a lack of regional workshops at the district level, which could expedite equipment and vehicle repair and maintenance. In the absence of such subsidiary workshops, all maintenance jobs need to be handled at the central level, leading to overload and delays.

- *Laboratory Services*. Only basic laboratory services are available even at the district hospital level, due to shortages in reagents, antigens and other equipment. At sub-district level hospitals, laboratories are under-equipped and laboratory technician posts are vacant, with the result that the laboratories are non-functional. In Karnataka and Punjab, there is no provision for the post of pathologist in any of the hospitals.

- *Training*. Most in-service training programs are oriented towards on-going national programs, such as CSSM, UIP and Blindness Control. No in-service training is offered to update the clinical skills of medical and para-medical personnel on a regular basis, except in West Bengal where a training program for doctors at district hospitals is in place. Hospital administrators also reported a need for training in managerial skills to better fulfill their duties.

12. Health Awareness and Related Behavior Among Tribal and Disadvantaged Populations: This component of the SA deals specifically with health seeking behavior among tribal and disadvantaged populations in Karnataka and West Bengal. Punjab has no tribal population. An important finding of the study is the low hospital utilization rates of the tribal population.

- *Physical Access*. Clearly, hospital services provided by the Government are inadequate in rural areas. Distance traveled to reach first referral hospitals seems to be an important factor in determining utilization. Community hospitals in tribal and underdeveloped areas are located very far from the village, with poor transportation and communication facilities, and often with no convenient residential arrangements for the medical personnel. Non-availability of staff, particularly doctors, is stated to be the most important reason for preferring private medical care over Government hospitals. In tribal areas, the insensitivity of medical personnel strongly influences the community's confidence in them. Especially in emergency situations, the easy accessibility and ready availability of quacks or underqualified doctors is a major determining factor of community preference for their services. Another important issue is the non-availability of necessary drugs and medicines at first referral hospitals, particularly for curative care, which has been identified as a major constraint to patient satisfaction. The community, however, seems to be willing to pay for the medicines provided by the hospital staff.

- *Social Access*. Results from the qualitative survey conducted in the two states indicate that tribals have a special set of social beliefs and practices which affect their health seeking behavior. "Illness" was perceived as an inability to discharge one's daily duties. Illness was reported earlier amongst children than adults. Gender differentials were less common until the age of 12, after which it was observed that illness among girls was reported late. An estimated 30% of tribals still approach the traditional healer first, and go to a hospital only if the treatment provided by him is ineffective. Communities seemed to be generally better aware of causes responsible for fevers (sunstroke, mosquito bite), diarrhea, dysentery and jaundice (polluted water and food). However, chicken pox, measles, leprosy and epilepsy were ascribed to supernatural powers. Consequently, more money is spent on rituals and traditional healers

for the latter diseases. In the case of diarrhea, a doctor is consulted within a day or two of onset if there is no improvement in the patient's condition, since the community is aware that diarrhea could be fatal. Children suffering from measles and chicken pox are kept secluded, and a paste of neem leaves and turmeric is applied on the body followed by a bath and rituals. Persons suffering from TB and leprosy are isolated since the community perceives them as being dangerous to their health.

- *Economic Access*. The data show that substantial costs -- on fees, drugs, tests and transport -- are being incurred by tribals and disadvantaged populations possibly because they postpone treatment until the problem has become very acute. In addition, due to the relative inaccessibility of Government health care services, tribal populations are approaching the private sector for their health care needs. However, a majority were of the opinion that, although private hospitals offered modern equipment and convenient service, the costs of treatment were prohibitive, and few of them could afford to consistently visit a private practitioner. Moreover, it was felt that the private practitioners commitment to low-cost preventive care was minimal, and that in the case of emergencies a Government hospital was much more likely to provide efficient service.

13. Causes for the Under-Utilization of First Referral Hospitals

- *Shortage of Staff*. Non-availability of staff, particularly doctors, is stated to be the most important reason for preferring private medical care over Government hospitals. Most laboratory technician and supervisory cadre posts are either vacant, or the posted persons are on prolonged deputation at the district headquarters. In tribal areas, the insensitivity of medical personnel strongly influenced the community's confidence in them. Especially in emergency situations, the easy accessibility and ready availability of quacks or underqualified doctors is a major determining factor of community preference for their services.

- *Shortage of Medicines*. Non-availability of necessary drugs and medicines at first referral hospitals, particularly for curative care, is identified as a major constraint to patient satisfaction. The community, however, seems to be willing to pay for the medicines provided by the hospital staff.

- *Poor Access*. Accessibility of first referral hospitals seemed to be an important factor in determining utilization. Some district hospitals are located such that they are inaccessible to a large proportion of the district's population. In fact, some residents preferred to visit the neighboring district hospital, since it was more accessible than their own. Similarly, community hospitals are located in remote areas, with poor transportation and communication facilities, and often with no convenient residential arrangements for the medical personnel.

14. The Role of the Private Sector:

- The private sector in health care delivery is unorganized, and is operated by a mix of qualified and unqualified practitioners. The private sector is relatively better developed in Karnataka and Punjab, particularly around urban centers, than in West Bengal. Services are provided mainly through small clinics and nursing homes. Most private practitioners dispense allopathic medicine, although homeopathy and ayurved are also widespread. Both preventive and

curative services are provided, while emergency and medico-legal cases are generally referred to Government first referral hospitals.

- The main advantage of the private sector health facility is its easy accessibility. Not only are private clinics better located in urban areas, there is also the facility of round-the-clock availability of a specialist on the premises, unlike in the case of a Government hospital where doctors are available only for a fixed number of hours every day. In addition, due to better maintenance and sanitation, and more courteous treatment by the medical personnel, private hospitals are perceived to be providing better services than Government hospitals.

- A majority of patients visiting private clinics belong to the middle and upper socio-economic classes, since the costs of private treatment are very high when compared to a Government hospital. In West Bengal, for example, it was found that, of out-patients visiting a private practitioner, 58% spent about Rs. 100, 23.9% spent Rs. 100-300, and 6.9% spent more than Rs. 300 on medicines in the preceding three months. By comparison, the figures for those visiting a Government hospital are 28.3%, 12% and 5.4% respectively. In other words, only about 10% of out-patients are spending less than Rs. 100 in the private sector, as against almost 55% of out-patients visiting Government hospitals.

- Of those belonging to the low-income and tribal groups, a majority were of the opinion that, although private hospitals offered modern equipment and convenient service, the costs of treatment were prohibitive, and few of them could afford to consistently visit a private practitioner. Moreover, it was felt that the private practitioners commitment to low-cost preventive care was minimal, and that in the case of emergencies a Government hospital was much more likely to provide efficient service.

Actions Recommended

15. The SA has made an important contribution to the overall effort to assist the states of Karnataka, Punjab and West Bengal to design a cost-effective and sustainable health system. The broader sectoral policy reforms such as improvements in health planning capacity, management effectiveness, allocation of public resources for health, and enhanced role of the private sector would increase the efficiency of the health sector by improving the environment in which the health sector operates and by optimizing resource use. The technical and quality improvements, including operations and maintenance functions, at the institutional and health facility levels will enhance the effectiveness and efficiency of health care services by encouraging patients to seek timely care resulting in higher cure rates at lower costs. The strengthening and upgrading of selected aspects of the primary health care system for implementing the various priority health programs and provide basic health care in rural areas would have a direct impact on improving the health status of the people by reducing mortality, morbidity and disability. The SA has contributed to developing the following strategies and project design issues:

16. Streamlining of Norms. In order to increase the efficiency and effectiveness of the functioning of the different levels of the first referral hospital network, to reduce overlap in the services provided at such hospitals, and to reduce wastage of resources, technical norms workshops were held in each state. The purpose of this workshop was to reach a consensus on services that would be provided in the different tiers of the health system viz. the community, sub-divisional and district level hospitals. Based on the service norms that were developed in each state,

the participants subsequently developed staffing and equipment norms, equipment maintenance plans, referral system, training needs assessments, and management systems. The implementation of these recommendations will help reduce both the duplication of services and wastage of resources that characterize health service delivery. Preliminary estimates show that, when implemented, this streamlining and rationalization will result in considerable efficiency gains. Estimates in Andhra Pradesh have suggested that as much as 33% of cost could be saved by treating patients at first referral facilities rather than at tertiary level health facilities.

17. Referral System. An adequately functioning referral mechanism would improve the effectiveness of the primary health care level and encourage a greater participation of the private sector in health care. In reality, the referral system in these states, as in the rest of India, does not function well. The different tiers do not complement each other, the lower tiers are underutilized and institutional and technical linkages between the lower and the higher tiers are weak. Moreover, less than 2% of the patients at first referral facilities are referred from PHCs.

18. The project would seek to ensure that a much higher proportion of patients coming to first referral hospitals had been seen at a Community/rural hospital and referred upwards. Likewise, for those patients going to tertiary hospitals, the project would implement several measures to strengthen the referral system and improve the quality of care at the first referral level. These include: (a) strengthening the management of the referral system; (b) implementing the referral protocols that specify the "what", "when" and "how" of referrals; (c) implementing clinical management protocols that specify the essential processes of clinical management by staff who manage common conditions without the direct supervision of relevant specialists; and (d) establishing an incentive system (explained below). Special attention would also be given to establishing mechanisms to improve access for remote and disadvantaged groups and tribal communities. The project would establish linkages and communications between the first referral and primary health care levels. The first referral hospitals would provide clinical and technical support to the PHCs; clinical skills at secondary facilities would be updated and upgraded; technical support for the primary level of care and community hospitals would be strengthened; referral mechanisms between community, subdivisional and district hospitals would be strengthened; and mechanisms to provide greater access to secondary and higher levels of health care would be formulated by making the referral system more timely, effective and client-friendly. The Governments of Karnataka, Punjab and West Bengal would strengthen the referral system by establishing an incentive system with differentiated user fees for users and non-users and allowing patients to by-pass waiting lines when they carry a referral slip.

19. Selective Investments in Primary Health Care, especially for Women and SC/ST Populations. The project's tribal and underdeveloped areas strategy is aimed at increasing the demand for hospital services in tribal and underdeveloped areas by improving the quality of services and providing effective IEC to better inform tribal and disadvantaged populations of the benefits of using health services at secondary hospitals. The number of beds at sub-divisional and community hospitals located in tribal and underdeveloped areas will be increased to reflect a share of beds at secondary hospitals that is much more commensurate with their proportion in the overall population of the states. In addition, to increasing the bed strength in tribal and remote hospitals, the project would: (a) strengthen linkages between primary and secondary health care services; (b) provide an incentive package to doctors and other medical staff in tribal and underdeveloped areas to encourage them to accept assignment in these areas; (c) increase the appropriate utilization of

non-tribal medical system by tribal population and reduce the cost to the poor, including tribals, of utilizing the system (see Annex 16).

20. In addition, the project would provide much greater access to women, particularly rural women, and improve the quality of services they receive. More specifically, by strengthening the referral mechanism and linking the community hospitals with primary health centers, the project would assist in providing timely access to emergency obstetric care. The project would also promote a life-cycle approach to women's health, taking into account some of the main recommendations of the Cairo Conference on women's reproductive health, such as screening for reproductive tract infections (RTIs) and sexually transmitted diseases (STDs), providing appropriate information, education and communication (IEC) to promote the value of the girl-child, and increasing women's awareness of their options in terms of health care.

21. Specific components included in the project to address these issues are: *Upgrading of Primary Health Centers in the Sunderban Areas of West Bengal.* The Sundarban area in southern West Bengal, with a population of about 3.1 million people, is among the poorest regions in the state and is most lacking in adequate health facilities. It is therefore proposed that the project would upgrade all PHCs and block PHCs in the region. In addition, three floating medical units will be set up to deliver effective health care in the riverine areas and would be supported by wireless connection. A wireless communication system will also link up the 36 PHCs and block PHCs with the gram panchayat office. *Increasing Access to Primary Care Services Among SC/ST Population in Karnataka* . A system of annual health check-ups is proposed under the project for the SC/ST population of Karnataka, which account for nearly 20% of the population. The medical check-ups will be made available in health check-up camps to be organized at the headquarters of every auxiliary nurse midwife (ANM).

22. Means-tested Cost Recovery. Previous sector work indicates that the revenue collected in the three states from user charges varies between 3% and 7% of the health budget of the states. International experience in developing countries with somewhat higher per capita income than India, and where the performance of the public health sector has been relatively better, show that revenue collected from user charges accounts for about 15-20% of the health budget. The Governments of the three states recognize the importance of increasing revenue collection through user charges for the sustainability of the sector. The strategy with regard to the implementation of user charges takes into account both the willingness of most people to pay something towards services rendered, given improvements in the quality of basic services and infrastructure i.e. voluntary payment, and the need to adequately exempt the poorest sections who simply cannot afford to pay. In order to encourage greater voluntary payments of user charges, the state Governments have stated that user charges would be more widely implemented in a phased manner for treatment and diagnostic services, after the improvements in quality have been implemented. Fees for services such as paying beds, cabins, and charges for a range of diagnostic services and outpatient registration fees would be more widely implemented. User fees would be used specifically for non-salary recurrent cost purposes, particularly to purchase drugs and medical supplies. The Governments would institute adequate administrative mechanisms for collecting user fees and enhance the Governments' resource generation capacity through the appointment of key staff in its Finance and Audit unit. (See Annex 5 for details on exemptions for the poor).

23. Increasing the Scope for Private Sector Involvement in Service Delivery. *Contracting-out Selected Services.* Private contractual services are often more efficient and effective than direct

labor. In view of the difficulties of employing government staff, such as slow recruitment and absenteeism, contracting-out certain services, especially support services, becomes even more attractive. It has been confirmed that there are no legal barriers inhibiting the use of contractual services for support functions and that the Contract Labor Regulation and Abolition Act (1970), which prohibits certain institutions from contracting-out perennial services, exempt hospitals and health care facilities. In order to cut costs and increase efficiency, the Governments of Karnataka, Punjab and West Bengal would review and propose implementation of private contractual services, especially supporting services.

24. Linkages with the Private and Voluntary Sectors. The state Governments have proposed to enhance the participation of the voluntary sector, especially for improving access to primary health care and first referral services in remote and underdeveloped areas of the Sunderban in West Bengal and for disadvantaged groups, particularly SC/STs in Karnataka. The state Governments are also exploring opportunities for contracting out the delivery of health care in remote areas to the voluntary sector which has a comparative advantage in improving access to such health services for some disadvantaged groups. On matters of ensuring the quality of health care provision, state Governments would also play a more pro-active role, through legislation such as the Nursing Home Registration Act which is pending Parliamentary clearance in Karnataka and Punjab.

25. Decentralization of Management and Administration. *Retention and Use of Revenue Collected.* To provide incentives to hospitals for collecting user charges, all three states have proposed to implement a system that would ensure that revenue collected through user charges would not go back to the state treasury in Karnataka and West Bengal. The revenue collected through user charges would be retained at the district level to be reallocated by district level health authorities amongst hospitals in the district, based on both need and level of revenue collection. In Punjab, revenue collected would be retained at the point of collection.

26. Project Management. During preparation the Government stated that the DOHFW did not have the capacity to implement a project of this scope. In addition, a project preparation workshop held in Chandigarh recommended that an independent agency would be more suitable to implement the proposed project. Therefore, a model similar to the APVVP was adopted. The IDA mission recognised the implication of the proposed management structure and the initial start-up problems this would entail. However, the benefits of this approach, namely, the independence to carry out project work more efficiently, implementing user charges and being more self-sustaining in the long run, outweigh the possible associated risks.

27. Civil Works and Maintenance. Due to the scope of the civil works component and the need to ensure adequate maintenance of assets, the Health Department's role in *Karnataka* and *West Bengal* would be strengthened by providing it with enhanced management and supervision responsibilities of essential operational activities including construction and maintenance activities in collaboration with local government. These responsibilities now lie with the Public Works Department which would be unable to adequately fulfill its obligations to the Health Department due to the diverse functions it is called upon to perform. A Design and Engineering Wing would be set up in the Health Department at both the state and district levels, and flow of funds would be channeled through DOHFW. In addition, a maintenance cell will be established in each large hospital to manage day-to-day emergent maintenance works. In *Punjab*, the establishment of a Health Systems Corporation with substantial autonomy in carrying out essential operational

activities would facilitate implementation of the project at both state and district levels, and the flow of funds would be channeled through the Corporation.

28. Workforce Issues. There is currently no acute shortage of professional staff overall, but there is a shortage of some medical specialties and nurses. The first step would be to improve recruitment and prompt filling of job vacancies by improving the main procedures. The states will put appropriate regulations in place so that state Governments have the authority to: (i) advertise, appoint, promote and transfer staff internally; (ii) post staff as needed, especially in tribal areas; (iii) introduce appropriate incentives to retain staff in remote areas including: provision of staff quarters, bonus at the end of a specified period of posting, educational allowance for children of staff posted in remote and tribal areas, additional leave eligibility and extra weightage for doctors and other staff for PG qualification admission and for fellowships; and (iv) relax service rules as necessary to maintain service when appropriately qualified staff are unavailable.

29. Information, Education and Communication. Six broad strategies are proposed for this component: (a) increase awareness of the services provided by first referral hospitals, and the functioning of the referral system, particularly among lower income and disadvantaged groups (such as tribals), and thereby increase utilization of the system; (b) improve access to the expanded range of all reproductive health services among women; (c) motivate all hospital staff to maintain good standards of patient care in terms of 'care, courtesy and comfort' so that the quality of services received by patients is enhanced; (d) sensitize staff to hospital and equipment maintenance issues; (e) promote hospital services to specific groups in a manner that increases their willingness to utilize these services and, where possible, to share in the costs of service delivery; and (f) address specific public health issues in each state such as road safety, alcohol abuse, healthy diet (particularly in Punjab), and women's issues.

30. Five groups will be included in the target audience. First, government functionaries working at the grassroots level -- anganwadi workers, gram sevikas, school teachers, agricultural extension workers and multipurpose health workers -- would be targeted for information pertaining to the availability of different types of health care at different levels within the health care system. These workers are likely to be seen as opinion leaders by the populations they serve and they can be key information sources in spreading knowledge about the availability of services and the referral system. Second, women would be considered as a priority target, since their access to health facilities is comparatively low. They are, in addition, managers of the health status of the household and have demonstrated their ability as a group to mobilize the community. Third, patients who enter the hospital system would be considered a priority target. Their word-of-mouth based on their first-hand experience will carry far more weight than any other channel of communication. The imperative of creating satisfied customers, and thereby expanding the demand for services, particularly in tribal areas, must be recognized for the communication strategy to succeed. Fourth, private practitioners and NGOs would be targeted because of their potential role in referring patients, and because they should be aware of the improved standards of care in first referral hospitals. Fifth, the population in the Sunderban area of West Bengal and SC/ST groups in Karnataka will be targeted, to raise awareness in those communities of the increased access to and improved quality of primary health care services now available to them.

Poverty Aspects

31. In India the public health system is utilized predominantly by the lower income groups, especially at the secondary level. Those who can afford to pay usually prefer using private hospitals. Country-wide health sector studies have shown that the public sector hospital care seems well targeted to the poor, with over seventy percent of public hospital users being from the lower forty percent of income distribution. These findings are confirmed by the beneficiary assessment for Karnataka, which includes an analysis of secondary hospital patients by family income. This analysis found that in Karnataka over 45 percent of the patients have an annual income below Rs. 15,000 (close to the official poverty line), and over 90 percent of the patients have an annual income below the taxable level of Rs. 50,000.

32. General Poverty Impact. By improving health service quality, access, and effectiveness at the secondary level, this project will disproportionately benefit the poor and underprivileged segments of the states' population. Beneficiary studies in the project states have shown that while the poor are the major users of these public health facilities and would therefore benefit from any improvements within the secondary health system, perceived quality, access and effectiveness of health interventions at this level are major barriers faced especially by the poor. This project will also focus on addressing these barriers and thereby increasing the utilization of these services by the poor.

33. Special Poverty Interventions/Areas of Emphasis. In addition to having the overall aim of improving secondary health services for the poor, each state has undertaken special initiatives under this project in order to reach the most vulnerable and poor: In *West Bengal*, where 44 percent of the people are below the poverty line and rural poverty averages around 48 percent, poverty in the Sunderban Areas lies yet above this average. In addition to including some of the poorest populations of the state, the Sunderban face the additional problem of being remote, difficult to access, and having low availability of even primary health care services. This project will seek to redress the problems that the poor in these remote areas face in accessing health care, by upgrading all primary health centers in the Sunderban Areas. In addition, three floating medical units supported by a wireless communications system will be set up in order to enable effective primary health care deliver in these remote, riverine areas.

34. In *Karnataka*, where the percentage of people in poverty at 38 percent is close the all-India average, the main issues of the poor's access to health services center around increasing access to primary and secondary health care services for the scheduled caste and scheduled tribe populations of the state. Beneficiary assessments have shown that these are the people with the highest percentage of poverty and often with the least access to public health services. In order to reach out to these populations, heighten their awareness of the types of services available, and to improve their health indicators, Karnataka will institute a system of annual health check-ups for the entire SC/ST population. These health check camps would serve as a early screening forum for preventive health care, would enable direct IEC to communicate the levels of health care services and facilities available, and would above all increase basic health care delivery to some of the poorest segments of the population.

35. In *Punjab*, the percentage of people below the poverty line is the lowest in the country, at 12.7 percent. This figure, however, masks great regional differences within the state. In the poorest region of the state, the Upper Bari Doab area, 30 percent of the overall population and 40

of the rural population live below the poverty line. In the next poorest region, Southern Malwa, rural poverty is 25 percent. Since this project focuses on first-referral hospitals, which are usually located in the rural areas, it is these high rural poverty rates in the two regions of Punjab that are of real concern. To address the issue of access and equity faced by the rural poor in these two regions, 57 percent of the first-referral hospitals to be upgraded will be located in these poorer, rural areas. Moreover, 61 percent of the total cost of hospital upgradation in Punjab will be allocated to hospitals in the Upper Bari Doab and Southern Malwa areas. By focusing the project on the areas with a greater percentage of people below the poverty line, Punjab aims to redress the current difficulties of quality and access to health care services faced by the poor.

36. Exempting the Poor from User Charges. Although the implementation of user charges in order to contribute to the long-term sustainability of the first referral health system is justified, there is a very valid concern regarding the targeting of poor people for exemptions from user charges. Given the differences in management and administration, income levels and underlying structure of the economy in the three states, it is proposed that different income criteria by state be applied for exempting the poor from user charges. Details of an appropriate exemption mechanism to be implemented in each state are provided in Annex 5.

PROJECT COSTS

Table 1: Cost By Component

Component	(Rupee Million)			(US$ Million)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Management Development & Institutional Strengthening								
1a - Improve Institutional Framework for Policy Development	58.3	16.4	74.7	1.7	.5	2.1	22%	1%
1b - Strengthen Management & Implementation Capacity	667.5	105.4	772.9	19.2	3.0	22.2	14%	6%
1c - Develop Surveillance Capacity	63.8	15.3	79.1	1.8	.4	2.3	19%	1%
Subtotal	789.6	137.1	926.7	22.7	3.9	26.6	15%	7%
2. Improve Service Quality, Access and Effectivenes								
2a - Renovate & Extend Community, Area & District Hospitals	4,085.9	740.8	4,826.7	117.4	21.3	138.7	39%	0%
2b - Upgrade Clinical Effectiveness	3,982.7	1,431.8	5,414.5	114.4	41.1	155.6	43%	0%
2c - Improve Referral Mechanism	202.8	280.0	482.8	5.8	8.0	13.9	4%	0%
Subtotal	8,271.4	2,452.6	10,724.0	237.7	70.5	308.2	86%	0%
3 - Improve Access to Basic Health Services	611.0	233.8	844.9	17.6	6.7	24.3	7%	0%
Total BASELINE COSTS	9,672.1	2,823.5	12,495.6	277.9	81.1	359.1	100%	0%
Physical Contingencies	890.5	279.6	1,170.1	25.6	8.0	33.6	9%	0%
Price Contingencies	2,340.9	684.9	3,025.7	18.5	5.4	24.0	7%	0%
Total PROJECT COSTS	12,903.5	3,788.0	16,691.4	322.1	94.6	416.7	116%	0%

Table 2: Cost by Categories of Expenditure

	(Rupee Million)			(US$ Million)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
Investment Costs								
Civil Works (Renovation)	1,131.1	199.6	1,330.7	32.5	5.7	38.2	15%	11%
Civil Works (New Constr or Extension)	2,737.3	483.0	3,220.3	78.7	13.9	92.5	15%	26%
Professional Services	356.1	89.0	445.1	10.2	2.6	12.8	20%	4%
Furniture	304.7	33.9	338.5	8.8	1.0	9.7	10%	3%
Major Medical Equipment	562.7	844.1	1,406.8	16.2	24.3	40.4	60%	11%
Minor Medical Equipment	43.3	10.8	54.2	1.2	.3	1.6	20%	-
Medical Equipment - Surgical Packs	81.0	20.3	101.3	2.3	.6	2.9	20%	1%
Equipment (Other)	763.1	190.8	953.8	21.9	5.5	27.4	20%	8%
Vehicles	109.9	329.8	439.7	3.2	9.5	12.6	75%	4%
Medical Lab Supplies	127.9	32.0	159.9	3.7	.9	4.6	20%	1%
Medicines	401.5	401.5	803.0	11.5	11.5	23.1	50%	6%
Other Supplies	550.3	-	550.3	15.8	-	15.8	-	4%
MIS/IEC Materials	156.2	52.1	208.3	4.5	1.5	6.0	25%	2%
Local Training	220.5	-	220.5	6.3	-	6.3	-	2%
Studies	66.7	-	66.7	1.9	-	1.9	-	1%
Fellowships	6.2	55.6	61.8	.2	1.6	1.8	90%	-
Workshops	51.5	-	51.5	1.5	-	1.5	-	-
Consultants	12.4	-	12.4	.4	-	.4	-	-
NGO's	18.7	-	18.7	.5	-	.5	-	-
Total Investment Costs	7,701.0	2,742.4	10,443.4	221.3	78.8	300.1	26%	84%
Recurrent Costs								
Salaries of Additional Staff	1,225.2	-	1,225.2	35.2	-	35.2	-	10%
Operational Expenses	473.5	52.6	526.1	13.6	1.5	15.1	10%	4%
Building Maintenance	69.4	7.7	77.1	2.0	.2	2.2	10%	1%
Surgical Pack Maintenance	2.9	.2	3.1	.1	.0	.1	5%	-
Vehicle Maintenance	15.6	1.7	17.4	.4	.0	.5	10%	-
Equipment Maintenance	170.2	18.9	189.1	4.9	.5	5.4	10%	2%
Furniture Maintenance	14.3	-	14.3	.4	-	.4	-	-
Total Recurrent Costs	1,971.1	81.1	2,052.2	56.6	2.3	59.0	4%	16%
Total BASELINE COSTS	9,672.1	2,823.5	12,495.6	277.9	81.1	359.1	23%	100%
Physical Contingencies	890.5	279.6	1,170.1	25.6	8.0	33.6	24%	9%
Price Contingencies	2,340.9	684.9	3,025.7	18.5	5.4	24.0	23%	7%
Total PROJECT COSTS	12,903.5	3,788.0	16,691.4	322.1	94.6	416.7	23%	116%

Table 3 Project Totals: Expenditure Accounts by Years - Base Costs
Karnataka, Punjab and West Bengal
Costs in Rs. Millions

	Base Cost in Indian FY						Foreign Exchange	
	96/97	97/98	98/99	99/2000	2000/01	Total	%	Amount
Investment Costs								
Civil Works (Renovation)	186.4	248.2	412.1	376.0	107.9	1,330.7	15%	199.6
Civil Works (New Constr or Extension)	490.7	802.7	964.3	747.1	215.5	3,220.3	15%	483.0
Professional Services	67.9	102.6	133.0	109.0	32.7	445.1	20%	89.0
Furniture	29.2	81.2	98.8	67.0	62.2	338.5	10%	33.9
Major Medical Equipment	104.1	323.1	412.9	299.1	267.6	1,406.8	60%	844.1
Minor Medical Equipment	5.4	10.8	16.2	10.8	10.8	54.2	20%	10.8
Medical Equipment - Surgical Packs	10.1	20.3	30.4	20.3	20.3	101.3	20%	20.3
Equipment (Other)	103.2	234.9	258.4	189.2	168.1	953.8	20%	190.8
Vehicles	91.2	148.7	82.2	61.4	56.3	439.7	75%	329.8
Medical Lab Supplies	8.4	20.1	30.4	41.0	59.9	159.9	20%	32.0
Medicines	49.0	110.7	166.2	204.4	272.7	803.0	50%	401.5
Other Supplies	46.7	81.0	131.9	144.2	146.4	550.3	-	-
MIS/IEC Materials	24.7	107.1	44.8	22.9	8.8	208.3	25%	52.1
Local Training	20.5	48.5	54.0	49.3	48.1	220.5	-	-
Studies	15.4	14.8	14.2	12.4	9.9	66.7	-	-
Fellowships	8.9	17.8	19.5	7.9	7.7	61.8	90%	55.6
Workshops	7.1	11.2	13.3	11.2	8.6	51.5	-	-
Consultants	3.3	3.7	3.9	0.9	0.7	12.4	-	-
NGO's	5.0	5.5	5.9	1.3	1.0	18.7	-	-
Total Investment Costs	1,277.2	2,393.0	2,892.5	2,375.4	1,505.3	10,443.4	26%	2,742.4
Recurrent Costs								
Salaries of Additional Staff	91.1	209.5	272.4	307.1	345.0	1,225.2	-	-
Operational Expenses	27.1	68.1	121.8	139.9	169.2	526.1	10%	52.6
Building Maintenance	-	-	16.8	23.3	37.0	77.1	10%	7.7
Surgical Pack Maintenance	-	0.0	0.3	0.9	1.8	3.1	5%	0.2
Vehicle Maintenance	0.2	3.2	4.7	4.7	4.7	17.4	10%	1.7
Equipment Maintenance	4.8	5.4	26.2	56.1	96.6	189.1	10%	18.9
Furniture Maintenance	0.7	1.4	2.4	4.2	5.6	14.3	-	-
Total Recurrent Costs	123.8	287.6	444.7	536.2	659.8	2,052.2	4%	81.1
Total BASELINE COSTS	1,401.1	2,680.6	3,337.2	2,911.6	2,165.1	12,495.6	23%	2,823.5
Physical Contingencies	133.3	253.2	315.3	272.3	196.0	1,170.1	24%	279.6
Price Contingencies	52.7	361.2	774.4	940.0	897.5	3,025.7	23%	684.9
Total PROJECT COSTS	1,587.1	3,295.0	4,426.9	4,123.9	3,258.5	16,691.4	23%	3,788.0
Taxes	84.4	179.9	235.5	215.3	173.1	888.1	-	-
Foreign Exchange	350.6	797.2	994.4	880.5	765.2	3,788.0	-	-

Table 4 Karnataka: Expenditure Accounts by Years -- Base Costs
Costs in Rs. Millions

	Base Cost in Indian FY						Foreign Exchange	
	96/97	97/98	98/99	99/2000	2000/01	Total	%	Amount
Investment Costs								
Civil Works (Renovation)	90.6	62.9	57.9	40.2	-	251.6	15%	37.7
Civil Works (New Constr or Extension)	286.3	267.2	229.0	171.8	-	954.4	15%	143.2
Professional Services	35.4	29.9	26.5	18.8	-	110.6	20%	22.1
Furniture	3.1	34.3	28.1	20.8	17.7	104.1	10%	10.4
Major Medical Equipment	-	111.0	84.9	75.1	55.5	326.5	60%	195.9
Minor Medical Equipment						-	-	-
Medical Equipment - Surgical Packs						-	-	-
Equipment (Other)	32.8	108.1	72.1	65.5	49.2	327.7	20%	65.5
Vehicles	9.1	72.7	27.2	22.7	19.7	151.4	75%	113.5
Medical Lab Supplies	5.0	13.7	21.2	33.7	51.2	124.8	20%	25.0
Medicines	12.5	46.0	75.3	121.3	163.1	418.2	50%	209.1
Other Supplies	5.8	17.4	24.4	33.7	34.8	116.1	-	-
MIS/IEC Materials	8.7	9.7	8.1	5.5	0.3	32.3	25%	8.1
Local Training	2.0	25.0	25.0	24.0	24.0	100.1	-	-
Studies	3.5	4.1	4.1	3.9	3.9	19.5	-	-
Fellowships	2.6	10.2	10.2	2.6	2.4	28.0	90%	25.2
Workshops	2.1	5.1	5.6	5.6	3.0	21.5	-	-
Consultants	2.9	2.8	2.8	-	-	8.4	-	-
NGO's	4.3	4.2	4.2	-	-	12.7	-	-
Total Investment Costs	506.7	824.4	706.6	645.2	424.7	3,107.6	28%	855.7
Recurrent Costs								
Salaries of Additional Staff	5.7	86.2	126.4	160.9	195.3	574.6	-	-
Operational Expenses	3.0	30.2	66.4	90.5	111.6	301.7	10%	30.2
Building Maintenance	-	-	16.1	18.9	22.4	57.4	10%	5.7
Surgical Pack Maintenance	-	-	-	-	-	-	-	-
Vehicle Maintenance	-	-	-	-	-	-	-	-
Equipment Maintenance	-	0.6	11.3	19.6	28.0	59.5	10%	5.9
Furniture Maintenance	-	-	-	-	-	-	-	-
Total Recurrent Costs	8.8	116.9	220.2	290.0	357.3	993.2	4%	41.9
Total BASELINE COSTS	515.5	941.3	926.7	935.2	782.1	4,100.7	22%	897.5
Physical Contingencies	50.6	87.5	84.0	83.9	67.0	372.8	24%	88.5
Price Contingencies	20.6	126.3	214.3	300.9	322.4	984.5	22%	219.6
Total PROJECT COSTS	586.6	1,155.1	1,225.0	1,319.9	1,171.4	5,458.0	22%	1,205.6
Taxes	30.2	63.0	62.1	67.3	58.8	281.3	-	-
Foreign Exchange	99.1	294.6	264.7	283.1	264.1	1,205.6	-	-

Table 5 Punjab: Expenditure Accounts by Years -- Base Costs
Costs in Rs. Millions

	Base Cost in Indian FY						Foreign Exchange	
	96/97	97/98	98/99	99/2000	2000/01	Total	%	Amount
Investment Costs								
Civil Works (Renovation)	31.3	46.9	31.3	31.3	15.6	156.4	15%	23.5
Civil Works (New Constr or Extension)	115.6	346.8	346.8	231.2	115.6	1,156.0	15%	173.4
Professional Services	14.4	39.4	38.1	26.2	13.1	131.2	20%	26.2
Furniture	9.1	13.0	18.3	12.4	12.4	65.2	10%	6.5
Major Medical Equipment	35.8	75.5	123.2	87.4	75.5	397.5	60%	238.5
Minor Medical Equipment	1.8	3.5	5.3	3.5	3.5	17.5	20%	3.5
Medical Equipment - Surgical Packs	2.3	4.6	6.9	4.6	4.6	23.2	20%	4.6
Equipment (Other)	18.9	33.1	45.7	29.9	29.9	157.5	20%	31.5
Vehicles	47.6	37.4	-	-	-	84.9	75%	63.7
Medical Lab Supplies	1.0	1.5	2.0	2.5	4.0	11.0	20%	2.2
Medicines	18.4	28.6	36.7	46.9	73.4	204.0	50%	102.0
Other Supplies	2.5	6.0	11.5	14.5	15.5	50.0	-	-
MIS/IEC Materials	13.4	53.5	29.0	12.3	3.3	111.4	25%	27.9
Local Training	12.4	10.7	10.7	13.0	12.4	59.2	-	-
Studies	10.3	7.5	5.3	5.3	2.8	31.2	-	-
Fellowships	5.0	5.0	5.5	2.7	2.7	21.0	90%	18.9
Workshops	2.8	1.9	1.5	1.5	1.5	9.1	-	-
Consultants	0.2	0.4	0.4	0.4	0.2	1.6	-	-
NGO's	0.3	0.6	0.6	0.6	0.3	2.4	-	-
Total Investment Costs	343.1	715.9	718.5	526.3	386.5	2,690.3	27%	722.4
Recurrent Costs								
Salaries of Additional Staff	54.1	60.9	71.1	74.5	77.8	338.4	-	-
Operational Expenses	9.8	12.3	15.6	18.0	26.2	82.0	10%	8.2
Building Maintenance	-	-	0.7	2.9	10.9	14.5	10%	1.4
Surgical Pack Maintenance	-	0.0	0.1	0.2	0.4	0.7	5%	0.0
Vehicle Maintenance	0.2	3.0	4.4	4.4	4.4	16.4	10%	1.6
Equipment Maintenance	4.8	4.8	5.9	9.5	14.7	39.7	10%	4.0
Furniture Maintenance	0.7	0.9	0.9	1.1	1.5	5.0	-	-
Total Recurrent Costs	69.6	81.8	98.7	110.7	135.9	496.6	3%	15.3
Total BASELINE COSTS	412.7	797.7	817.2	637.0	522.4	3,186.9	23%	737.7
Physical Contingencies	37.5	75.8	77.2	59.1	47.5	297.1	25%	72.8
Price Contingencies	14.9	107.8	189.6	205.6	216.8	734.7	23%	168.7
Total PROJECT COSTS	465.1	981.3	1,084.1	901.7	786.7	4,218.8	23%	979.2
Taxes	23.9	52.0	56.0	45.2	40.4	217.3	-	-
Foreign Exchange	117.7	224.4	246.1	199.8	191.1	979.2	-	-

Table 6 West Bengal: Expenditure Accounts by Years -- Base Costs
Costs in Rs. Millions

	Base Cost in Indian FY						Foreign Exchange	
	96/97	97/98	98/99	99/2000	2000/01	Total	%	Amount
Investment Costs								
Civil Works (Renovation)	64.6	138.4	323.0	304.5	92.3	922.8	15%	138.4
Civil Works (New Constr or Extension)	88.8	188.7	388.5	344.1	99.9	1,110.0	15%	166.5
Professional Services	18.1	33.3	68.4	63.9	19.6	203.3	20%	40.7
Furniture	16.9	33.8	52.4	33.8	32.1	169.2	10%	16.9
Major Medical Equipment	68.3	136.6	204.8	136.6	136.6	682.8	60%	409.7
Minor Medical Equipment	3.7	7.3	11.0	7.3	7.3	36.7	20%	7.3
Medical Equipment - Surgical Packs	7.8	15.6	23.4	15.6	15.6	78.1	20%	15.6
Equipment (Other)	51.6	93.7	140.6	93.7	89.1	468.7	20%	93.7
Vehicles	34.6	38.6	54.9	38.6	36.6	203.4	75%	152.6
Medical Lab Supplies	2.4	4.8	7.2	4.8	4.8	24.1	20%	4.8
Medicines	18.1	36.2	54.2	36.2	36.2	180.8	50%	90.4
Other Supplies	38.4	57.6	96.1	96.1	96.1	384.3	-	-
MIS/IEC Materials	2.6	43.9	7.8	5.2	5.2	64.6	25%	16.2
Local Training	6.1	12.9	18.4	12.2	11.6	61.2	-	-
Studies	1.6	3.2	4.8	3.2	3.2	16.0	-	-
Fellowships	1.3	2.6	3.8	2.6	2.6	12.8	90%	11.5
Workshops	2.1	4.2	6.3	4.2	4.2	20.9	-	-
Consultants	0.2	0.5	0.7	0.5	0.5	2.4	-	-
NGO's	0.4	0.7	1.1	0.7	0.7	3.6	-	-
Total Investment Costs	427.4	852.7	1,467.4	1,203.9	694.1	4,645.5	25%	1,164.3
Recurrent Costs								
Salaries of Additional Staff	31.2	62.4	74.9	71.8	71.8	312.2	-	-
Operational Expenses	14.2	25.6	39.9	31.3	31.3	142.5	10%	14.2
Building Maintenance	-	-	-	1.5	3.8	5.3	10%	0.5
Surgical Pack Maintenance	-	-	0.2	0.7	1.4	2.3	5%	0.1
Vehicle Maintenance	-	0.2	0.2	0.2	0.2	1.0	10%	0.1
Equipment Maintenance	-	-	9.0	27.0	54.0	89.9	10%	9.0
Furniture Maintenance	-	0.6	1.6	3.1	4.1	9.3	-	-
Total Recurrent Costs	45.5	88.9	125.9	135.6	166.6	562.4	4%	24.0
Total BASELINE COSTS	472.9	941.6	1,593.3	1,339.5	860.7	5,208.0	23%	1,188.3
Physical Contingencies	45.2	90.0	154.1	129.3	81.5	500.1	24%	118.3
Price Contingencies	17.2	127.0	370.4	433.5	358.3	1,306.5	23%	296.6
Total PROJECT COSTS	535.4	1,158.7	2,117.8	1,902.3	1,300.5	7,014.6	23%	1,603.2
Taxes	30.4	65.0	117.4	102.8	73.9	389.5	-	-
Foreign Exchange	133.8	278.2	483.6	397.6	310.1	1,603.2	-	-

Table 9 Punjab: Expenditure Accounts by Years -- Base Costs
Costs in US$ Millions

	Base Cost in Indian FY						Foreign Exchange	
	96/97	97/98	98/99	99/00	2000/01	Total	%	Amount
Investment Costs								
Civil Works (Renovation)	0.9	1.3	0.9	0.9	0.4	4.5	15%	0.7
Civil Works (New Constr or Extension)	3.3	10.0	10.0	6.6	3.3	33.2	15%	5.0
Professional Services	0.4	1.1	1.1	0.8	0.4	3.8	20%	0.8
Furniture	0.3	0.4	0.5	0.4	0.4	1.9	10%	0.2
Major Medical Equipment	1.0	2.2	3.5	2.5	2.2	11.4	60%	6.9
Minor Medical Equipment	0.1	0.1	0.2	0.1	0.1	0.5	20%	0.1
Medical Equipment - Surgical Packs	0.1	0.1	0.2	0.1	0.1	0.7	20%	0.1
Equipment (Other)	0.5	1.0	1.3	0.9	0.9	4.5	20%	0.9
Vehicles	1.4	1.1	-	-	-	2.4	75%	1.8
Medical Lab Supplies	0.0	0.0	0.1	0.1	0.1	0.3	20%	0.1
Medicines	0.5	0.8	1.1	1.3	2.1	5.9	50%	2.9
Other Supplies	0.1	0.2	0.3	0.4	0.4	1.4	-	-
MIS/IEC Materials	0.4	1.5	0.8	0.4	0.1	3.2	25%	0.8
Local Training	0.4	0.3	0.3	0.4	0.4	1.7	-	-
Studies	0.3	0.2	0.2	0.2	0.1	0.9	-	-
Fellowships	0.1	0.1	0.2	0.1	0.1	0.6	90%	0.5
Workshops	0.1	0.1	0.0	0.0	0.0	0.3	-	-
Consultants	0.0	0.0	0.0	0.0	0.0	0.0	-	-
NGO's	0.0	0.0	0.0	0.0	0.0	0.1	-	-
Total Investment Costs	9.9	20.6	20.6	15.1	11.1	77.3	27%	20.8
Recurrent Costs								
Salaries of Additional Staff	1.6	1.8	2.0	2.1	2.2	9.7	-	-
Operational Expenses	0.3	0.4	0.4	0.5	0.8	2.4	10%	0.2
Building Maintenance	-	-	0.0	0.1	0.3	0.4	10%	0.0
Surgical Pack Maintenance	-	0.0	0.0	0.0	0.0	0.0	5%	0.0
Vehicle Maintenance	0.0	0.1	0.1	0.1	0.1	0.5	10%	0.0
Equipment Maintenance	0.1	0.1	0.2	0.3	0.4	1.1	10%	0.1
Furniture Maintenance	0.0	0.0	0.0	0.0	0.0	0.1	-	-
Total Recurrent Costs	2.0	2.4	2.8	3.2	3.9	14.3	3%	0.4
Total BASELINE COSTS	11.9	22.9	23.5	18.3	15.0	91.6	23%	21.2
Physical Contingencies	1.1	2.2	2.2	1.7	1.4	8.5	25%	2.1
Price Contingencies	0.4	1.1	1.5	1.5	1.4	5.9	23%	1.3
Total PROJECT COSTS	13.4	26.2	27.2	21.5	17.8	106.1	23%	24.6
Taxes	0.7	1.4	1.4	1.1	0.9	5.5	-	-
Foreign Exchange	3.4	6.0	6.2	4.8	4.3	24.6	-	-

Table 10 West Bengal: Expenditure Accounts by Years -- Base Costs
Costs in US$ Millions

	Base Cost in Indian FY						Foreign Exchange	
	96/97	97/98	98/99	99/00	2000/01	Total	%	Amount
Investment Costs								
Civil Works (Renovation)	1.9	4.0	9.3	8.8	2.7	26.5	15%	4.0
Civil Works (New Constr or Extension)	2.6	5.4	11.2	9.9	2.9	31.9	15%	4.8
Professional Services	0.5	1.0	2.0	1.8	0.6	5.8	20%	1.2
Furniture	0.5	1.0	1.5	1.0	0.9	4.9	10%	0.5
Major Medical Equipment	2.0	3.9	5.9	3.9	3.9	19.6	60%	11.8
Minor Medical Equipment	0.1	0.2	0.3	0.2	0.2	1.1	20%	0.2
Medical Equipment - Surgical Packs	0.2	0.4	0.7	0.4	0.4	2.2	20%	0.4
Equipment (Other)	1.5	2.7	4.0	2.7	2.6	13.5	20%	2.7
Vehicles	1.0	1.1	1.6	1.1	1.1	5.8	75%	4.4
Medical Lab Supplies	0.1	0.1	0.2	0.1	0.1	0.7	20%	0.1
Medicines	0.5	1.0	1.6	1.0	1.0	5.2	50%	2.6
Other Supplies	1.1	1.7	2.8	2.8	2.8	11.0	-	-
MIS/IEC Materials	0.1	1.3	0.2	0.1	0.1	1.9	25%	0.5
Local Training	0.2	0.4	0.5	0.4	0.3	1.8	-	-
Studies	0.0	0.1	0.1	0.1	0.1	0.5	-	-
Fellowships	0.0	0.1	0.1	0.1	0.1	0.4	90%	0.3
Workshops	0.1	0.1	0.2	0.1	0.1	0.6	-	-
Consultants	0.0	0.0	0.0	0.0	0.0	0.1	-	-
NGO's	0.0	0.0	0.0	0.0	0.0	0.1	-	-
Total Investment Costs	12.3	24.5	42.2	34.6	19.9	133.5	25%	33.5
Recurrent Costs								
Salaries of Additional Staff	0.9	1.8	2.2	2.1	2.1	9.0	-	-
Operational Expenses	0.4	0.7	1.1	0.9	0.9	4.1	10%	0.4
Building Maintenance	-	-	-	0.0	0.1	0.2	10%	0.0
Surgical Pack Maintenance	-	-	0.0	0.0	0.0	0.1	5%	0.0
Vehicle Maintenance	-	0.0	0.0	0.0	0.0	0.0	10%	0.0
Equipment Maintenance	-	-	0.3	0.8	1.6	2.6	10%	0.3
Furniture Maintenance	-	0.0	0.0	0.1	0.1	0.3	-	-
Total Recurrent Costs	1.3	2.6	3.6	3.9	4.8	16.2	4%	0.7
Total BASELINE COSTS	13.6	27.1	45.8	38.5	24.7	149.7	23%	34.1
Physical Contingencies	1.3	2.6	4.4	3.7	2.3	14.4	24%	3.4
Price Contingencies	0.5	1.3	3.0	3.1	2.3	10.2	23%	2.4
Total PROJECT COSTS	15.4	31.0	53.2	45.3	29.4	174.2	23%	39.9
Taxes	0.9	1.7	3.0	2.4	1.7	9.7	-	-
Foreign Exchange	3.8	7.4	12.1	9.5	7.0	39.9	-	-

Table 11 Project Totals: Karnataka, Punjab and West Bengal
Disbursement Accounts by Financiers
Total Cost in US$ Millions

	State Shares		IDA			Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%		Amount	%	Exch.	Taxes)	Taxes
Civil Works	22.8	15%	129.4	85%		152.2	37%	22.8	121.1	8.4
Consultants, Studies, Prof Services, NGOs	1.8	10%	16.3	90%		18.1	4%	3.0	15.1	-
Furniture	1.1	10%	10.2	90%		11.4	3%	1.1	9.4	0.8
Vehicles	1.5	10%	13.1	90%		14.6	4%	10.9	2.2	1.5
Equipment	8.4	10%	76.0	90%		84.5	20%	35.8	42.7	5.9
Medicines, Lab and Other Supplies	5.1	10%	46.0	90%		51.1	12%	14.7	33.1	3.2
MIS/IEC Materials	0.7	10%	6.2	90%		6.9	2%	1.7	4.7	0.5
Training & Workshops	0.0	-	10.7	100%		10.7	3%	1.8	8.9	-
Salaries	13.8	35%	25.5	65%	/a	39.3	9%	-	39.3	-
Operational Expenditures	6.7	38%	11.1	62%	/a	17.8	4%	1.8	14.8	1.2
Building & Furniture Maintenance	1.4	46%	1.7	54%	/a	3.1	1%	0.3	2.6	0.2
Equipment & Vehicle Maintenance	3.2	46%	3.8	54%	/a	7.0	2%	0.7	5.8	0.5
Total	66.7	16%	350.0	84%		416.7	100%	94.6	299.9	22.2

Calculation of IDA Share (Net of Tax and Duties) = $\frac{350.0}{416.7 - 22.2}$ = 88.7%

NOTES:

/a Disbursements on Recurrent Costs are on a declining basis: Years 1-2 at 90%, Year 3 at 75%, Year 4 at 60%, Year 5 at 40%

Table 12 Karnataka: Disbursement Accounts by Financiers
Total Cost in US$ Million

	Govt of Karnataka		IDA		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
Civil Works	6.0	15%	34.1	85%	40.1	29%	5.9	31.9	2.2
Consultants, Studies, Prof Services, NGOs	0.5	10%	4.5	90%	5.0	4%	0.7	4.3	-
Furniture	0.3	10%	3.1	90%	3.5	3%	0.3	2.9	0.2
Vehicles	0.5	10%	4.5	90%	5.0	4%	3.8	0.8	0.5
Equipment	2.2	10%	19.7	90%	21.9	16%	8.8	11.6	1.5
Medicines, Lab and Other Supplies	2.2	10%	20.1	90%	22.3	16%	8.0	12.9	1.5
MIS/IEC Materials	0.1	10%	1.0	90%	1.1	1%	0.3	0.7	0.1
Training & Workshops	0.0	-	4.8	100%	4.8	4%	0.8	4.0	-
Salaries	7.2	39%	11.3	61% /a	18.5	14%	-	18.5	-
Operational Expenditures	4.2	41%	6.0	59% /a	10.2	8%	1.0	8.5	0.7
Building & Furniture Maintenance	0.8	44%	1.1	56% /a	1.9	1%	0.2	1.6	0.1
Equipment & Vehicle Maintenance	0.9	46%	1.1	54% /a	2.0	2%	0.2	1.7	0.1
Total	25.0	18%	111.3	82%	136.4	100%	30.1	99.3	7.0

NOTES:

/a Disbursements on Recurrent Costs are on a declining basis: Years 1-2 at 90%, Year 3 at 75%, Year 4 at 60%, Year 5 at 40%

Table 13 Punjab: Disbursement Accounts by Financiers
Total Cost in US$ Million

	Govt of Punjab		IDA		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
Civil Works	6.6	15%	37.3	85%	43.9	41%	6.6	34.9	2.4
Consultants, Studies, Prof Services, NGOs	0.6	10%	5.0	90%	5.6	5%	0.9	4.7	-
Furniture	0.2	10%	2.0	90%	2.2	2%	0.2	1.8	0.2
Vehicles	0.3	10%	2.5	90%	2.7	3%	2.1	0.4	0.3
Equipment	2.0	10%	18.0	90%	20.0	19%	9.4	9.3	1.4
Medicines, Lab and Other Supplies	0.9	10%	8.1	90%	9.0	8%	3.5	4.8	0.6
MIS/IEC Materials	0.4	10%	3.3	90%	3.7	4%	0.9	2.5	0.3
Training & Workshops	0.0	-	2.8	100%	2.8	3%	0.6	2.2	-
Salaries	3.4	32%	7.4	69% /a	10.8	10%	-	10.8	-
Operational Expenditures	1.0	36%	1.8	64% /a	2.8	3%	0.3	2.3	0.2
Building & Furniture Maintenance	0.3	49%	0.3	51% /a	0.7	1%	0.1	0.6	0.0
Equipment & Vehicle Maintenance	0.7	38%	1.2	63% /a	1.9	2%	0.2	1.6	0.1
Total	16.3	15%	89.7	85%	106.1	100%	24.6	76.0	5.5

NOTES:

/a Disbursements on Recurrent Costs are on a declining basis: Years 1-2 at 90%, Year 3 at 75%, Year 4 at 60%, Year 5 at 40%

Table 14 West Bengal: Disbursement Accounts by Financiers
Total Cost in US$ Million

	Govt of W.B.		IDA			Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%		Amount	%	Exch.	Taxes)	Taxes
Civil Works	10.2	15%	58.0	85%		68.2	39%	10.2	54.2	3.8
Consultants, Studies, Prof Services, NGOs	0.8	10%	6.8	90%		7.6	4%	1.4	6.2	-
Furniture	0.6	10%	5.1	90%		5.7	3%	0.6	4.7	0.4
Vehicles	0.7	10%	6.1	90%		6.8	4%	5.1	1.0	0.7
Equipment	4.3	10%	38.3	90%		42.5	24%	17.7	21.8	3.0
Medicines, Lab and Other Supplies	2.0	10%	17.8	90%		19.8	11%	3.2	15.5	1.1
MIS/IEC Materials	0.2	10%	1.9	90%		2.1	1%	0.5	1.5	0.2
Training & Workshops	0.0	-	3.0	100%		3.0	2%	0.4	2.7	-
Salaries	3.2	32%	6.8	68%	/a	10.0	6%	-	10.0	-
Operational Expenditures	1.6	32%	3.3	68%	/a	4.9	3%	0.5	4.0	0.3
Building & Furniture Maintenance	0.2	48%	0.3	52%	/a	0.5	0%	0.0	0.4	0.0
Equipment & Vehicle Maintenance	1.6	50%	1.5	50%	/a	3.1	2%	0.3	2.6	0.2
Total	25.3	15%	149.0	86%		174.2	100%	39.9	124.7	9.7

NOTES:

/a Disbursements on Recurrent Costs are on a declining basis: Years 1-2 at 90%, Year 3 at 75%, Year 4 at 60%, Year 5 at 40%

Table 15 Project Totals: Karnataka, Punjab and West Bengal
Expenditure Accounts by Project Components
Costs in US$ Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services		Physical Contingencies	
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Referral & External Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral System		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-	-	0.0	35.3	-	-	2.9	38.2	10%	3.8
Civil Works (New Const or Extension)	-	3.0	-	85.5	0.9	-	3.1	92.5	10%	9.3
Professional Services	-	0.2	0.0	11.8	0.1	-	0.6	12.8	10%	1.3
Furniture	0.0	0.3	0.1	-	9.0	-	0.2	9.7	10%	1.0
Major Medical Equipment	-	-	-	-	40.0	-	0.4	40.4	10%	4.0
Minor Medical Equipment	-	-	-	-	1.5	-	0.1	1.6	10%	0.2
Medical Equipment - Surgical Packs	-	-	-	-	2.9	-	0.1	2.9	10%	0.3
Equipment (Other)	0.1	4.4	0.5	1.9	20.1	-	0.4	27.4	10%	2.7
Vehicles	0.1	1.5	0.3	-	0.3	10.1	0.4	12.6	10%	1.3
Medical Lab Supplies	-	-	-	-	1.6	-	3.0	4.6	10%	0.5
Medicines	-	-	-	-	15.2	-	7.9	23.1	10%	2.3
Other Supplies	0.0	0.1	0.0	-	14.6	0.5	0.6	15.8	10%	1.6
MIS/IEC Materials	0.0	0.3	0.1	-	4.0	0.9	0.7	6.0	10%	0.6
Local Training	0.1	0.4	0.1	-	5.5	0.1	0.2	6.3	5%	0.3
Studies	0.5	0.6	0.0	-	0.8	-	0.0	1.9	10%	0.2
Fellowships	0.4	0.1	0.0	-	1.2	0.1	-	1.8	5%	0.1
Workshops	0.2	0.3	-	-	0.6	0.3	0.0	1.5	5%	0.1
Consultants	0.1	0.2	-	-	0.0	0.0	0.0	0.4	5%	0.0
NGO's	0.1	0.3	-	-	0.1	0.0	0.1	0.5	5%	0.0
Total Investment Costs	1.6	11.7	1.2	134.6	118.4	11.9	20.8	300.1	10%	29.5
Recurrent Costs										
Salaries of Additional Staff	0.5	7.0	0.8	-	26.4	-	0.6	35.2	5%	1.8
Operational Expenses	0.1	3.2	0.1	2.0	5.4	1.6	2.8	15.1	10%	1.5
Building Maintenance	-	0.0	-	2.2	-	-	0.0	2.2	10%	0.2
Surgical Pack Maintenance	-	-	-	-	0.1	-	0.0	0.1	10%	0.0
Vehicle Maintenance	0.0	0.0	0.1	-	-	0.4	0.0	0.5	10%	0.0
Equipment Maintenance	0.0	0.4	0.0	-	4.9	-	0.1	5.4	10%	0.5
Furniture Maintenance	0.0	0.0	0.0	-	0.4	-	0.0	0.4	10%	0.0
Total Recurrent Costs	0.6	10.5	1.0	4.1	37.1	2.0	3.5	59.0	7%	4.1
Total BASELINE COSTS	2.1	22.2	2.3	138.7	155.6	13.9	24.3	359.1	9%	33.6
Physical Contingencies	0.1	1.8	0.2	13.9	13.9	1.4	2.4	33.6	0%	-
Price Contingencies	0.1	1.5	0.1	8.9	10.7	0.8	1.8	24.0	9%	2.1
Total PROJECT COSTS	2.4	25.5	2.6	161.5	180.2	16.0	28.5	416.7	9%	35.7
Taxes	0.0	1.1	0.1	8.2	9.5	1.4	1.8	22.2	9%	2.0
Foreign Exchange	0.5	3.5	0.5	24.7	48.1	9.3	7.9	94.6	9%	8.5

Table 16 Karnataka: Expenditure Accounts by Project Components
Costs in US$ Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services		Physical Contingencies	
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Renovate & Extend Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral System		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-	-	-	7.23	-	-	-	7.23	10%	0.7
Civil Works (New Constr or Extension)	-	0.89	-	25.62	0.91	-	-	27.42	10%	2.7
Professional Services	-	0.03	-	3.06	0.09	-	-	3.18	10%	0.3
Furniture	0.01	0.09	0.04	-	2.86	-	-	2.99	10%	0.3
Major Medical Equipment	-	-	-	-	9.38	-	-	9.38	10%	0.9
Minor Medical Equipment	-	-	-	-	-	-	-	-	0%	-
Medical Equipment - Surgical Packs	-	-	-	-	-	-	-	-	0%	-
Equipment (Other)	0.05	4.28	0.21	1.94	2.94	-	-	9.42	10%	0.9
Vehicles	0.04	1.12	0.12	-	0.25	2.81	-	4.35	10%	0.4
Medical Lab Supplies	-	-	-	-	0.60	-	2.98	3.59	10%	0.4
Medicines	-	-	-	-	4.31	-	7.70	12.02	10%	1.2
Other Supplies	-	0.01	-	-	3.01	0.05	0.26	3.33	10%	0.3
MIS/IEC Materials	-	-	-	-	0.32	0.03	0.57	0.93	10%	0.1
Local Training	-	0.23	-	-	2.42	0.06	0.17	2.88	5%	0.1
Studies	0.36	-	-	-	0.20	-	-	0.56	10%	0.1
Fellowships	0.37	-	-	-	0.43	-	-	0.80	5%	0.0
Workshops	0.15	-	-	-	0.36	0.11	-	0.62	5%	0.0
Consultants	0.07	0.17	-	-	-	0.00	-	0.24	5%	0.0
NGO's	0.10	0.26	-	-	-	0.00	-	0.36	5%	0.0
Total Investment Costs	1.16	7.07	0.37	37.85	28.09	3.06	11.70	89.30	10%	8.7
Recurrent Costs	-	-	-	-	-	-	-	-	0%	-
Salaries of Additional Staff	0.18	2.17	0.47	-	13.10	-	0.58	16.51	5%	0.8
Operational Expenses	0.05	2.43	0.10	1.96	2.21	-	1.92	8.67	10%	0.9
Building Maintenance	-	-	-	1.65	-	-	-	1.65	10%	0.2
Surgical Pack Maintenance	-	-	-	-	-	-	-	-	0%	-
Vehicle Maintenance	-	-	-	-	-	-	-	-	0%	-
Equipment Maintenance	0.01	0.31	-	-	1.38	-	-	1.71	10%	0.2
Furniture Maintenance	-	-	-	-	-	-	-	-	0%	-
Total Recurrent Costs	0.25	4.91	0.57	3.61	16.69	-	2.50	28.54	7%	2.0
Total BASELINE COSTS	1.40	11.99	0.94	41.45	44.78	3.06	14.20	117.84	9%	10.7
Physical Contingencies	0.10	1.06	0.07	4.15	3.66	0.30	1.38	10.71	0%	-
Price Contingencies	0.09	0.80	0.06	2.43	3.15	0.18	1.12	7.84	8%	0.6
Total PROJECT COSTS	1.59	13.85	1.08	48.03	51.60	3.54	16.70	136.39	8%	11.4
Taxes	0.02	0.77	0.04	2.55	2.23	0.33	1.10	7.04	9%	0.6
Foreign Exchange	0.43	2.47	0.17	7.22	11.66	2.45	5.69	30.08	9%	2.7

Table 17 Punjab: Expenditure Accounts by Project Components
Costs in US$ Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services			Physical Contingencies
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Renovate & Extend Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral System		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-	-	-	4.49	-	-	-	4.49	10%	0.4
Civil Works (New Constr or Extension)	-	-	-	33.22	-	-	-	33.22	10%	3.3
Professional Services	-	-	-	3.77	-	-	-	3.77	10%	0.4
Furniture	0.01	0.06	0.04	-	1.77	-	-	1.87	10%	0.2
Major Medical Equipment					11.42		-	11.42	10%	1.1
Minor Medical Equipment				-	0.50	-	-	0.50	10%	0.1
Medical Equipment - Surgical Packs					0.67	-	-	0.67	10%	0.1
Equipment (Other)		0.03		-	4.50	-	-	4.52	10%	0.5
Vehicles	0.01	0.03	0.22	-	-	2.18	-	2.44	10%	0.2
Medical Lab Supplies	-	-	-	-	0.32	-	-	0.32	10%	0.0
Medicines	-	-	-	-	5.86	-	-	5.86	10%	0.6
Other Supplies	-	-	-	-	1.44	-	-	1.44	10%	0.1
MIS/IEC Materials	0.01	0.23	0.05	-	2.34	0.57	-	3.20	10%	0.3
Local Training	-	0.05	0.02	-	1.62	-	-	1.70	5%	0.1
Studies	0.03	0.42	0.03	-	0.42	-	-	0.90	10%	0.1
Fellowships	-	-	0.03	-	0.57	-	-	0.60	5%	0.0
Workshops	-	0.13	-	-	0.13	-	-	0.26	5%	0.0
Consultants	-	-	-	-	0.05	-	-	0.05	5%	0.0
NGO's	-	-	-	-	0.07	-	-	0.07	5%	0.0
Total Investment Costs	0.05	0.95	0.39	41.48	31.68	2.76	-	77.31	10%	7.6
Recurrent Costs	-	-	-	-	-	-	-	-	0%	-
Salaries of Additional Staff	0.13	1.34	0.32	-	7.94	-	-	9.72	5%	0.5
Operational Expenses	0.01	0.58	0.04	-	1.61	0.11	-	2.36	10%	0.2
Building Maintenance	-	-	-	0.42	-	-	-	0.42	10%	0.0
Surgical Pack Maintenance	-	-	-	-	0.02	-	-	0.02	10%	0.0
Vehicle Maintenance	0.01	0.01	0.06	-	-	0.39	-	0.47	10%	0.0
Equipment Maintenance	-	0.04	-	-	1.10	-	-	1.14	10%	0.1
Furniture Maintenance	-	0.00	-	-	0.14	-	-	0.14	10%	0.0
Total Recurrent Costs	0.14	1.98	0.43	0.42	10.81	0.50	-	14.27	7%	0.9
Total BASELINE COSTS	0.20	2.92	0.82	41.90	42.49	3.26	-	91.58	9%	8.5
Physical Contingencies	0.01	0.22	0.06	4.19	3.73	0.33	-	8.54	0%	-
Price Contingencies	0.01	0.19	0.04	2.69	2.90	0.12	-	5.95	9%	0.5
Total PROJECT COSTS	0.22	3.32	0.92	48.78	49.11	3.71	-	106.07	9%	9.0
Taxes	0.00	0.08	0.04	2.43	2.56	0.33	-	5.47	9%	0.5
Foreign Exchange	0.01	0.18	0.24	7.49	14.66	2.06	-	24.64	9%	2.2

Table 18 West Bengal: Expenditure Accounts by Project Components Costs in US$ Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services		Physical Contingencies	
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Renovate & Extend Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral System		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-	-	0.02	23.59	-	-	2.91	26.52	10%	2.7
Civil Works (New Constr or Extension)	-	2.14	-	26.62	-	-	3.13	31.90	10%	3.2
Professional Services	-	0.21	0.00	5.02	-	-	0.60	5.84	10%	0.6
Furniture	0.03	0.16	0.04	-	4.42	-	0.21	4.86	10%	0.5
Major Medical Equipment	-	-	-	-	19.24	-	0.39	19.62	10%	2.0
Minor Medical Equipment	-	-	-	-	1.00	-	0.05	1.05	10%	0.1
Medical Equipment - Surgical Packs	-	-	-	-	2.19	-	0.06	2.25	10%	0.2
Equipment (Other)	0.03	0.11	0.28	-	12.62	-	0.43	13.47	10%	1.3
Vehicles	0.05	0.32	-	-	-	5.06	0.41	5.84	10%	0.6
Medical Lab Supplies	-	-	-	-	0.64	-	0.06	0.69	10%	0.1
Medicines	-	-	-	-	4.99	-	0.20	5.19	10%	0.5
Other Supplies	0.01	0.09	0.03	-	10.16	0.46	0.29	11.04	10%	1.1
MIS/IEC Materials	-	0.03	0.03	-	1.38	0.29	0.13	1.86	10%	0.2
Local Training	0.06	0.12	0.05	-	1.50	-	0.03	1.76	5%	0.1
Studies	0.06	0.14	-	-	0.23	-	0.03	0.46	10%	0.0
Fellowships	0.03	0.09	-	-	0.16	0.09	-	0.37	5%	0.0
Workshops	0.06	0.22	-	-	0.16	0.14	0.03	0.60	5%	0.0
Consultants	0.01	0.01	-	-	-	-	0.05	0.07	5%	0.0
NGO's	0.02	0.02	-	-	-	-	0.07	0.10	5%	0.0
Total Investment Costs	0.36	3.67	0.47	55.23	58.68	6.04	9.05	133.49	10%	13.2
Recurrent Costs	-	-	-	-	-	-	-	-	0%	-
Salaries of Additional Staff	0.16	3.45	-	-	5.36	-	-	8.97	5%	0.4
Operational Expenses	0.02	0.14	-	-	1.53	1.51	0.89	4.09	10%	0.4
Building Maintenance	-	0.02	-	0.12	-	-	0.01	0.15	10%	0.0
Surgical Pack Maintenance	-	-	-	-	0.07	-	0.00	0.07	10%	0.0
Vehicle Maintenance	-	-	-	-	-	-	0.03	0.03	10%	0.0
Equipment Maintenance	0.00	0.01	0.04	-	2.45	-	0.08	2.58	10%	0.3
Furniture Maintenance	0.00	0.01	0.00	-	0.24	-	0.01	0.27	10%	0.0
Total Recurrent Costs	0.19	3.63	0.05	0.12	9.64	1.51	1.03	16.16	7%	1.2
Total BASELINE COSTS	0.55	7.30	0.52	55.35	68.32	7.55	10.08	149.65	10%	14.4
Physical Contingencies	0.04	0.53	0.05	5.53	6.47	0.74	1.00	14.37	0%	-
Price Contingencies	0.04	0.48	0.04	3.78	4.68	0.50	0.69	10.20	9%	0.9
Total PROJECT COSTS	0.62	8.31	0.60	64.66	79.47	8.79	11.77	174.23	9%	15.3
Taxes	0.01	0.22	0.04	3.24	4.75	0.76	0.66	9.68	9%	0.9
Foreign Exchange	0.09	0.87	0.09	10.00	21.82	4.77	2.26	39.90	9%	3.6

Table 19 Project Totals: Karnataka, Punjab and West Bengal
Expenditure Accounts by Project Components
Costs in Rs. Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services	Physical Contingencies		
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Renovate & Extend Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral Syste		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-	-	0.85	1,228.75	-	-	101.10	1,330.70	10%	133.1
Civil Works (New Const or Extension)	-	105.50	-	2,974.08	31.82	-	108.90	3,220.30	10%	322.0
Professional Services	-	8.55	0.09	412.29	3.18	-	21.00	445.11	10%	44.5
Furniture	1.54	10.52	4.28	-	314.74	-	7.42	338.50	10%	33.9
Major Medical Equipment	-	-	-	-	1,393.34	-	13.43	1,406.77	10%	140.7
Minor Medical Equipment	-	-	-	-	52.33	-	1.83	54.16	10%	5.4
Medical Equipment - Surgical Packs	-	-	-	-	99.22	-	2.07	101.29	10%	10.1
Equipment (Other)	2.75	153.67	17.07	67.51	698.02	-	14.81	953.83	10%	95.4
Vehicles	3.57	51.50	11.80	-	8.78	349.93	14.11	439.69	10%	44.0
Medical Lab Supplies	-	-	-	-	54.12	-	105.78	159.90	10%	16.0
Medicines	-	-	-	-	527.86	-	275.13	802.99	10%	80.3
Other Supplies	0.50	3.30	1.02	-	508.54	17.76	19.18	550.30	10%	55.0
MIS/IEC Materials	0.25	9.04	2.90	-	140.52	31.20	24.40	208.31	10%	20.8
Local Training	2.00	14.09	2.68	-	192.72	2.00	7.00	220.49	5%	11.0
Studies	15.70	19.50	1.00	-	29.50	-	1.00	66.70	10%	6.7
Fellowships	14.00	3.13	1.00	-	40.70	3.00	-	61.83	5%	3.1
Workshops	7.20	12.00	-	-	22.53	8.75	1.00	51.48	5%	2.6
Consultants	2.80	6.40	-	-	1.60	0.04	1.60	12.44	5%	0.6
NGO's	4.20	9.60	-	-	2.40	0.06	2.40	18.66	5%	0.9
Total Investment Costs	54.51	406.80	42.69	4,682.63	4,121.91	412.74	722.16	10,443.44	10%	1,026.1
Recurrent Costs	-	-	-	-	-	-	-	-	0%	-
Salaries of Additional Staff	16.50	242.26	27.56	-	918.49	-	20.34	1,225.15	5%	61.3
Operational Expenses	2.87	109.71	4.98	68.18	186.35	56.36	97.68	526.13	10%	52.6
Building Maintenance	-	0.75	-	75.92	-	-	0.47	77.14	10%	7.7
Surgical Pack Maintenance	-	-	-	-	3.00	-	0.06	3.06	10%	0.3
Vehicle Maintenance	0.18	0.29	2.25	-	-	13.68	0.96	17.36	10%	1.7
Equipment Maintenance	0.60	12.54	1.53	-	171.59	-	2.82	189.08	10%	18.9
Furniture Maintenance	0.08	0.50	0.13	-	13.16	-	0.40	14.27	10%	1.4
Total Recurrent Costs	20.23	366.05	36.45	144.10	1,292.59	70.04	122.73	2,052.19	7%	144.0
Total BASELINE COSTS	74.74	772.85	79.14	4,826.73	5,414.50	482.78	844.89	12,495.63	9%	1,170.1
Physical Contingencies	5.14	62.91	6.35	482.67	482.53	47.59	82.87	1,170.06	0%	-
Price Contingencies	16.77	188.98	18.58	1,062.23	1,399.88	98.39	240.91	3,025.75	9%	257.6
Total PROJECT COSTS	96.65	1,024.74	104.07	6,371.63	7,296.91	628.76	1,168.67	16,691.44	9%	1,427.7
Taxes	1.29	42.94	4.71	325.01	385.84	55.82	72.52	888.13	9%	80.7
Foreign Exchange	20.64	139.97	19.37	975.09	1,943.55	361.12	328.25	3,787.99	9%	341.4

Table 20 Karnataka: Expenditure Accounts by Project Components
Costs in Rs. Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services		Physical Contingencies	
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Renovate & Extend Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral Syste		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-	-	-	251.55	-	-	-	251.55	10%	25.2
Civil Works (New Constr or Extension)	-	30.90	-	891.63	31.82	-	-	954.35	10%	95.4
Professional Services	-	1.09	-	106.32	3.18	-	-	110.59	10%	11.1
Furniture	0.34	3.06	1.30	-	99.38	-	-	104.08	10%	10.4
Major Medical Equipment	-	-	-	-	326.47	-	-	326.47	10%	32.6
Minor Medical Equipment	-	-	-	-	-	-	-	-	0%	-
Medical Equipment - Surgical Packs	-	-	-	-	-	-	-	-	0%	-
Equipment (Other)	1.75	148.77	7.27	67.51	102.37	-	-	327.67	10%	32.8
Vehicles	1.43	39.08	4.30	-	8.78	97.78	-	151.37	10%	15.1
Medical Lab Supplies	-	-	-	-	21.00	-	103.78	124.78	10%	12.5
Medicines	-	-	-	-	150.07	-	268.13	418.20	10%	41.8
Other Supplies	-	0.30	-	-	104.82	1.75	9.18	116.05	10%	11.6
MIS/IEC Materials	-	-	-	-	11.10	1.20	20.00	32.30	10%	3.2
Local Training	-	8.00	-	-	84.12	2.00	6.00	100.12	5%	5.0
Studies	12.50	-	-	-	7.00	-	-	19.50	10%	2.0
Fellowships	13.00	-	-	-	15.00	-	-	28.00	5%	1.4
Workshops	5.20	-	-	-	12.50	3.75	-	21.45	5%	1.1
Consultants	2.40	6.00	-	-	-	0.04	-	8.44	5%	0.4
NGO's	3.60	9.00	-	-	-	0.06	-	12.66	5%	0.6
Total Investment Costs	40.22	246.20	12.87	1,317.01	977.61	106.58	407.09	3,107.58	10%	302.2
Recurrent Costs	-	-	-	-	-	-	-	-	0%	-
Salaries of Additional Staff	6.30	75.58	16.48	-	455.85	-	20.34	574.55	5%	28.7
Operational Expenses	1.87	84.52	3.48	68.18	76.97	-	66.68	301.70	10%	30.2
Building Maintenance	-	-	-	57.41	-	-	-	57.41	10%	5.7
Surgical Pack Maintenance	-	-	-	-	-	-	-	-	0%	-
Vehicle Maintenance	-	-	-	-	-	-	-	-	0%	-
Equipment Maintenance	0.30	10.93	-	-	48.06	-	-	59.49	10%	5.9
Furniture Maintenance	-	-	-	-	-	-	-	-	0%	-
Total Recurrent Costs	8.67	171.03	19.96	125.59	580.88	-	87.02	993.15	7%	70.6
Total BASELINE COSTS	48.89	417.23	32.83	1,442.60	1,558.49	106.58	494.11	4,100.73	9%	372.8
Physical Contingencies	3.36	36.79	2.46	144.26	127.48	10.37	48.09	372.81	0%	-
Price Contingencies	10.64	104.32	8.70	259.09	425.89	22.63	153.20	984.47	8%	80.7
Total PROJECT COSTS	62.89	558.35	43.99	1,845.95	2,111.85	139.57	695.41	5,458.01	8%	453.5
Taxes	0.62	30.88	1.71	98.18	90.94	13.04	45.97	281.33	9%	25.6
Foreign Exchange	16.68	98.08	6.83	276.93	473.33	96.40	237.39	1,205.63	9%	108.3

Table 21 Punjab: Expenditure Accounts by Project Components
Costs in Rs. Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services	Physical Contingencies		
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Renovate & Extend Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral Syst.		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-		-	136.40	-	-	-	136.40	10%	13.6
Civil Works (New Const or Extension)			-	1,136.00	-	-	-	1,136.00	10%	113.6
Professional Services	-	-	-	131.24	-	-	-	131.24	10%	13.1
Furniture	0.20	2.00	1.50	-	61.54	-	-	65.24	10%	6.5
Major Medical Equipment	-	-	-	-	397.48	-	-	397.48	10%	39.7
Minor Medical Equipment	-	-	-	-	17.51	-	-	17.51	10%	1.8
Medical Equipment - Surgical Packs	-	-	-	-	23.16	-	-	23.16	10%	2.3
Equipment (Other)	-	0.90	-	-	156.55	-	-	157.45	10%	15.7
Vehicles	0.25	1.17	7.50	-	-	76.00	-	84.92	10%	8.5
Medical Lab Supplies	-	-	-	-	11.02	-	-	11.02	10%	1.1
Medicines	-	-	-	-	204.02	-	-	204.02	10%	20.4
Other Supplies	-	-	-	-	50.00	-	-	50.00	10%	5.0
MIS/IEC Materials	0.25	8.04	1.70	-	81.42	20.00	-	111.41	10%	11.1
Local Training	-	1.80	0.85	-	56.52	-	-	59.17	5%	3.0
Studies	1.20	14.50	1.00	-	14.50	-	-	31.20	10%	3.1
Fellowships	-	-	1.00	-	20.00	-	-	21.00	5%	1.1
Workshops	-	4.50	-	-	4.60	-	-	9.10	5%	0.5
Consultants	-	-	-	-	1.60	-	-	1.60	5%	0.1
NGO's	-	-	-	-	2.40	-	-	2.40	5%	0.1
Total Investment Costs	1.90	32.91	13.55	1,443.64	1,102.32	96.00	-	2,690.32	10%	264.4
Recurrent Costs	-	-	-	-	-	-	-	-	0%	-
Salaries of Additional Staff	4.50	46.68	11.08	-	276.15	-	-	338.41	5%	16.9
Operational Expenses	0.30	20.23	1.50	-	56.20	3.73	-	81.96	10%	8.2
Building Maintenance	-	-	-	14.48	-	-	-	14.48	10%	1.4
Surgical Pack Maintenance	-	-	-	-	0.72	-	-	0.72	10%	0.1
Vehicle Maintenance	0.18	0.29	2.25	-	-	13.68	-	16.40	10%	1.6
Equipment Maintenance	-	1.39	-	-	38.26	-	-	39.65	10%	4.0
Furniture Maintenance	-	0.16	-	-	4.85	-	-	5.01	10%	0.5
Total Recurrent Costs	4.98	68.75	14.83	14.48	376.18	17.41	-	496.63	7%	32.7
Total BASELINE COSTS	6.88	101.66	28.38	1,458.12	1,478.50	113.41	-	3,186.95	9%	297.1
Physical Contingencies	0.46	7.52	2.19	145.81	129.79	11.34	-	297.11	0%	-
Price Contingencies	1.51	23.07	5.34	322.11	369.40	13.30	-	734.74	9%	62.3
Total PROJECT COSTS	8.86	132.24	35.92	1,926.04	1,977.69	138.05	-	4,218.79	9%	359.6
Taxes	0.12	3.25	1.53	96.73	103.39	12.31	-	217.33	9%	19.8
Foreign Exchange	0.39	7.11	8.89	295.96	592.03	74.78	-	979.16	9%	88.0

Table 22 West Bengal: Expenditure Accounts by Project Components
Costs in Rs. Millions

	Component 1 - Management Development & Institutional Strengthening			Component 2 - Improve Service Quality, Access and Effectiveness			Component 3 - Improve Access to Basic Health Services		Physical Contingencies	
	Improve Institutional Framework for Policy	Strengthen Management & Implementation Capacity	Develop Surveillance Capacity	Renovate & Extend Community, Area & District Hospitals	Upgrade Clinical Effectiveness	Improve Referral Syste		TOTAL	%	Amount
Investment Costs										
Civil Works (Renovation)	-	-	0.85	820.80	-	-	101.10	922.75	10%	92.3
Civil Works (New Constr or Extension)	-	74.60	-	926.45	-	-	108.90	1,109.95	10%	111.0
Professional Services	-	7.46	0.09	174.73	-	-	21.00	203.28	10%	20.3
Furniture	1.00	5.46	1.48	-	153.82	-	7.42	169.18	10%	16.9
Major Medical Equipment	-	-	-	-	669.39	-	13.43	682.82	10%	68.3
Minor Medical Equipment	-	-	-	-	34.82	-	1.83	36.65	10%	3.7
Medical Equipment - Surgical Packs	-	-	-	-	76.06	-	2.07	78.13	10%	7.8
Equipment (Other)	1.00	4.00	9.80	-	439.10	-	14.81	468.71	10%	46.9
Vehicles	1.89	11.25	-	-	-	176.15	14.11	203.40	10%	20.3
Medical Lab Supplies	-	-	-	-	22.10	-	2.00	24.10	10%	2.4
Medicines	-	-	-	-	173.77	-	7.00	180.77	10%	18.1
Other Supplies	0.50	3.00	1.02	-	353.72	16.01	10.00	384.25	10%	38.4
MIS/IEC Materials	-	1.00	1.20	-	48.00	10.00	4.40	64.60	10%	6.5
Local Training	2.00	4.29	1.83	-	52.08	-	1.00	61.20	5%	3.1
Studies	2.00	5.00	-	-	8.00	-	1.00	16.00	10%	1.6
Fellowships	1.00	3.13	-	-	5.70	3.00	-	12.83	5%	0.6
Workshops	2.00	7.50	-	-	5.43	5.00	1.00	20.93	5%	1.0
Consultants	0.40	0.40	-	-	-	-	1.60	2.40	5%	0.1
NGO's	0.60	0.60	-	-	-	-	2.40	3.60	5%	0.2
Total Investment Costs	12.39	127.69	16.27	1,921.98	2,041.99	210.16	315.07	4,645.55	10%	459.5
Recurrent Costs	-	-	-	-	-	-	-	-	0%	-
Salaries of Additional Staff	5.70	120.00	-	-	186.49	-	-	312.19	5%	15.6
Operational Expenses	0.70	4.96	-	-	53.18	52.63	31.00	142.47	10%	14.2
Building Maintenance	-	0.75	-	4.03	-	-	0.47	5.25	10%	0.5
Surgical Pack Maintenance	-	-	-	-	2.28	-	0.06	2.34	10%	0.2
Vehicle Maintenance	-	-	-	-	-	-	0.96	0.96	10%	0.1
Equipment Maintenance	0.10	0.22	1.53	-	85.27	-	2.82	89.94	10%	9.0
Furniture Maintenance	0.08	0.34	0.13	-	8.31	-	0.40	9.26	10%	0.9
Total Recurrent Costs	6.58	126.27	1.66	4.03	335.53	52.63	35.71	562.41	7%	40.6
Total BASELINE COSTS	18.97	253.96	17.93	1,926.01	2,377.52	262.79	350.78	5,207.96	10%	500.1
Physical Contingencies	1.31	18.60	1.70	192.60	225.27	25.88	34.78	500.14	0%	-
Price Contingencies	4.62	61.59	4.53	481.03	604.59	62.47	87.71	1,306.54	9%	114.4
Total PROJECT COSTS	24.90	334.15	24.16	2,599.64	3,207.38	351.14	473.26	7,014.63	9%	614.6
Taxes	0.56	8.81	1.47	130.10	191.54	30.46	26.55	389.47	9%	35.4
Foreign Exchange	3.57	34.79	3.65	402.21	878.18	189.94	90.86	1,603.19	9%	145.1

Table 23: Project Components by Year
Base Costs in Rs. Million

	Base Cost in Indian FY					
	96/97	97/98	98/99	99/2000	2000/01	Total
1. Management Development & Institutional Strengthening						
1a - Improve Institutional Framework for Policy Develpment	9.4	18.7	20.4	13.3	12.9	74.7
1b - Strengthen Management & Implementation Capacity	78.6	175.1	184.2	176.8	158.1	772.9
1c - Develop Surveillance Capacity	10.2	19.1	16.6	16.1	17.0	79.1
Subtotal	98.3	213.0	221.2	206.2	188.0	926.7
2. Improve Service Quality, Access and Effectivenes						
2a - Renovate & Extend Community, Area & District Hospitals	706.4	1,112.0	1,431.1	1,178.4	398.8	4,826.7
2b - Upgrade Clinical Effectiveness	457.3	1,086.2	1,378.6	1,214.3	1,278.1	5,414.5
2c - Improve Referral Mechanism	90.3	148.8	99.3	75.0	69.4	482.8
Subtotal	1,253.9	2,347.0	2,909.0	2,467.8	1,746.4	10,724.0
3 - Improve Access to Basic Health Services	48.9	120.7	207.0	237.7	230.7	844.9
Total BASELINE COSTS	1,401.1	2,680.6	3,337.2	2,911.6	2,165.1	12,495.6
Physical Contingencies	133.3	253.2	315.3	272.3	196.0	1,170.1
Price Contingencies	52.7	361.2	774.4	940.0	897.5	3,025.7
Total PROJECT COSTS	1,587.1	3,295.0	4,426.9	4,123.9	3,258.5	16,691.4
Taxes	84.4	179.9	235.5	215.3	173.1	888.1
Foreign Exchange	350.6	797.2	994.4	880.5	765.2	3,788.0

Table 24: Project Components by Financiers
Total Costs in US$ Millions

	GOI		IDA		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%			
1. Management Development & Institutional Strengthening									
1a - Improve Institutional Framework for Policy Development	0.3	13.8%	2.1	86.2%	2.4	0.6%	0.5	1.9	0.0
1b - Strengthen Management & Implementation Capacity	5.8	22.7%	19.7	77.3%	25.5	6.1%	3.5	20.9	1.1
1c - Develop Surveillance Capacity	0.6	21.9%	2.0	78.1%	2.6	0.6%	0.5	2.0	0.1
Subtotal	6.7	21.9%	23.8	78.1%	30.5	7.3%	4.5	24.7	1.2
2. Improve Service Quality, Access and Effectivenes									
2a - Renovate & Extend Community, Area & District Hospitals	24.8	15.4%	136.6	84.6%	161.5	38.8%	24.7	128.5	8.2
2b - Upgrade Clinical Effectiveness	28.7	15.9%	151.5	84.1%	180.2	43.2%	48.1	122.5	9.5
2c - Improve Referral Mechanism	2.1	13.1%	13.9	86.9%	16.0	3.9%	9.3	5.1	1.4
Subtotal	55.6	15.6%	302.1	84.4%	357.7	85.8%	82.1	256.4	19.2
3 - Improve Access to Basic Health Services	4.3	15.3%	24.1	84.7%	28.5	6.8%	7.9	18.8	1.8
Total Disbursement	66.7	16.0%	350.0	84.0%	416.7	100.0%	94.6	299.9	22.2

SUMMARY OF CONSTRUCTION PROGRAM

Karnataka: List of Hospitals to be Extended/Renovated

Code	Place	Type of Health Facility	Bed Strength		
			Existing	Proposed	Additional.
	Karnataka State		**14858**	**18690**	**3832**
	Bangalore District		**972**	**1103**	**131**
104	Anekal	Taluk Hospital	16	50	34
103	Bangalore	HSIS Women & Children	120	120	0
102	Bangalore	Epidemic Diseases Hospital	128	128	0
101	Bangalore	Vanivilas Hospital	605	605	0
105	Krishnarajapuram	Taluk Hospital	94	100	6
106	Yellahanka	Taluk Hospital	9	100	91
	Bangalore Rural District		**331**	**390**	**59**
201	Channapatna	Taluk Hospital	94	100	6
202	Devanhalli	Taluk Hospital	28	30	2
203	Doddaballapur #	Sub-Division Hospital	47	50	3
204	Hosakote	Taluk Hospital	23	30	7
205	Kanakapura	Taluk Hospital	50	50	0
206	Magadi	Taluk Hospital	30	30	0
207	Nelamangala #	Taluk Hospital	12	50	38
208	Ramanagaram #	Sub-Division Hospital	47	50	3
	Belgaum District		**1058**	**1220**	**162**
302	Athni	Taluk Hospital	18	50	32
301	Belgaum #	District Hospital	740	740	0
303	Chikodi	Sub-Division Hospital	13	50	37
304	Nipani #	Community Health Centre	10	30	20
305	Gokak	Taluk Hospital	40	50	10
306	Hukeri	Taluk Hospital	30	30	0
307	Khanapur	Taluk Hospital	28	30	2
308	Saundatti-Yellamma	Taluk Hospital	47	50	3
309	Yargatti	Community Health Centre	24	30	6
310	Ramdurg	Taluk Hospital	28	50	22
311	Raybag	Taluk Hospital	6	30	24
312	Bailhongal	Sub-Division Hospital	50	50	0
313	Kittur	Community Health Centre	24	30	6
	Bijapur District		**881**	**1260**	**379**
602	Badami	Taluk Hospital	12	30	18
603	Guledagudda	Community Health Centre	25	30	5
604	Bagalkot	Sub-Division Hospital	150	150	0
605	Basavana Bagevadi	Taluk Hospital	10	50	40
601	Bijapur #	District Hospital	440	440	0
606	Bilgi	Taluk Hospital	10	30	20
607	Hungund #	Taluk Hospital	30	50	20
608	Ilkal	Community Health Centre	20	50	30
609	Indi	Sub-Division Hospital	10	50	40
610	Tadavalaga	Community Health Centre	6	30	24
611	Jamkhandi	Sub-Division Hospital	50	100	50
612	Rabkavi Banahatti	Community Health Centre	16	30	14
613	Kalgi	Community Health Centre	6	30	24
614	Muddebihal	Taluk Hospital	30	50	20
615	Talikota	Community Health Centre	14	30	16
616	Mahalingpur	Community Health Centre	30	30	0

Casualty Ward to be strengthened/provided

SUMMARY OF CONSTRUCTION PROGRAM

Karnataka: List of Hospitals to be Extended/Renovated

Code	Place	Type of Health Facility	Bed Strength		
			Existing	Proposed	Additional
	Bijapur District Continued				
617	Mudhol	Taluk Hospital	10	30	20
618	Sindgi	Taluk Hospital	12	50	38
	Chikmagalur District		**651**	**816**	**165**
702	Chikmagalur	Women & Children Hospital	88	100	12
701	Chikmagalur #	District Hospital	274	300	26
703	Birur	Community Health Centre	56	56	0
704	Kadur	Taluk Hospital	51	100	49
705	Koppa	Taluk Hospital	36	50	14
706	Mudigere	Taluk Hospital	64	100	36
707	Narasimharajapura	Taluk Hospital	18	30	12
708	Sringeri	Taluk Hospital	14	30	16
709	Tarikere #	Sub-Division Hospital	50	50	0
	Chitradurga District		**1703**	**1870**	**167**
802	Challakere	Taluk Hospital	30	50	20
903	Nayakanahatti	Community Health Centre	0	30	30
804	Parasurampura	Community Health Centre	30	30	0
805	Bharamasagara	Community Health Centre	6	30	24
801	Chitradurga #	District Hospital	391	400	9
806	Sirigere	Taluk Hospital	30	30	0
807	Davangre	Women & Children Hospital	100	100	0
808	Davangre #	Sub-Division Hospital	850	850	0
809	Harihar	Taluk Hospital	50	50	0
810	Hiriyur #	Taluk Hospital	50	100	50
811	Holalkere	Taluk Hospital	30	50	20
812	Hosdurga	Taluk Hospital	36	50	14
813	Jagalur	Taluk Hospital	50	50	0
814	Molakalmuru #	Taluk Hospital	50	50	0
	Dakshina Kannada District		**1592**	**1695**	**103**
903	Bantval	Taluk Hospital	30	30	0
904	Beltangadi	Taluk Hospital	30	30	0
905	Karkal	Taluk Hospital	120	120	0
906	Nitte	Community Health Centre	6	30	24
907	Kundapura #	Sub-Division Hospital	100	100	0
901	Mangalore #	Wenlock District Hospital	705	705	0
902	Mangalore	Lady Goshen Hospital	234	250	16
908	Mulki	Community Health Centre	44	50	6
909	Puttur #	Sub-Division Hospital	80	100	20
910	Sulya	Taluk Hospital	30	50	20
911	Shirva	Community Health Centre	21	30	9
912	Udupi	Taluk Hospital	100	100	0
913	Udupi	Women & Children Hospital	92	100	8
	Dharwad District		**1872**	**2255**	**383**
1002	Byadgi	Taluk Hospital	30	30	0
1001	Dharwad	District Hospital	170	250	80
1003	Gadag	Women & Children Hospital	42	50	8
1004	Gadag	Sub-Division Hospital	60	100	40
1005	Akki Alur	Community Health Centre	18	30	12
1006	Hangal	Taluk Hospital	28	30	2

Casualty Ward to be strengthened/provided

SUMMARY OF CONSTRUCTION PROGRAM

Karnataka: List of Hospitals to be Extended/Renovated

Code	Place	Type of Health Facility	Bed Strength		
			Existing	Proposed	Additional.
	Dharwad District Continued				
1007	Haveri #	Sub-Division Hospital	90	100	10
1008	Hirekerur	Taluk Hospital	30	50	20
1009	Chitaguppa	Community Health Centre	45	50	5
1010	Hubli #	KMC Hospital	740	740	0
1011	Kalghatgi	Taluk Hospital	10	30	20
1012	Kundgol	Taluk Hospital	6	30	24
1013	Lakshemeshwar	Community Health Centre	21	30	9
1014	Mundargi	Taluk Hospital	0	30	30
1015	Nargund	Taluk Hospital	20	30	10
1016	Navalgund	Taluk Hospital	18	30	12
1017	Ranibennur	Taluk Hospital	50	50	0
1018	Ranibennur	Taluk Hospital	22	30	8
1019	Gajendragarh	Community Health Centre	21	30	9
1020	Ron	Taluk Hospital	6	30	24
1021	Savanur	Sub-Division Hospital	30	50	20
1021	Shiggaon	Taluk Hospital	30	50	20
1023	Shirhatti	Taluk Hospital	10	30	20
	Hassan District		**821**	**1150**	**329**
1202	Alur	Taluk Hospital	10	30	20
1203	Arkalgud	Taluk Hospital	30	50	20
1204	Konanur	Community Health Centre	15	30	15
1205	Arsikere	Taluk Hospital	97	100	3
1206	Belur	Taluk Hospital	10	50	40
1207	Channarayapatna #	Taluk Hospital	50	50	0
1208	Hirisave	Community Health Centre	10	30	20
1209	Dudda	Community Health Centre	6	30	24
1201	Hassan #	District Hospital	344	500	156
1210	Halli Mysore	Community Health Centre	16	30	14
1211	Holenarasipur	Taluk Hospital	100	100	0
1212	Sakleshpur #	Sub-Division Hospital	133	150	17
	Kodagu District		**953**	**982**	**29**
1302	Madikeri	Women & Children Hospital	210	210	0
1301	Madikeri #	District Hospital	200	200	0
1303	Kushalnagar	Community Health Centre	34	50	16
1304	Sanivarasante	Community Health Centre	30	30	0
1305	Somvarpet	Taluk Hospital	112	112	0
1306	Gonikoppal	Community Health Centre	27	30	3
1307	Kutta	Community Health Centre	28	30	2
1308	Polibetta	Community Health Centre	27	30	3
1309	Siddapura	Community Health Centre	45	50	5
1310	Virajpet	Taluk Hospital	240	240	0
	Kolar District		**1027**	**1274**	**247**
1402	Bagepalli	Taluk Hospital	50	50	0
1403	Bangarapet	Epidemic Disease Hospital	24	24	0
1404	Bangarapet	Taluk Hospital	28	30	2
1405	Bangarapet	KGF Hospital	150	150	0
1406	Bangarapet	Women & Children Hospital	67	100	33
1407	Chikballapur	Sub-Division Hospital	87	100	13
1408	Batlahalli	Community Health Centre	30	30	0

Casualty Ward to be strengthened/provided

SUMMARY OF CONSTRUCTION PROGRAM

Karnataka: List of Hospitals to be Extended/Renovated

Code	Place	Type of Health Facility	Bed Strength		
			Existing	Proposed	Additional.
1409	Chintamani	Taluk Hospital	50	50	0
1410	Gauribidanur	Taluk Hospital	110	110	0
1411	Gudibanda	Taluk Hospital	15	30	15
1401	Kolar #	District Hospital	260	400	140
1412	Malur	Taluk Hospital	32	50	18
1413	Mulbagal	Taluk Hospital	24	50	26
1414	Sidlaghatta	Taluk Hospital	50	50	0
1415	Srinivaspur	Taluk Hospital	50	50	0
	Mandya District		414	720	306
1502	Krishnarajpet	Taluk Hospital	10	30	20
1503	Kalamuddanadoddi	Community Health Centre	6	30	24
1504	Maddur	Taluk Hospital	40	50	10
1505	Malavalli	Taluk Hospital	50	100	50
1501	Mandya #	District Hospital	250	400	150
1506	Nagamangala	Taluk Hospital	12	30	18
1507	Pandavapura	Sub-Division Hospital	40	50	10
1508	Shrirangapattana	Taluk Hospital	6	30	24
	Mysore District	-	1017	1430	413
1604	Chamarajnagar	Taluk Hospital	42	50	8
1605	Chamarajnagar	Taluk Hospital	70	100	30
1606	Gundulpet #	Taluk Hospital	24	50	26
1607	Kabbahalli	Community Health Centre	12	30	18
1608	Heggadadevankote	Taluk Hospital	50	50	0
1609	Hunsur #	Sub-Division Hospital	50	50	0
1610	Kollegal #	Taluk Hospital	107	150	43
1611	Krishnarajanagara	Taluk Hospital	65	100	35
1612	Saligrama	Community Health Centre	10	30	20
1601	Mysore	Cheluvanba Hospital	400	400	0
1602	Mysore	Epidemic Disease Hospital	37	50	13
1603	Mysore	SMT Maternity Hospital	42	50	8
1613	Nanjangud	Sub-Division Hospital	30	100	70
1614	Piriyapatna	Taluk Hospital	30	30	0
1615	Bannur	Community Health Centre	6	30	24
1616	Talakad	Community Health Centre	6	30	24
1617	Tiramakudal-Narsipur	Sub-Division Hospital	30	100	70
1618	Yelandur	Taluk Hospital	6	30	24
	Shimoga District		799	1040	241
1902	Bhadravati	Community Health Centre	50	50	0
1903	Channagiri	Taluk Hospital	50	50	0
1804	Honnali	Taluk Hospital	6	30	24
1805	Hosanagara	Taluk Hospital	30	50	20
1806	Sagar #	Sub-Division Hospital	100	100	0
1807	Shikarpur	Taluk Hospital	28	50	22
1808	Siralkoppa	Community Health Centre	6	30	24
1801	Shimoga #	District Hospital	429	500	71
1809	Sorab	Taluk Hospital	18	50	32
1810	Kannangi	Community Health Centre	24	30	6
1811	Tirthahalli	Taluk Hospital	58	100	42

SUMMARY OF CONSTRUCTION PROGRAM

Karnataka: List of Hospitals to be Extended/Renovated

Code	Place	Type of Health Facility	Bed Strength		
			Existing	Proposed	Additional
	Tumkur District		**593**	**860**	**317**
1902	Chiknayakanhalli	Taluk Hospital	6	50	44
1903	Gubbi	Taluk Hospital	16	30	14
1904	Koratagere	Taluk Hospital	33	50	17
1905	Kunigal	Taluk Hospital	30	50	20
1906	Madhugiri	Sub-Division Hospital	50	100	50
1907	Pavagada	Taluk Hospital	30	50	20
1908	Sira	Taluk Hospital	30	50	20
1909	Tiptur	Sub-Division Hospital	65	100	35
1901	Tumkur #	District Hospital	325	400	75
1910	Turuvekere	Taluk Hospital	8	30	22
	Uttara Kannada District		**549**	**950**	**401**
2002	Ankola	Taluk Hospital	28	50	22
2003	Bhatkal	Taluk Hospital	40	50	10
2004	Dandeli	Community Health Centre	46	50	4
2005	Haliyal	Taluk Hospital	30	30	0
2006	Honavar #	Taluk Hospital	50	50	0
2001	Karwar #	District Hospital	170	400	230
2007	Kumta	Sub-Division Hospital	31	50	19
2008	(Tibetan) Mundgod	Community Health Centre	50	50	0
2009	Mundgod	Taluk Hospital	6	30	24
2010	Siddapur	Taluk Hospital	30	30	0
2011	Sirsi #	Sub-Division Hospital	56	100	44
2012	Supa (Joida)	Taluk Hospital	6	30	24
2013	Yellapur	Taluk Hospital	6	30	24

Casualty Ward to be strengthened/provided

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Amritsar

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
Sub-Divisional Level							
Tarn Taran	50	60	-	-	-	51972 60192	N. Highway Rly. Line 10 Trauma Beds
Patti	50	50	-	-	-	31413 38133	20 km from N. Highway
Ajnala	50	50	-	-	-		N. Highway Rly. Line
Baba Bakala	50	50	-	-	-		5 km from N. Highway
Community Health Centres							
Lopoke	30	10	20	-	20		30 km from N. Highway
Majitha	30	30	-	-	-		N. Highway
Tarsika	30	10	20	-	20		20 km N. Highway
Jandiala (Manawala)	30	30	-	-	-	20512 22528	N. Highway Rly. Line
Ghariala	30	30	-	-	-		30 km from N. Highway
Khem Karan	30	13	17	-	17		Rly. Line
Sur Singhwala	30	30	-	-	-		30 km from N. Highway
Sirhali	30	23	7	-	7		N. Highway
Naushera Pannuan	30	8	22	-	22		N. Highway
Mianwind	30	10	20	-	20		10 km from N. Highway
Total	**500**	**404**	**106**	**-**	**106**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Bathinda

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
Children Hospital Bathinda	100	100	-	-	-	171973 192653	N. Highway/ Rly. Line
District Level							
Civil Hospital Bathinda	100	100	-	-	-		N. Highway/ Rly. Line
Sub-Divisional Level							
Rampura Phul	50	50	-	-	-	36855 39291	N. Highway/ Rly. Line
Talwandi Sabo	30	30	-	20	20		20 km from N. Highway
Area Hospitals							
Civil Hospital Bhucho Mandi	6	6	-	19	19		N. Highway/ Rly. Line
C.H. Maur Mandi	25	25	-	-	-	278932 32914	N. Highway/ Rly. Line
Civil Hospital Raman Mandi	10	10	-	15	15	18402 20484	Rly. Line
Community Health Centres							
Goniana	30	30	-	-	-	11127 12447	N. Highway/ Rly. Line
Sangat	30	30	-	-	-	2849 3059	N. Highway/ Rly. Line
Nathana	30	30	-	-	-		20 Km from N. Highway
Bhagta	30	30	-	-	-		20 Km from N. Highway
Total	**441**	**441**	**-**	**54**	**54**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospituls to be Extended/Renovated

District:Faridkot

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig 1994 & 2 fig 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
Sub-Divisional Hospitals							
Faridkot	50	50	-	-	-	65926 79414	N. Highway Rly. Line
Malout	38	35	3	12	15	63471 75531	N. Highway Rly. Line
Mukatsar	50	44	6	50	56	72922 84964	N. Highway Rly. Line
Moga	100	100	-	-	-	125923 156991	N. Highway Rly. Line
Area Hospitals							
C.H. Jaito	10	10	-	40	40	29956 31876	Rly. Line
C.H. Kotkapura	50	50	-	-	-	68581 79903	N. Highway Rly. Line
C.H.Gidarbaha	50	25	25	-	25	31056 33042	Rly. Line
Community Health Centre							
Marta	30	-	30	-	30		4 km from Rly. Line
Nihal Singhwala	30	8	22	-	22		16 km from Rly. Line
Baghapurana	30	-	30	-	30		N.Highway
Dhudhike	30	20	10	-	10		N. Highway
Daroli Bhai	30	4	26	-	26		5 km from N. Highway
Chak Sherewala	30	15	15	-	15"		16 km from Rly. Line
Badal	30	20	10	-	10		N. Highway
Doda	30	14	16	-	16		N. Highway
Total	**588**	**395**	**193**	**102**	**295**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Fatehgarh Sahib

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
Fatehgarh Sahib	50	50	-	50	50		
Sub-Divisional Level							
C.H. Amloh	25	25	-	25	25	10976 13064	6 km from N. Highway
C.H. Bassi Pathana	25	25	-	-	-	19324 21541	Rly. Line
C.H. Khamano	4	4	-	21	21		N. Highway
Community Health Centre							
CHC Gobindgarh	50	50	-	-	-		N. Highway/ Rly. Line
Total	154	154	-	96	96		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Firozpur

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
C.H. Firozpur	100	112	-	-	-	86417 99641	N. Highway/ Rly. Line Border Area 12 for Trauma
Sub-Divisional Level							
C.H. Fazilka	50	56	-	50	50	64330 75970	N. Highway/ Rly. Line/ 6 beds for Trauma
C.H. Zira	50	28	22	-	22	25270 28114	N. Highway
Nehru Hospital Abohar	106	100	6	-	6	116447 131815	N. Highway/ Rly. Line
Community Health Centres							
Jalalabad	36	36	-	-	-	21759 30613	Rly. Line
Mamdot	30	4	26	-	26		
Firozshah	30	8	22	-	22		
Guruhar Sahai	30	30	-	-	-	11628 13900	Rly. Line
Dhabwala Kalan	30	-	30	-	30		30 km from N. Highway
Situ Gunno	30	30	-	-	-		36 km from N. Highway
Khui Khera	30	4	26	-	26		15 km from N. Highway
Kot Ise Khan	30	8	22	-	22	8601 10425	N. Highway
Total	**552**	**416**	**154**	**50**	**204**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Gurdaspur

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
Civil Hospital Gurdaspur	100	100	-	-	-	60296 70376	N. Highway/ Rly. Line
Sub-Divisional Level							
Civil Hospital Batala	50	50	-	50	50	104847 125982	N. Highway/ Rly. Line
Civil Hospital Pathankot	100	100	-	-	-	134486 145918	N. Highway/ Rly. Line
Community Health Centres							
Qadian	30	25	5	-	5	21381 23901	Rly. Line
Kot Santokh Rai	30	25	5	-	5		25 km from N. Highway
Kahnuwan	30	30	-	-	-		6 km from N. Highway
Kalanaur	30	30	-	-	-		28 km from N. Highway
Fatehgarh Churian	30	12	18	-	18	11743 12943	20 km from N. Highway
Bham	30	30	-	-	-		30 km from N. Highway
Gharota	30	8	22	-	22		3 km from N. Highway
Bungal Badhani	30	30	-	-	-		N. Highway
Narot Jaimal Singh	30	30	-	-	-		20 km from Kathua
Total	**520**	**470**	**50**	**50**	**100**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Hoshiarpur

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
C.H. Hoshiarpur	200	155	45	-	45	137629 164079	N. Highway/ Rly. Station
Sub-Divisional Level							
C.H: Garhshankar	50	50	-	-	-	12666 14334	N. Highway/ Rly. Station
C.H. Balachaur	30	30	-	20	20		N. Highway
C.H. Mukerian	50	50	-	50	50	18855 20775	N. Highway/ Rly. Station
C.H. Dasuya	50	50	-	-	-	19811 22511	N. Highway/ Rly. Station
Community Health Centres							
CHC Bhunga	30	30	-	-	-		N. Highway
Saroya	30	30	-	-	-		20 km from N. Highway
Mand Mandher	30	30	-	-	-		25 km from N. Highway
Budhabar	30	10	20	-	20		12 km from N. Highway
Hajipur	30	26	4	-	4		N. Highway
Tanda	30	20	10	-	10	19894 21922	N. Highway/ Rly. Station
Mahalpur	30	30	-	-	-		
Total	**590**	**511**	**79**	**70**	**149**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District: Jalandhar

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
Jalandhar	400	400	-	-	-	546273 604740	N. Highway/ Rly. Line
Sub-Divisional Level							
C.H. Nawan Shahr	50	64	-	-	-	31184 33344	N. Highway/ 14 beds for Trauma & PP Unit
C.H. Phillaur	50	80	-	-	-	22254 24642	N. Highway/ Rly. Line
C.H. Nakodar	56	68	-	-	-	29873 32435	12 beds including for Trauma & PP Unit/ Rly. Line
Area Hospitals							
C.H. Noor Mahal	25	25	-	-	-	11695 12697	25 km from N. Highway
C.H. Shankar	25	25	-	-	-		18 km from N. Highway
Community Health Centres							
CHC Banga	30	25	5	-	5	19453 22639	N. Highway
Kala Bakra	30	8	22	-	22		N. Highway/ Rly. Line
Kartar pur	30	30	-	-	-	22328 24608	N. Highway/ Rly. Line
Mukandpur	30	8	22	-	22		20 km from N. Highway
Shahkot	30	16	14	-	14	11594 14054	40 km from N. Highway
Bandala	50	50	-	-	-		25 km from N. Highway
Bada Pind	30	8	22	-	22		4 km from N. Highway
Total	**836**	**807**	**85**		**85**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Kapurthala

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
Kapurthala	125	125	-	-	-	70528 79726	N. Highway/ Rly. Line
Sub-Divisional Level							
C.H. Phagwara	50	56	-	50	50	93080 101419	N. Highway/ Rly. Line/ 6 beds for Trauma & CPP unit
C.H. Sultanpur Lodhi	50	20	30	-	30	14239 15109	Rly. Line
Community Health Centres							
CHC KALA sanghia	30	12	18	-	18		12 km from N. Highway
Begowal	30	40	-	-	-		10 beds for Trauma Ward
Panchhat	30	8	22	-	22		18 km from N. Highway
Tibba	30	12	18	-	18		26 km from N. Highway
Total	**345**	**273**	**88**	**50**	**138**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Ludhiana

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
Ludhiana	100	100	-	100	100	1227457 1608035	N. Highway/ Rly. Line
Sub-Divisional Level							
C.H. Samrala	50	50	-	-	-	16719 20031	N. Highway
C.H. Khanna	106	50	56	-	56	79705 93955	N. Highway/ Rly. Line
C.H. Raikot	-	-	-	50	50	22639 25543	N. Highway
C.H. Jagraon	50	30	20	-	20	50312 55736	N. Highway
C.H. Payal	30	8	22	20	42	6120 6540	6 km from N. Highway
Community Health Centres							
CHC Sahnewal	30	8	22	-	22		N. Highway/ Rly. Line
Malaud	30	30	-	-	-		30 km from N. Highway
Pakhowal	30	8	22	-	22		8 km from N. Highway
Manupur	30	30	-	-	-		10 km from N. Highway
Machhiwara	30	30	-	-	-	15345 18597	8 km from N. Highway
Sidhwanbet	30	30	-	-	-		5 km from N. Highway
Gurusar Sudhar	30	8	22	-	22		N. Highway
Total	**546**	**382**	**164**	**170**	**334**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Mansa

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
C.H. Mansa	100	100	-	-	-	60073 68384	Rly. Line / 5 km from N. highway
Sub-Divisional Level							
Budhladha	30	30	-	20	20	19808 21830	Rly. Line
Jhunir at Sardulgarh	30	30	-	20	20		N. Highway
Community Health Centre							
Kiola Kalan	30	30	-	-	-		N. Highway
Total	**190**	**190**	**-**	**40**	**40**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Patiala

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
Mata Kaushalya Hospital Patiala	200	200	-	-	-	274354 307213	N. Highway/ Rly. Line
Sub-Divisional Level							
A.P. Jain Hospital Rajpura	50	50	-	50	50	75612 84132	Proposed addition of 50 beds for Trauma Hospital/ N. Highway/Rly. Line
C.H. Nabha	100	150	-	-	-	57769 63973	Including 32 beds of women hospital 18 for Trauma PP unit/Rly. Line
C.H. Samana	25	25	-	25	25	38573 42799	N. Highway
Community Health Centres							
CHC Model Town Patiala	30	10	20	-	20		
Doodhan Sadhan	30	25	5	-	5		15 km from N. Highway
Kalomajra	30	13	17	-	17		N. Highway
Dera Bassi	30	8	22	-	22	10506 12174	N. Highway
Ghanaur	30	25	5	-	5		13 km from N. Highway
Bhadson	30	8	22	-	22		N. Highway
Badshahpur	30	18	12	-	12		12 km from N. Highway
Shatrana	30	20	10	-	10		N. Highway
Total	**615**	**552**	**113**	**75**	**188**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Rupnagar

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
C.H. Rupnagar	100	100	-	-	-	43600 53860	N. Highway/ Rly. Line
Sub-Divisional Level							
C.H. Anandpur Sahib	30	25	5	20	25	11601 13398	N. Highway/ Rly. Line
C.H. Kharar	30	50	-	20	20	27733 30709	Excess of 20 adjusted as required N. Highway
Area Hospital							
SAS Nagar (Mohali)	50	50	-	150	150	96183 130699	Proposed addtion of 150 beds for Dental Training Units to take work load of PGI at Chandigarh/ N. Highway
Community Health Centres							
Cham Kaur Sahib	30	30	-	-	-		20 km from N. Highway
Nurpur Bedi	30	20	10	-	10		25 km from N. High way
Kurali	30	25	5	-	5	19826 23942	N. Highway/ Rly. Line
Total	**300**	**300**	**20**	**190**	**210**		

SUMMARY OF CONSTRUCTION PROGRAM

Punjab: List of Hospitals to be Extended/Renovated

District:Sangrur

Hospital/ Community Health Centre	Number of Beds					Population of Town (1 fig. 1994 & 2 fig. 2000 AD)	Remarks
	Sanctioned	Functional	To be made functional	Additional Required	Total Required		
District Hospital							
C.H. Sangrur	100	120	-	-	-	61030 69154	N. Highway/ Railway line
Sub-Divisional Level							
C.H. Barnala	100	100	-	-	-	96554 139465	N. Highway/ Railway line
C.H. Malerkotla	100	100	-	-	-	95346 107298	N. Highway/ Railway line
C.H. Sunam	50	50	-	50	50	46781 52061	N. Highway/ Railway line
Community Health Centres							
CHC Dhuri	30	44	-	20	20	42052 50584	N. Highway/ Railway line
Bhadaur	30	7	23	-	23	15356 16334	26 km from N. Highway
Lehragaga	30	10	20	-	20	16922 19442	10 km from N. Highway
Longowal	30	30	-	-	-		10 km from N. Highway
Bhawanigarh	30	14	16	-	16	15707 19043	N. Highway
Dhanaula	30	20	10	-	10	16551 18191	N. Highway
Amargarh	30	8	22		22		N. Highway
Ahmadgarh	30	6	24	-	24	29339 36239	N.Highway
Kauhrian	30	30	-	-	-		15 km from N. Highway
Total	**620**	**539**	**115**	**70**	**185**		

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

Code No.	Name of the District	District Hospitals		Sub-Divisional/ State Genl. Hospitals		Rural Hospitals		
		Existing Beds	Actual Operational Beds	Existing Beds	Actual Operational Beds	Existing Beds	Actual Operational Beds	Population of the District (in Lakhs)
01	Koochbehar	400	400	488	488	30	30	21.58
02	Jalpaiguri	610	610	325	350	265	285	27.89
03	Darjeeling	258	300	696	766	110	110	13.35
04	Uttar Dinajpur	158	350	68	68	70	70	18.57
05	Dakshin Dinajpur	300	300	-	-	55	75	12.71
06	Malda	500	500	-	-	238	238	26.37
07	Murshidabad	616	616	750	750	275	275	47.40
08	Nadia	475	475	1027	1056	240	240	38.52
09	North 24-Parganas	306	500	1642	1782	235	250	72.82
10	South 24-Parganas	600	800	581	706	495	525	57.15
11	Hooghly	500	550	970	970	225	225	43.55
12	Howra	506	800	664	698	175	175	37.30
13	Midnapore	541	541	1046	1240	465	480	83.31
14	Bankura	-	-	255	350	180	180	28.05
15	Purulia	506	506	68	68	150	150	22.25
16	Burdwan	-	-	684	930	270	270	60.51
17	Birbhum	520	520	256	375	170	170	25.56
	TOTAL	6796	7386	9520	10607	3648	3748	636.80

District : Koochbehar (01) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
01101	Koochbehar District Hospital	400	400	100.00	116.02	6.65	19.44
	SUB-DIVISIONAL HOSPITAL						
01201	Mathabhanga	120	120	34.57	82.48	20.72	-
01202	Mekhliganga	120	120	29.60	70.98	16.31	-
01203	Toofanganga	68	68	25.27	70.98	18.24	8.27
01204	Dinhata	180	180	46.64	73.98	30.00	-
	RURAL HOSPITAL						
01301	Haldibari	30	30	10.74	38.95	12.10	-
	TOTAL	918	918	246.82	453.39	104.02	27.71

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : JALPAIGURI (02) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
02101	Jalpaigun Dist. Hospital**	610	610	54.77	155.52	8.26	19.44
SUB-DIVISIONAL/STATE GENERAL HOSPITAL							
02201	Alipurduar**	225	250	61.31	85.98	11.77	-
02202	Birpara	100	100	10.37	81.58	1.15	-
RURAL HOSPITAL							
02301	Falakata *	30	50	8.82	85.95	13.25	8.27
02302	Mal*	100	100	14.34	42.70	15.22	8.27
02303	Mainaguri *	60	60	4.83	39.25	50.76	4.86
02304	Rajgunge	25	25	4.56	54.95	3.68	4.86
02305	Dhupgun	30	30	9.70	30.05	11.10	4.86
02306	Bhauban	20	20	12.87	25.60	8.18	-
	TOTAL	1200	1245	201.57	601.58	136.72	50.56
			- 25				
			= 1220				

District : DARJEELING (03) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
03101	Darjeeling Dist. Hospital **	258	300	50.67	136.17	3.10	19.44
			SUB-DIVISIONAL HOSPITAL				
03201	Kalimpong	370	370	15.46	97.48	8.89	14.58
03202	Kurseong	76	76	37.89	73.73	8.94	-
03203	Siliguri **	250	320	71.80	70.98	7.48	14.58
			RURAL HOSPITAL				
03301	Khariban *	30	30	15.68	41.35	9.00	-
03302	Naksalban *	50	50	19.35	27.45	20.30	-
03303	Bijanban	30	30	15.97	39.60	10.31	-
	TOTAL	1064	1176	226.82	486.76	68.02	63.18
			- 70				
			= 1106				

NOTE : No extra bed space is required for Siliguri S. D. Hospital as there is already space for 70 Nos. beds.

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : UTTAR DINAJPUR (04) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
04101	Raiganje Dist Hospital **	158	350	13.85	185.92	29.56	19.44
	SUB DIVISIONAL HOSPITAL/STATE GENERAL HOSPITAL						
04201	Islampur **	68	68	6.75	92.48	20.42	8.27
	RURAL HOSPITAL						
04301	Kaliagunge	70	70	7..40	64.05	12.70	-
	TOTAL	296	488	28.00	342.45	62.68	27.71

District : DAKSHIN DINAJPUR (05) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
05101	Balurghat Dist Hospital	300	300	10.28	85.82	10.70	19.44
	RURAL HOSPITAL						
05301	Gangarampur *	30	50	25.00	38.35	-	-
05302	Hilli*	25	25	10..60	49.85	2.70	4.86
	TOTAL	355	375	45.88	174.02	13.40	24.30

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : MALDA (06) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
06101	Malda** Dist. Hospital	500	500	113.89	85.22	9.18	19.44
			RURAL HOSPITAL				
06301	Chanchal	68	68	22.87	29.45	8.26	-
06302	Harischandrapur	65	65	7.70	31.60	9.90	-
06303	Manikchak	25	25	6.10	27.70	9.50	-
06304	Bamangola *	25	25	4.27	40.95	6.31	-
06305	Habibpur *	25	25	3.45	35.45	8.83	-
06306	Gazole *	30	30	13.00	26.25	6.45	-
	TOTAL	738	738	171.28	286.62	58.43	19.44

District : Murshidabad (07) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
07101	Berhampur Dist. Hospital	616	616	62.58	101.12	12.70	19.44
			SUB-DIVISIONAL HOSPITAL				
07201	Jangipur	250	250	106.21	76.98	21.32	-
07202	Kandi	250	250	32.00	91.63	7.42	-
07203	Lalbagh**	250	250	17.78	61.48	9.85	-
			RURAL HOSPITAL				
07301	Krishnapur	50	50	24	18.45	4	-
07302	Amtala	50	50	29	3.45	3	-
07303	Khargram	60	60	61	3.45	15	7.02
07304	Sagardighi *	30	30	13	4.45	4	-
07305	Sadikhandiar	25	25	31	28.45	3	-
07306	Islampur	30	30	33	3.45	5	-
07307	Beldanga	30	30	29	4.45	2	-
	TOTAL	1641	1641	438.57	397.36	87.29	26.46

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : NADIA (08) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (number)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
08101	Krishnanagar Dist. Hospital	475	475	82.50	131.82	34.65	19.44
			SUB-DIVISIONAL HOSPITAL				
08201	Ranaghat	171	200	65.28	104.28	33.00	-
08202	Kalyani (J.N.M)	550	550	155.97	82.38	36.00	-
			STATE GENERAL HOSPITAL				
08203	Santipur	131	131	43	23.00	3	-
08204	Chakdah	50	50	39.28	76.28	3.30	-
08205	Nabadwip	125	125	35.36	92.28	12.84	-
			RURAL HOSPITAL				
08301	Bethuadahari	60	60	27	39.45	2	-
08302	Bagula	30	30	13	29.45	2	-
08303	Haringhata	25	25	29	23.45	2	-
08304	Chapra	25	25	29	28.45	3	-
08305	Karimpur	50	50	21	4.45	4	-
08306	Kaliganje	25	25	32	28.45	2	-
08307	Krishnaganje	25	25	29	28.45	3	-
	TOTAL	1742	1771	601.39	692.19	140.79	19.44

District : North 24-Parganas (09) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
09101	Barasat Dist. Hospital	306	500	70.45	185.97	51.80	19.44
			SUB-DIVISIONAL HOSPITAL				
09201	Basirhat	200	250	42.92	85.38	11.20	-
09202	Barrackpur	200	250	24.70	89.93	66.40	-
09203	Bongaon	250	300	31.95	111.48	27.50	3.41
			STATE GENERAL HOSPITAL				
09204	Baranagar	100	100	48	26.98	3	-
09205	Asokenagar	30	30	91	26.98	3	-
09206	Bhatpara	119	119	40.70	68.88	112.00	-
09207	Naihati	131	131	58.00	65.83	26.40	-
09208	Panihati	150	150	61.50	65.83	26.40	-
09209	Sagardutta(Kamarhati)	131	131	99	21.98	2	-
09210	Balaram Seva Mandir	100	100	36	62.48	24.00	-
09211	Salt Lake	100	100	22.37	33.83	26.40	-
09212	Habra	131	131	108	26.98	2	-
			RURAL HOSPITAL				
09301	Bagda	30	30	55	3.45	2	-
09302	Minakhan*	25	25	36	34.45	5	-
09303	Baduria	60	60	24	39.45	7	-
09304	Sandeshkhali*	25	25	61	34.45	2	7.2
09305	Taki	50	50	6	4.45	2	30.15
09306	Serapul	15	30	42	34.45	4	7.02
09307	Madhyamgram	30	30	8	3.45	3	-
	TOTAL	2183	2542	966.59	1026.68	406.90	67.04

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : SOUTH 24-PARGANAS (10) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
10101	M. R. Bangur Dist Hospital	600	600	35.00	108.42	35.00	19.44
			SUB DIVISIONAL HOSPITAL				
10201	Diamond Harbour	125	250	22.30	172.98	35.82	14.58
			STATE GENERAL HOSPITAL				
10202	Vidyasagar	256	256	40.00	81.78	13.40	-
10203	Bijoygarh	100	100	30.00	39.30	26.40	-
10204	Baghajaun	100	100	23.95	35.80	10.00	-
			RURAL HOSPITAL				
10301	Baruipur	50	50	27	18.45	5	-
10302	Sonarpur	25	25	32	18.45	7	-
10303	Canning *	50	50	42	4.45	7	-
10304	Joynagar	25	25	21	28.45	8	-
10305	Sagar	25	30	17	0.10	2	-
10306	Kakdwip	100	100	10	3.45	4	-
10307	Mathurapur	60	60	57	3.45	3	-
10308	Nimpith	30	30	26	18.45	2	-
10309	Muchisa	15	30	4	3.45	4	-
10310	Padmarhat	15	30	29	34.45	2	-
10311	Amtala	50	50	14	4.45	2	-
10312	Raidighi	50	50	31	18.45	3	-
	TOTAL	1676	1836	461.25	594.33	169.62	34.02

District : HAORA (11) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
11101	Howrah Dist Hospital	506	600	16.70	144.92	23.98	19.44
			SUB DIVISIONAL HOSPITAL				
11201	Uluberia	216	250	62.11	92.23	17.26	-
			STATE GENERAL HOSPITAL				
11202	Belur	10	10	13.48	70.98	0.00	-
11203	Gabberia	118	118	55	8.98	-	-
11204	South Haora	10	10	37.83	53.73	15.65	-
11205	Liluah (TLJ)	260	260	101.00	64.28	22.60	-
11206	Udaynarayanpur	50	50	49	8.98	-	
			RURAL HOSPITAL				
11301	Bagnan	40	40	24	18.45	2	-
11302	Jagatballavpur	60	60	20	28.45	4	9.72
11303	Domjur	25	25	20	18.45	4	7.02
11304	Amragun	50	50	27	3.45	4	-
	TOTAL	1345	1473	433.12	512.50	93.49	36.18

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : HOOGHLY (12) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
12101	Chinsurah Dist Hospital	500	550	112.75	115.52	44.40	19.44
			SUB-DIVISIONAL HOSPITAL				
12201	Arambagh	250	250	24.77	94.35	6.70	8.27
12202	Chandannagar	250	250	26.80	66.18	14.50	-
12203	Srirampur	266	266	12.00	80.48	8.27	-
			STATE HOSPITAL				
12204	Uttarpara	204	204	75.00	60.58	37.90	-
			RURAL HOSPITAL				
12301	Chanditala	30	30	24	57.45	3	-
12302	Singur	60	60	26	39.45	8	-
12303	Jangipara	60	60	39	39.45	3	-
12304	Dhaniakhali *	25	25	35	28.45	4	-
12305	Pandua *	25	25	49	28.45	5	-
12306	Khanakul	25	25	66	28.45	5	-
	TOTAL	1695	1745	490.32	640.81	139.77	27.71

District : MIDNAPORE (13) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
13101	Mindapore Dist. Hospital **	541	541	62.00	107.42	7.73	19.44
			SUB-DIVISIONAL HOSPITAL				
13201	Contai	125	125	11.80	68.46	5.47	-
13202	Ghatal	131	150	27.88	76.26	7.28	-
13203	Jhargram **	265	265	33.28	91.88	23.00	-
13204	Tamluk	125	300	12.25	169.93	6.10	-
13205	Haldia	100	100	8.25	57.12	5.00	-
			STATE GENERAL HOSPITAL				
13206	Digha	50	50	36.84	70.98	26.42	-
13207	Kharagpur	250	250	14.00	55.52	8.40	8.27
			RURAL HOSPITAL				
13301	Bhagawanpur	15	30	40	29.45	4	-
13302	Binpur *	25	25	63	29.45	30	7.02
13303	Chandrakona	60	60	33	39.45	15	7.02
13304	Daspur	25	25	47	29.45	15	-
13305	Debra *	25	25	39	23.45	5	-
13306	Egra	60	60	104	39.45	2	-
13307	Garbeta*	60	60	29	39.45	8	-
13308	Hijli	60	60	47	39.45	9	-
13309	Sabang	25	25	30	3.45	4	-
13310	Salboni *	25	25	38	29.45	5	-
13311	Tamapara	25	25	83	29.45	30	7.02
13312	Keshpur *	30	30	49	4.45	16	-
13313	Basulia	30	30	35	3.45	5	-
	TOTAL	2052	2261	843.30	1037.44	237.40	48.77

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : BANKURA (14) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
			SUB DIVISIONAL HOSPITAL				
14201	Bishnupur	230	250	6.40	103.68	4.25	-
14202	Khatra	25	100	36.84	133.28	26.42	-
			RURAL HOSPITAL				
14301	Kotolpur	60	60	4	14.45	2	-
14302	Raipur *	30	30	16	3.45	3	-
14303	Taldangra *	30	30	16	4.45	4	-
14304	Sonamukhi	30	30	3	3.45	2	-
14305	Amarkanan	30	30	3	7.45	4	-
	TOTAL	435	530	85.24	267.21	45.67	-

District : PURULIA (15) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
15101	Purulia Dist Hospital **	506	506	75.71	94 55	14.22	19.44
			STATE GENERAL HOSPITAL				
15201	Raghunathpur **	68	68	15.90	70.98	8.42	-
			RURAL HOSPITAL				
15301	Manbazar *	30	30	30	4.45	3	-
15302	Harmadi	30	30	11	3.45	3	-
15303	Banagarah	30	30	10	4.45	3	-
15304	Hura*	30	30	15	3.45	2	-
15305	Kotsila *	30	30	10	3.45	3	-
	TOTAL	724	724	167.61	184.78	36.64	19.44

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : Burdwan (16) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
			SUB DIVISIONAL HOSPITAL				
16201	Asansol **	205	350	29.35	174.18	28.20	14.58
16202	Durgapur **	164	200	30.00	105.98	29.40	4.86
16203	Kalna	135	200	50.30	158.63	17.80	8.27
16204	Katwa	180	180	53.00	124.98	18.00	8.27
			RURAL HOSPITAL				
16301	Memari	60	60	52	4.45	10	-
16302	Singot	50	50	152	3.45	5	-
16303	Bhatar	50	50	44	4.45	5	-
16304	Srirampur	30	30	8	3.45	5	-
16305	Mankar	30	30	8	4.45	3	-
16306	Ballavpur	50	50	41	3.45	4	-
	TOTAL	954	1200	367.65	587.47	125.40	35.98

District : BIRBHUM (17) — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
17101	Suri Dist Hospital **	520	520	90.40	194.52	35.15	19.44
			SUB DIVISIONAL HOSPITAL				
17201	Rampurhat **	131	250	50	127.56	18.85	8.27
17202	Bolepur **	125	125	82.95	70.38	37.00	-
			RURAL HOSPITAL				
17301	Murarai	50	50	68	4.45	10	-
17302	Sainthia *	60	60	39	18.45	20	-
17303	Labpur *	30	30	15	3.45	15	-
17304	Dubrajpur	30	30	10	4.45	15	-
	TOTAL	946	1065	355.35	423.26	151.00	27.71
			- 129				
			= 936				

NOTE . No extra bed space to required for Rampurhat S.D. Hospital as there is already existing space for 119 beds.

* Rural hospitals located in Integrated Tribal Project areas.

** Rural hospitals with a sizeable tribal population in the catchment area.

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

SUNDARBAN

District : North 24-Parganas — **Cost in Lacs of Rupees**

Code No.	Name of the Hospital	Beds (numbers)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
	B.P.H.C.						
09401	Haroa	15	15	26	36	7	14
09402	Sandeiebil	10	15	26	36	7	14
09403	Ghoshpur	10	15	28	36	11	14
	P.H.C.						
09501	Gopalpur	6	6	21	18	5	7
09502	Kamarganthi	6	6	19	13	19	6
09503	Nimichi	6	6	16	18	6	7
09504	Bhawanipur	10	10	27	18	9	7
09505	Ghola	6	6	18	18	6	7
09506	Barunhat	2	6	14	17	4	6
09507	Sahebkhali	6	6	23	18	6	7
09508	Hinjalgunj	2	6	18	23	5	7
09509	Jogeshganj	2	6	23	23	5	7
09510	Hatgachhi	6	6	10	13	8	6
09511	Nazat	2	10	14	17	8	6
09512	Korakau	6	6	20	13	4	6

District : South 24-Parganas — **Cost in Lacs of Rupees**

Code No.	Name of the Hospital	Beds (numbers		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
10401	Madhabnagar	10	25	28	36	13	21
10402	Gosaba	10	25	29	36	13	21
10403	Basanu	10	25	29	36	13	21
10404	Namkhana Dwarkanagar	15	25	30	36	10	21
10405	Matherdighi	10	10	28	24	9	14
	P.H.C.						
10501	Brajaballavpur	14	14	19	13	14	6
10502	Gadamathura	10	10	17	13	12	6
10503	Indrapur	6	6	11	13	8	6
10504	Chotomollakhali	10	10	16	13	7	6
10505	Dhakuradhanagar	2	6	11	17	7	6
10506	Kalkhali	6	6	10	12	7	6
10507	Bhubaneswari	6	6	25	18	3	7

SUMMARY OF CONSTRUCTION PROGRAM

West Bengal: List of Hospitals to be Extended/Renovated

District : SOUTH 24-PARGANAS — Cost in Lacs of Rupees

Code No.	Name of the Hospital	Beds (number)		Building		Staff Quarters	
		Sanctioned	Actual Operational	Renovation	Extension New Constn.	Renovation	New Constn.
10508	Kantaman	6	6	25	18	3	7
10509	Kanthalberia	4	10	13	17	7	6
10510	Bagdanga Mousumi	2	6	25	23	3	7
10511	Fraserganj	2	6	14	17	7	6
10512	Harendranagar	4	6	13	17	12	6
10513	Ramchandranagar	4	6	20	23	2	7
10514	Kuchitalahat	2	6	25	23	3	7
10515	Nalgora	2	6	25	23	2	7
10516	Ghutiarsharif	4	10	25	22	3	7

SUNDARBAN

Code No.	Name of the District	Type of Hospital	Existing Beds	Additional Bed Space required	Population of The District
09400	North 24-Paganas (Sundarban)	B.P.H.C	35	10	2.71.000
09500	North 24 Parganas (Sundarban)	P.H.C.	60	20	- do -
10400	South 24-Parganas (Sundarban)	B.P.H.C	55	55	21.29.000
10500	South 24-Parganas (Sundarban)	P.HC.	86	34	-do-

PROCUREMENT ARRANGEMENTS
Total Costs in US$ Millions

	Procurement Method					
	International Competitive Bidding	National Competitive Bidding	International Shopping	Local Shopping	Other Methods /a	Total
CIVIL WORKS						
Civil Works	-	134.2 /b (114.1)	-	-	18.0 (15.3)	152.2 (129.4)
GOODS						
Furniture	-	8.5 /c (7.7)	-	2.8 (2.6)	-	11.4 (10.2)
Equipment	54 9 (49 4)	12.7 (11.4)	4.2 (3.8)	12.7 (11.4)	-	84.5 (76.0)
Vehicles	14 3 (12.9)	-	-	0.3 (0.3)	-	14.6 (13.1)
Medical Lab Supplies	-	2.7 (2.4)	0.4 (0.3)	2.3 (2.1)	-	5.4 (4.9)
Medicines	-	22.0 (19.8)	1.5 (1.3)	3.7 (3.3)	-	27.2 (24.5)
Other Supplies	-	7 4 (6.7)	-	11.1 (10.0)	-	18.5 (16.7)
MIS/IEC Materials	-	5 2 (4.7)	-	1.7 (1.6)	-	6.9 (6.2)
CONSULTANCIES						
Project Preparation & Implementation (incl Training, Workshops, Fellowships)	-	-	-	-	10.7 (10.7)	10.7 (10.7)
Institutional Development (includes Local Consultants, Studies, Professional Services Fees, NGO Fees)	-	-	-	-	18.1 (16.3)	18.1 (16.3)
MISCELLANEOUS						
Salaries of Additional Staff	-	-	-	-	39.3 (25.5)	39.3 (25.5)
Operational Expenditures	-	-	-	17.8 (11.1)	-	17.8 (11.1)
Building Maintenance	-	-	-	-	3.1 (1.7)	3.1 (1.7)
Equipment Maintenance	-	-	-	-	7.0 (3.8)	7.0 (3.8)
Total	69 2 (62.3)	192.7 (166.8)	6.1 (5.5)	52.5 (42.3)	96.2 (73.3)	416.7 (350.0)

Notes:

/a "Other" methods include Force Account, Direct Contracting and Consulting Services

/b Figures in parenthesis are the repective amounts financed by IDA

/c Figures may not appear to add exactly due to rounding

IMPLEMENTATION PLAN

Table 1: Project Implementation Plan

1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
• Constitute PGB & Steering Committee • Set-up Central Planning Cell & Engineering wing • Set-up District Health Committees • Recruit key project staff • Engage design consultants to prepare bid documents for civil works • Engage MIS consultants • Prepare bid documents for equipment, etc. • Set-up working groups for developing clinical protocols & training modules • Conduct workshops on Referral System & QA • Conduct workshops & prepare detailed plans for surveillance scheme • Develop plans for providing health care to SC/ST & women • Procure equipment, furniture, vehicles, etc. for core staff	• Recruit project management staff • Recruit hospital staff to bridge existing gaps • Recruit maintenance .engineers • Invite tenders and award contract for civil works for first year construction program • Assign design works for second year construction program • Float tenders for equipping hospitals to be renovated/expanded in first year • Float tenders for equipment maintenance workshop • Develop training programs for equipment maintenance • Conduct training courses for equipment maintenance engineers • Implement Surveillance Scheme at headquarters and in selected districts • Implement referral system & QA in selected districts • Conduct orientation programs for Gram Panchayat members to involve them in health care programs • Procure equipment and implement MIS on experimental basis • Start training courses for medical officers and paramedical staff	• Recruit hospital staff to fill posts in hospitals renovated/expanded in the first year • Recruit & train equipment maintenance technicians • Invite tenders and award contracts for civil works for second year construction program • Assign design work for third year construction program • Float tenders for equipping hospitals to be renovated/expanded in second year • Review implementation of referral system, QA, and health care schemes for SC/ST & women • Review MIS • Procure & install equipment in hospitals renovated in the first year • Continue training of medical & paramedical staff • Evaluate and extend surveillance scheme to other districts	• Recruit hospital staff to fill posts in hospitals renovated/expanded in the second year • Recruit and train equipment maintenance technicians • Invite tenders and award contract for civil works for third year construction program • Assign design work for fourth year construction program • Float tenders for equipping hospitals to be renovated/expanded in third year • Extend implementation of providing health care to SC/ST & women in selected districts • Extend implementation of referral system & QA in selected districts • Conduct orientation programs for Gram Panchayat members to involve them in health care programs • Extend MIS to additional hospitals • Continue training of medical and paramedical staff	• Recruit hospital staff to fill posts in hospitals renovated/expanded in the third year • Recruit & train equipment maintenance technicians • Invite tenders and award contract for civil works for fourth year construction program • Float tenders for equipping hospitals to be renovated/expanded in fourth year • Extend implementation of providing health care to SC/ST & women in selected districts • Extend implementation of referral system & QA in remaining districts • Conduct orientation programs to Gram Panchayat members to involve them in health care programs • Extend MIS to remaining hospitals • Continue training of medical and paramedical staff	• Recruit hospital staff to fill posts in hospitals renovated/expanded in the fourth year • Recruit & train equipment maintenance technicians • Float tenders for equipping hospitals to be renovated/expanded in fourth year • Extend implementation of providing health care to SC/ST & women in selected districts • Continue training of medical and paramedical staff

Table 2 West Bengal: Civil Works Implementation Plan

Activity	Responsibility	Starting Date	Completion Date
PHASE - I (42 Hospitals)			
Survey of Existing Hospitals	Private Firms	July 95	October 95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	October 95	November 95
Soil tests[1/]	Engineering College/ Private Firms	October 95	December 95
Recruitment of Consultants[2/]	DOH[3/]	October 95	December 95
Preliminary Designs	Private Firms	January 96	March 96
Final Drawings	Private Firms	February '96	June '96
Site Development Plans	Private Firms	April '96	July '96
Completion of Bid Documents	DOH, West Bengal	May '96	July '96
Floating of Bids	DOH, West Bengal	July '96	October '96
Evaluation of Bids	DOH, West Bengal	September '96	December '96
Contract Signing	DOH, West Bengal	November '96	February '97
Construction Period	Contractors	January '97	April '99
Guarantee Period	Contractors	January '99	April '2000
PHASE - II (54 Hospitals)			
Survey of Existing Hospital	Private Firms	July 95	October 95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	December '95	January '96
Soil tests	Engineering College/Private Firms	January '96	March '96
Preliminary Designs	Private Firms	February '96	April '96
Final Drawings	Private Firms	April '96	September '96
Site Development Plans	Private Firms	July '96	October '96
Completion of Bid Documents	DOH, West Bengal	August '96	November '96
Floating of Bids	DOH, West Bengal	November '96	March '97
Evaluation of Bids	DOH, West Bengal	January '97	May '97
Contract Signing	DOH, West Bengal	April '97	July '97
Construction Period	Contractors	June '97	September '99
Guarantee Period	Contractors	June '99	September '2000

[1/] Soil tests will be conducted on vacant lots and in coordination with preliminary layout of new extensions.
[2/] Recruitment of consultants to follow Bank Guidelines. During the second half of 1996, additional batch of consultants will be recruited for the preparation of designs and drawings pertaining to Phases III & V.
[3/] DOH = Department of Health

N.B.: Details regarding the management and maintenance systems for equipment and buildings in each state at first referral facilities are attached to the Minutes of Negotiation as Attachment 2.

Table 2 *(continued)*

Activity	Responsibility	Starting date	Completion Date
PHASE - III (68 Hospitals)			
Survey of Existing Hospitals	Private Firms	July '95	October '95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	April '96	July '96
Soil tests	Engineering College/ Private Firms	April '96	July '96
Recruitment of Consultants	DOH	September '96	November '96
Preliminary Designs	Private Firms	January '97	April '97
Final Drawings	Private Firms	March '97	August '97
Site Development Plans	Private Firms	June '97	September '97
Completion of Bid Documents	DOH, West Bengal	August '97	November '97
Floating of Bids	DOH, West Bengal	October '97	January '98
Evaluation of Bids	DOH, West Bengal	December '97	March '98
Contract Signing	DOH, West Bengal	February '98	May '98
Construction Period	Contractors	April '98	September '2000
Guarantee Period	Contractors	April '2000	September '2001
PHASE - IV (42 Hospitals)			
Survey of Existing Hospital	Private Firms	July '95	October '95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	August '96	November '96
Soil tests	Engineering College/Private Firms	August '96	November '96
Preliminary Designs	Private Firms	May '97	October '97
Final Drawings	Private Firms	August '97	January, '98
Site Development Plans	Private Firms	November '97	February '98
Completion of Bid Documents	DOH, West Bengal	January '98	April '98
Floating of Bids	DOH, West Bengal	March '98	July '98
Evaluation of Bids	DOH, West Bengal	May '98	September '98
Contract Signing	DOH, West Bengal	August '98	December '98
Construction Period	Contractors	October '98	March '2000
Guarantee Period	Contractors	October '2000	March '2002

Table 3 Punjab: Civil Works Implementation Plan

Activity	Responsibility	Starting Date	Completion Date
PHASE - I (16 Hospitals)			
Survey of Existing Hospitals	Private Firms	July 95	October 95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	October 95	November 95
Soil tests[1/]	Private Firms	October 95	December 95
Recruitment of Consultants[2/]	PHSC[3/]	October 95	December 95
Preliminary Designs	Private Firms	January 96	March 96
Final Drawings	Private Firms	February '96	June '96
Site Development Plans	Private Firms	April '96	July '96
Completion of Bid Documents	PHSC, Punjab	May '96	July '96
Floating of Bids	PHSC, Punjab	July '96	October '96
Evaluation of Bids	PHSC, Punjab	September '96	December '96
Contract Signing	PHSC, Punjab	November '96	February '97
Construction Period	Contractors	January '97	April '99
Guarantee Period	Contractors	January '99	April '2000
PHASE - II (38 Hospitals)			
Survey of Existing Hospital	Private Firms	July 95	October 95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	December '95	January '96
Soil tests	Private Firms	January '96	March '96
Preliminary Designs	Private Firms	February '96	April '96
Final Drawings	Private Firms	April '96	September '96
Site Development Plans	Private Firms	July '96	October '96
Completion of Bid Documents	PHSC, Punjab	August '96	November '96
Floating of Bids	PHSC, Punjab	November '96	March '97
Evaluation of Bids	PHSC, Punjab	January '97	May '97
Contract Signing	PHSC, Punjab	April '97	July '97
Construction Period	Contractors	June '97	September '99
Guarantee Period	Contractors	June '99	September '2000

[1/] Soil tests will be conducted on vacant lots and in coordination with preliminary layout of new extensions.
[2/] Recruitment of consultants to follow Bank Guidelines. During the second half of 1996, additional batch of consultants will be recruited for the preparation of designs and drawings pertaining to Phases III & V.
[3/] PHSC = Department of Health System Corporation

Table 3 *(continued)*

Activity	Responsibility	Starting date	Completion Date
PHASE - III (60 Hospitals)			
Survey of Existing Hospitals	Private Firms	July '95	October '95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	April '96	July '96
Soil tests	Private Firms	April '96	July '96
Recruitment of Consultants	PHSC	September '96	November '96
Preliminary Designs	Private Firms	January '97	April '97
Final Drawings	Private Firms	March '97	August '97
Site Development Plans	Private Firms	June '97	September '97
Completion of Bid Documents	PHSC, Punjab	August '97	November '97
Floating of Bids	PHSC, Punjab	October '97	January '98
Evaluation of Bids	PHSC, Punjab	December '97	March '98
Contract Signing	PHSC, Punjab	February '98	May '98
Construction Period	Contractors	April '98	September '2000
Guarantee Period	Contractors	April '2000	September '2001
PHASE - IV (36 Hospitals)			
Survey of Existing Hospital	Private Firms	July '95	October '95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	August '96	November '96
Soil tests	Private Firms	August '96	November '96
Preliminary Designs	Private Firms	May '97	October '97
Final Drawings	Private Firms	August '97	January, '98
Site Development Plans	Private Firms	November '97	February '98
Completion of Bid Documents	PHSC, Punjab	January '98	April '98
Floating of Bids	PHSC, Punjab	March '98	July '98
Evaluation of Bids	PHSC, Punjab	May '98	September '98
Contract Signing	PHSC, Punjab	August '98	December '98
Construction Period	Contractors	October '98	March '2000
Guarantee Period	Contractors	October '2000	March '2002

Table 4 Karnataka: Civil Works Implementation Plan

Activity	Responsibility	Starting Date	Completion Date
PHASE - I (45 Hospitals)			
Survey of Existing Hospitals	Private Firms	July 95	October 95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	October 95	November 95
Soil tests[1/]	Private Firms	October 95	December 95
Recruitment of Consultants[2/]	DOH[3/]	October 95	December 95
Preliminary Designs	Private Firms	January 96	March 96
Final Drawings	Private Firms	February '96	June '96
Site Development Plans	Private Firms	April '96	July '96
Completion of Bid Documents	DOH, Karnataka	May '96	July '96
Floating of Bids	DOH, Karnataka	July '96	October '96
Evaluation of Bids	DOH, Karnataka	September '96	December '96
Contract Signing	DOH, Karnataka	November '96	February '97
Construction Period	Contractors	January '97	April '99
Guarantee Period	Contractors	January '99	April '2000
PHASE - II (53 Hospitals)			
Survey of Existing Hospital	Private Firms	July 95	October 95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	December '95	January '96
Soil tests	Private Firms	January '96	March '96
Preliminary Designs	Private Firms	February '96	April '96
Final Drawings	Private Firms	April '96	September '96
Site Development Plans	Private Firms	July '96	October '96
Completion of Bid Documents	DOH, Karnataka	August '96	November '96
Floating of Bids	DOH, Karnataka	November '96	March '97
Evaluation of Bids	DOH, Karnataka	January '97	May '97
Contract Signing	DOH, Karnataka	April '97	July '97
Construction Period	Contractors	June '97	September '99
Guarantee Period	Contractors	June '99	September '2000

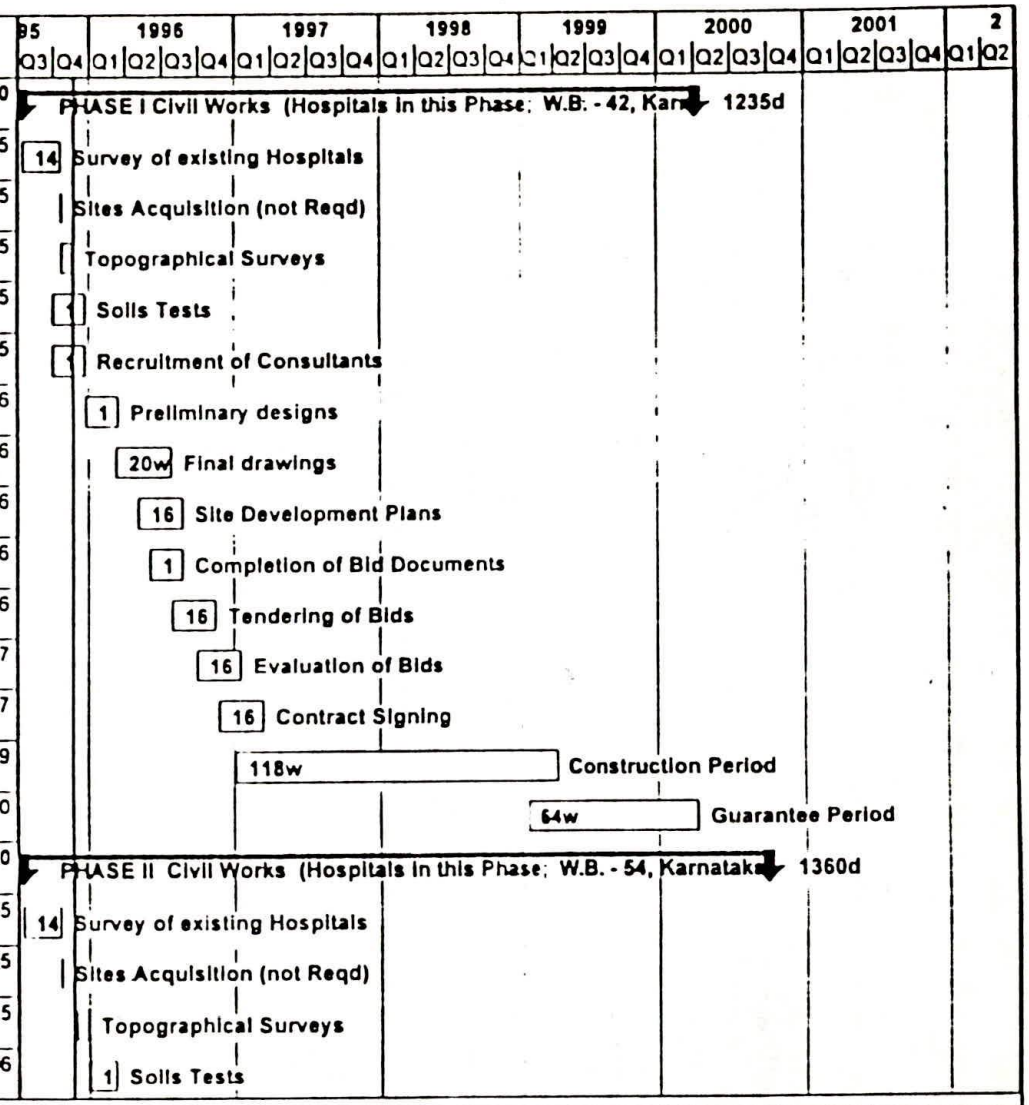
[1/] Soil tests will be conducted on vacant lots and in coordination with preliminary layout of new extensions.
[2/] Recruitment of consultants to follow Bank Guidelines. During the second half of 1996, additional batch of consultants will be recruited for the preparation of designs and drawings pertaining to Phases III & V.
[3/] DOH = Department of Health

Table 4 *(continued)*

Activity	Responsibility	Starting date	Completion Date
PHASE - III (61 Hospitals)			
Survey of Existing Hospitals	Private Firms	July '95	October '95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	April '96	July '96
Soil tests	Private Firms	April '96	July '96
Recruitment of Consultants	DOH	September '96	November '96
Preliminary Designs	Private Firms	January '97	April '97
Final Drawings	Private Firms	March '97	August '97
Site Development Plans	Private Firms	June '97	September '97
Completion of Bid Documents	DOH, Karnataka	August '97	November '97
Floating of Bids	DOH, Karnataka	October '97	January '98
Evaluation of Bids	DOH, Karnataka	December '97	March '98
Contract Signing	DOH, Karnataka	February '98	May '98
Construction Period	Contractors	April '98	September '2000
Guarantee Period	Contractors	April '2000	September '2001
PHASE - IV (42 Hospitals)			
Survey of Existing Hospital	Private Firms	July '95	October '95
Sites Acquisition	Not required	-	-
Topographical Surveys	Private Firms	August '96	November '96
Soil tests	Private Firms	August '96	November '96
Preliminary Designs	Private Firms	May '97	October '97
Final Drawings	Private Firms	August '97	January, '98
Site Development Plans	Private Firms	November '97	February '98
Completion of Bid Documents	DOH, Karnataka	January '98	April '98
Floating of Bids	DOH, Karnataka	March '98	July '98
Evaluation of Bids	DOH, Karnataka	May '98	September '98
Contract Signing	DOH, Karnataka	August '98	December '98
Construction Period	Contractors	October '98	March '2000
Guarantee Period	Contractors	October '2000	March '2002

Table 5: State Health Systems II Civil Works Implementation Plan

ID	Task Name	Duration	Start	Finish
1	PHASE I Civil Works (Hos	1235d	7/17/95	4/7/00
2	Survey of existing Hospita	14w	7/17/95	10/20/95
3	Sites Acquisition (not Req	1d	10/23/95	10/23/95
4	Topographical Surveys	4w	10/24/95	11/20/95
5	Soils Tests	12w	10/2/95	12/22/95
6	Recruitment of Consultant	12w	10/2/95	12/22/95
7	Preliminary designs	12w	12/25/95	3/15/96
8	Final drawings	20w	3/11/96	7/26/96
9	Site Development Plans	16w	5/6/96	8/23/96
10	Completion of Bid Docum	12w	6/3/96	8/23/96
11	Tendering of Bids	16w	7/29/96	11/15/96
12	Evaluation of Bids	16w	9/30/96	1/17/97
13	Contract Signing	16w	11/25/96	3/14/97
14	Construction Period	118w	1/6/97	4/9/99
15	Guarantee Period	64w	1/18/99	4/7/00
16	PHASE II Civil Works (Ho	1360d	7/17/95	9/29/00
17	Survey of existing Hospita	14w	7/17/95	10/20/95
18	Sites Acquisition (not Req	1d	10/23/95	10/23/95
19	Topographical Surveys	4w	12/1/95	12/28/95
20	Soils Tests	10w	1/1/96	3/8/96

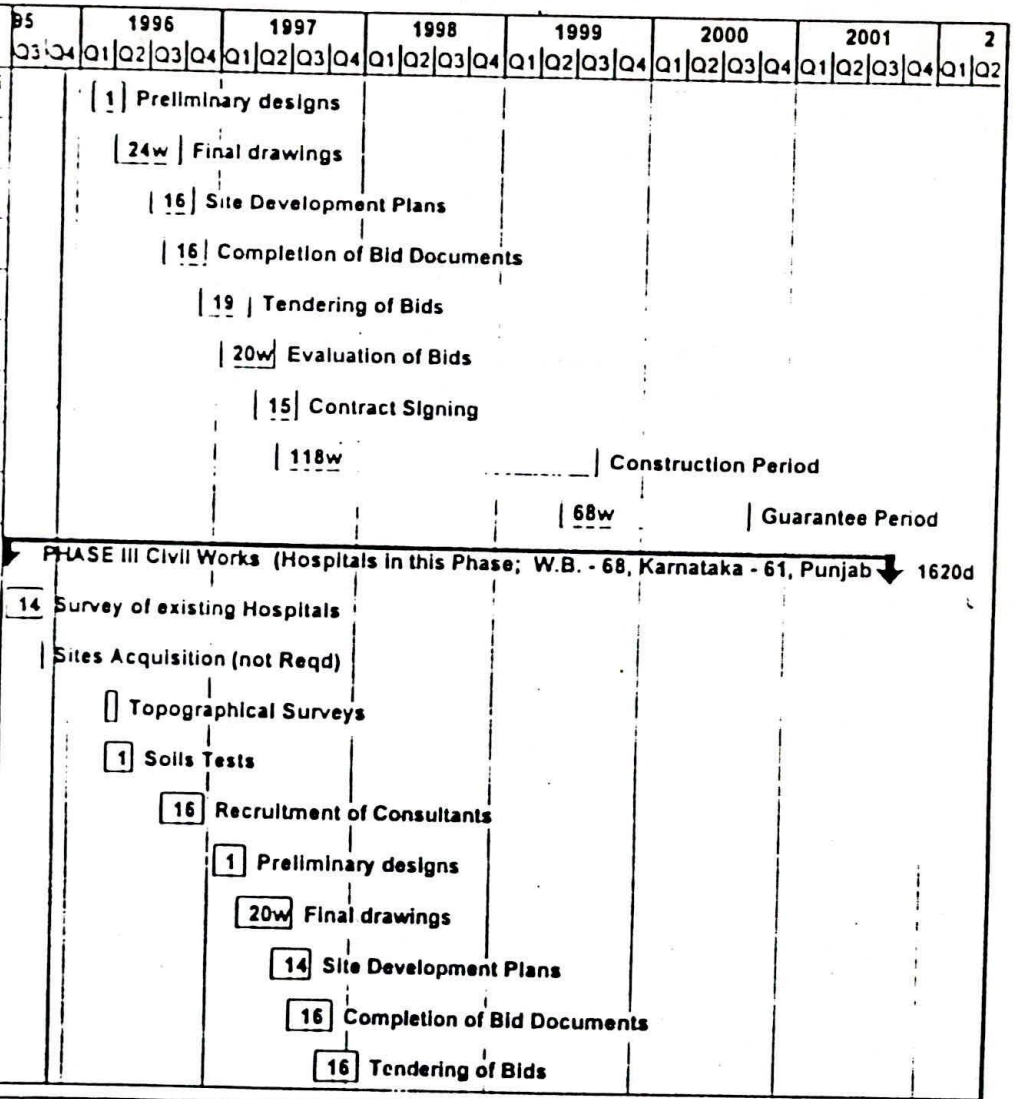


INDIA: State Health Systems II
CIVIL WORKS IMPLEMENTATION PLAN
11/21/95

Task
Critical Task
Progress
Summary

Table 5: State Health Systems II Civil Works Implementation Plan *(continued)*

ID	Task Name	Duration	Start	Finish
21	Preliminary designs	12w	2/5/96	4/26/96
22	Final drawings	24w	4/8/96	9/20/96
23	Site Development Plans	16w	7/8/96	10/25/96
24	Completion of Bid Docum	16w	8/12/96	11/29/96
25	Tendering of Bids	19w	11/18/96	3/28/97
26	Evaluation of Bids	20w	1/13/97	5/30/97
27	Contract Signing	15w	4/14/97	7/25/97
28	Construction Period	118w	6/9/97	5/10/99
29	Guarantee Period	68w	6/14/99	5/29/00
30	PHASE III Civil Works (Ho	1620d	7/17/95	8/28/01
31	Survey of existing Hospita	14w	7/17/95	10/20/95
32	Sites Acquisition (not Req	1d	10/23/95	10/23/95
33	Topographical Surveys	4w	4/10/96	5/7/96
34	Soils Tests	10w	4/10/96	6/18/96
35	Recruitment of Consultant	16w	9/2/96	12/20/96
36	Preliminary designs	12w	1/20/97	4/11/97
37	Final drawings	20w	3/24/97	8/8/97
38	Site Development Plans	14w	6/23/97	9/26/97
39	Completion of Bid Docum	16w	8/4/97	11/21/97
40	Tendering of Bids	16w	10/13/97	1/30/98

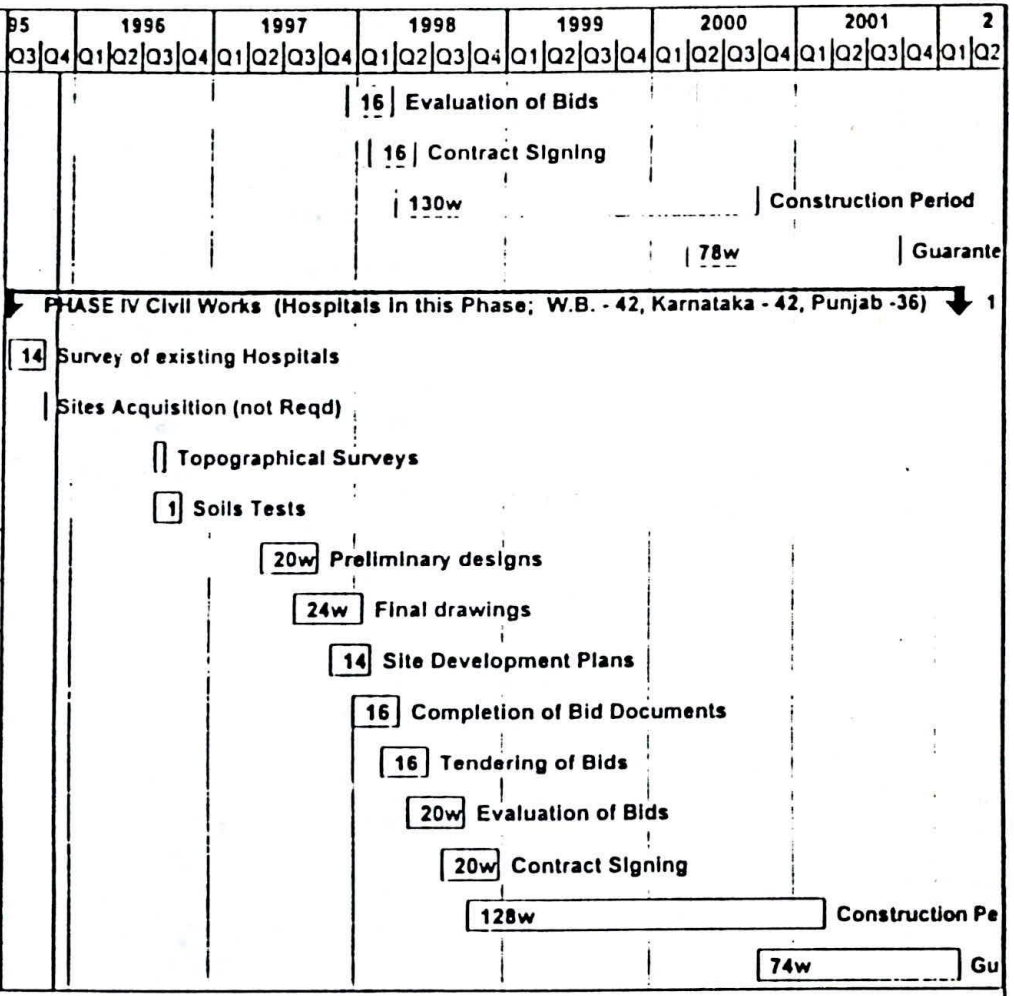


INDIA: State Health Systems II
CIVIL WORKS IMPLEMENTATION PLAN
11/21/95

Task
Critical Task
Progress
Summary

Table 5: State Health Systems II Civil Works Implementation Plan *(continued)*

ID	Task Name	Duration	Start	Finish
41	Evaluation of Bids	16w	12/8/97	3/27/98
42	Contract Signing	16w	2/2/98	5/22/98
43	Construction Period	130w	4/6/98	9/29/00
44	Guarantee Period	78w	4/3/00	9/28/01
45	PHASE IV Civil Works (Ho	1733d	7/17/95	3/6/02
46	Survey of existing Hospita	14w	7/17/95	10/20/95
47	Sites Acquisition (not Req	1d	10/23/95	10/23/95
48	Topographical Surveys	4w	8/12/96	9/6/96
49	Soils Tests	10w	8/12/96	10/18/96
50	Preliminary designs	20w	5/15/97	10/1/97
51	Final drawings	24w	8/7/97	1/21/98
52	Site Development Plans	14w	11/6/97	2/11/98
53	Completion of Bid Docum	16w	1/1/98	4/22/98
54	Tendering of Bids	16w	3/12/98	7/1/98
55	Evaluation of Bids	20w	5/14/98	9/30/98
56	Contract Signing	20w	8/6/98	12/23/98
57	Construction Period	128w	10/8/98	3/21/01
58	Guarantee Period	74w	10/5/00	3/6/02



INDIA: State Health Systems II
CIVIL WORKS IMPLEMENTATION PLAN
11/21/95

Task
Critical Task
Progress
Summary

Table 6: Recruitment Plan

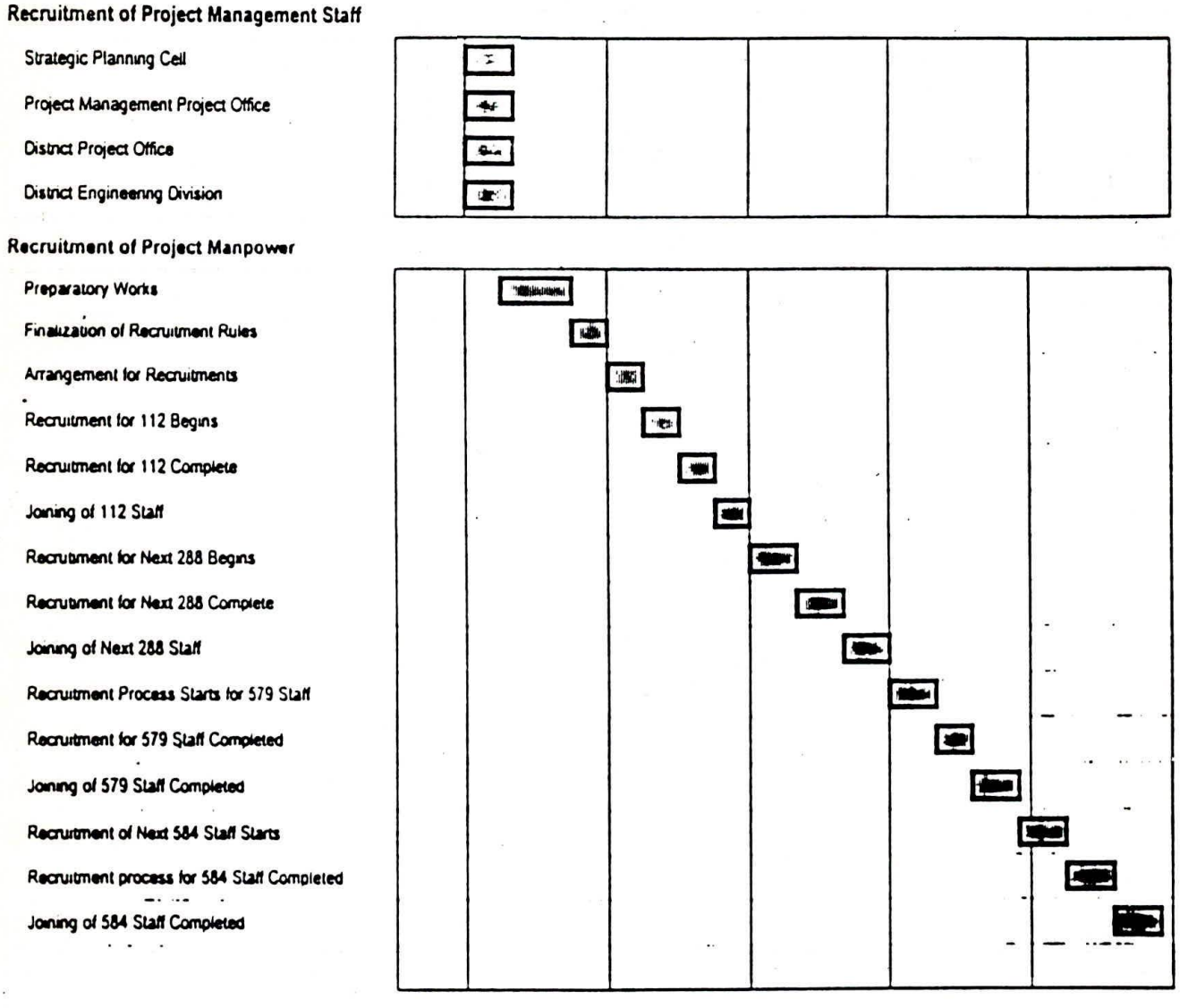
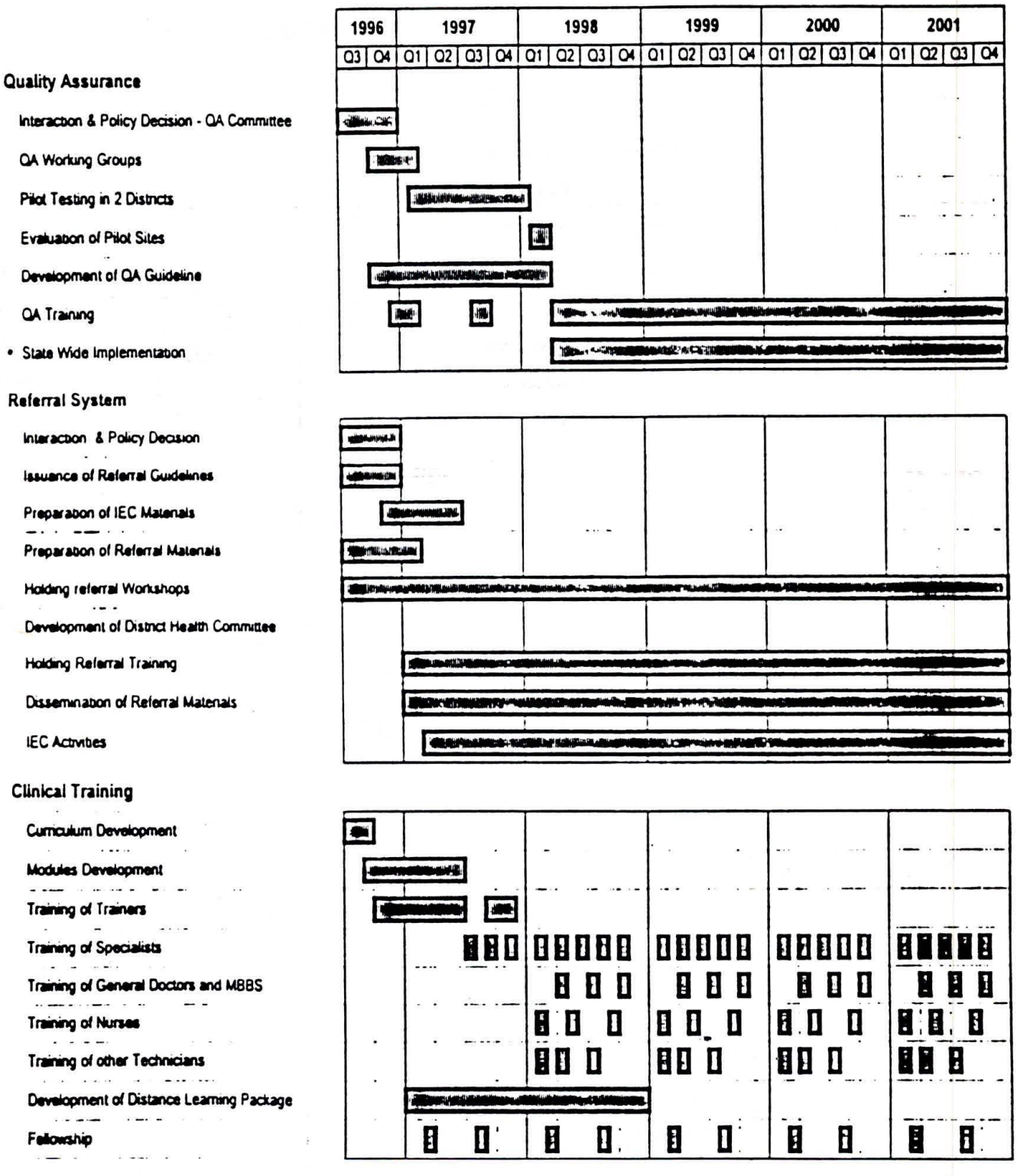


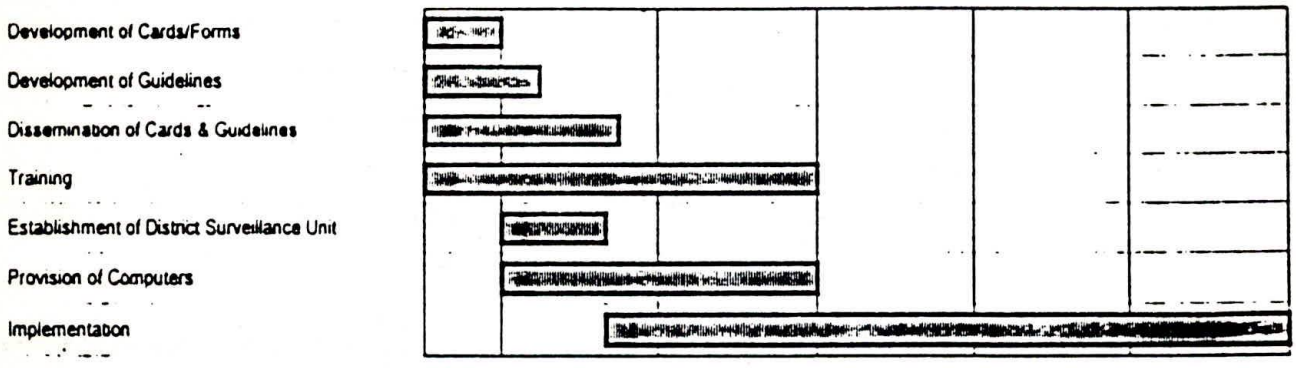
Table 7: Implementation Plan for Software Activities[1]



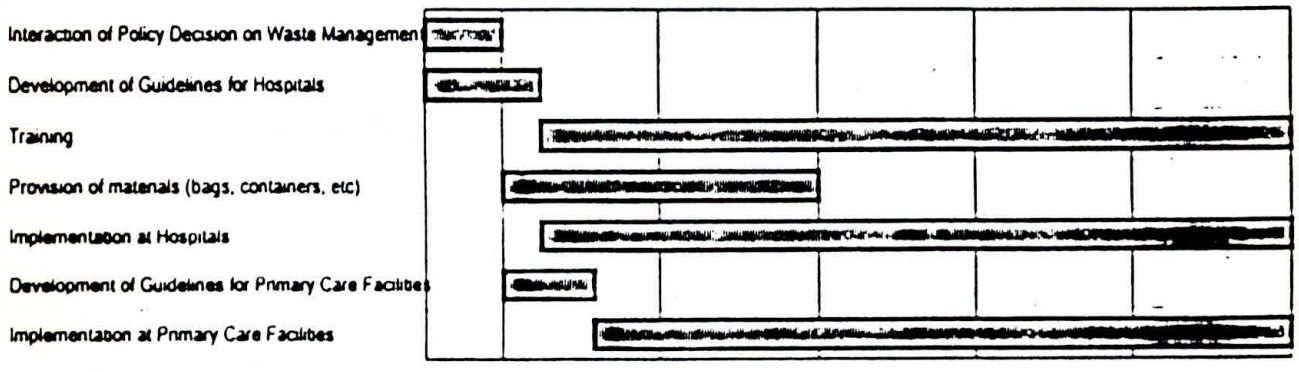
[1] Agreed service, equipment and staffing norms for first referral facilities were developed at workshops held in each state. They are attached to the Minutes of Negotiation as Attachments 1 and 4.

Table 7: Implementation Plan for Software Activities *(continued)*

Surveillance & HMIS



Medical Waste Management



PERFORMANCE INDICATORS[1]

Table 1: Physical Completion Targets
Hospital Upgradation

Hospital Upgradation	Bids Advertised		%	Bids Evaluated		%	Contracts Signed		%	Construction Start		%	Physical Completion		%	No. of Beds		
	Planned	Actual		Planned	Actual		Planned	Actual		Planned	Actual		Planned	Actual		Baseline	Planned	Actual
Phase I District Subdivisional Community/ Rural																		
Phase II District Subdivisional Community/ Rural																		
Phase III District Subdivisional Community/ Rural																		
Phase IV District Subdivisional Community/ Rural																		

[1] Baseline data from each state are available on file.

Table 2: Physical Completion Targets
Staff Quarters

Staff Quarters* (new & upgraded)	Bids Advertized		%	Bids Evaluated		%	Contracts Signed		%	Construction Start		%	Physical Completion		%	No. of Staff Quarters		
	Planned	Actual		Planned	Actual		Planned	Actual		Planned	Actual		Planned	Actual		Baseline	Planned	Actual
Phase I																		
Type I																		
Type II																		
Type III																		
Type IV																		
Type V																		
Phase II																		
Type I																		
Type II																		
Type III																		
Type IV																		
Type V																		
Phase III																		
Type I																		
Type II																		
Type III																		
Type IV																		
Type V																		
Phase IV																		
Type I																		
Type II																		
Type III																		
Type IV																		
Type V																		

* Karnataka has three types of staff quarters; West Bengal has five.

Table 3: Hospital Activity Indicators

	Baseline	Previous	Current	Percent Change Current/Previous	Percent Change Current/Baseline
1. Bed Capacity					
2. Cumulative inpatient days during past 6 months					
3. Admissions during past 6 months					
4. Outpatient consultations (new and repeat)					
5. Turnover rate					
6. Bed occupancy rate					
7. Average length of stay					
8. Outpatient per bed day					

Table 4: Hospital Efficiency Indicators

	Baseline	Previous	Current	Percent Change Current/Previous	Percent Change Current/Baseline
Clinical Services					
# of major surgeries					
% of major surgeries to admission					
# of deliveries					
% of deliveries to admission					
Emergency Service Index					
Emergency OP ratio[1]					
Emergency entry ratio[2]					
Diagnostic Services					
# of imaging and electro medical tests					
% of imaging and electro medical test to admission					
# of laboratory test					
% of laboratory test to admission					
Non Clinical Services					
# of post-mortems					
% of post-mortems to admission					
% of post-operative case fatality					
% of infection acquired in the hospital (nosocomial infection)					
# of referred cases received					
# of cases referred to other hospitals					

[1] Emergency outpatient ratio is the ratio of emergency outpatients to total outpatients.

[2] Emergency entry ratio is the ratio of admissions during emergency hours to total admissions.

Table 5: Quality, Access, and Effectiveness Indicators

	Baseline	Previous	Current
Inpatient waiting time (min) Outpatient waiting time (min) Patient satisfaction with doctors and other medical staff rating (scale of 1-7) Patient satisfaction with services offered rating (scale of 1-7) Patient satisfaction with facilities available rating (scale of 1-7) Hospital cleanliness rating (scale of 1-7)			
Quality Assurance Program # of disciplines that have implemented QA in DH # of indicators implemented % of investigations completed % of remedial actions reported			
IEC % of $ spent against targets for materials % of awareness among target groups of first referral services % awareness among tribal population of services provided % awareness of services available amongst target groups in Sundarbans area % awareness of services available amongst SC/ST populations in Karnataka % awareness of user charges among outpatients % awareness of user charges among inpatients % awareness among doctors of referral system: PHC to community hospitals Community hospitals to sub-divisional hospitals Sub-divisional hospitals to district hospitals			

Table 5 *(continued)*

	Baseline	Previous	Current
MIS % of institutions where standardized system is introduced # of supervisory reports based on MIS data received from hospitals			
Cost Recovery # of beds delineated as paying beds (only DH & SDH) % of beds delineated as paying beds to total beds at facility (only DH & SDH) Amount of money recovered from paying beds Amount of money recovered from other charges Amount of money collected from outpatient fee Amount of money received from district level as a share of collected amount			

Table 6: Quality, Access and Effectiveness Indicators
Selective Few Instruments
Furniture, Equipment and Other Appliances

	Type of Hospital	Type of Equipment, Furniture and Other Appliances	No. Proposed to be Installed	No. Purchased/ Supplied	No. Installed & Operationalized	% Provided as per Norm
	(1)	(2)	(3)	(4)	(5)	(6)
DH		i) ii) iii)				
SDH		i) ii) iii)				
CH/RH		i) ii) iii)				
PHC/BPHC		i) ii) iii)				

Table 7: Quality, Access and Effectiveness Indicators
Availability of Drugs

Type of Drug	No. of Institutions with Adequate Quantities of Drugs as per Requisition				Total
(1)	(2)				(3)
	Below 50% of Requisitions:				
	DH	SDH	CH/RH	PHC/BPHC	
1. Essential Drugs					
2. Emergency Drugs					
3. Others					
	50-75% of Requisitions:				
	DH	SDH	CH/RH	PHC/BPHC	
1. Essential Drugs					
2. Emergency Drugs					
3. Others					
	Above 75% of Requisition:				
	DH	SDH	CH/RH	PHC/BPHC	
1. Essential Drugs					
2. Emergency Drugs					
3. Others					

Table 8: Quality, Access and Effectiveness Indicators
Availability of Staff (DH, SDH and CH/RH)

Category of Staff (1)	No. Sanctioned Under the Project (2)	No. Appointed (3)	% Provided as per Norm
1. Doctors			
2. Nurses			
3. Group - C			
4. Group - D			

Table 9: Quality, Access and Effectiveness Indicators
Maintenance of Equipment, Furniture, OT (DH, SDH and CH/RH)

Type of Equipment, Furniture, OT & Other Accessories	Number Installed	No. in Working Condition	% Not Functioning
1.			
2.			
3.			
4.			

Table 10: Quality, Access and Effectiveness Indicators
Training

Type of Training Course (1)	No. of Training Course Sanctioned (2)	No. of Courses Held During the Quarter (3)	No. of Courses Held Since Inception (4)	No. of Persons Proposed to be Trained During the Quarter (5)	No. of Persons Proposed to be Trained Since Inception (6)
1. Clinical					
2. Management					
3. IEC					
4. MIES					
5. Maintenance					
6. Referral					
7. Waste Management					

No. of Targeted Persons Trained During the Quarter (7)	No. of Targeted Persons Trained Since Inception (8)	Percentage of Targeted Workers Trained Since Inception (9)

SUPERVISION PLAN

General Routine Supervision

1. The core of the routine supervision process will be the six-monthly Bank supervision missions. An indispensable basis for this will be the six-monthly progress report to be submitted by the Health Systems Corporation in Punjab and the Department of Health and Family Welfare in Karnataka and West Bengal. Because of the commonality of the program in the states of Karnataka, Punjab and West Bengal as well as that of Andhra Pradesh under the First Referral Health System Project, every effort will be made to coordinate the development of the projects in the four states and to encourage the states to share their implementation experience. During project preparation, the initiative taken by the Union Ministry of Health to bring the states together worked very well. This process should continue to be fostered during the implementation period as well. This will result in considerable cross-fertilization of implementation experience across the project states and learning from each other. The Bank supervision team can play a key role in facilitating this process. This process will also result in substantial cost savings of supervising a project of this size since we can eliminate a number of repetitious tasks in each state.

2. Mission Frequency, Scheduling, Programs. Regular Bank supervision missions will visit the project approximately every six months. Thus if the project is launched in May-June 1996, supervision missions would be scheduled between October-November, 1996 and between April-May, 1997. Apart from two main missions during the first year of implementation, a number of other interventions may be necessary from our side, including short visits to the states to facilitate project start-up. In subsequent years, we would be back to a two-mission a year scheduled as noted above.

3. On each supervision mission the project coordinators in Karnataka, Punjab and West Bengal will present a six-monthly progress report on the status of implementation for review and discussion. The Chief Engineer of the construction wing of the Health Department in Karnataka and West Bengal and the Health Systems Corporation in Punjab will also make presentations about the progress of civil works component to be incorporated in an overall progress report. The Secretary, and in his absence, the Additional/Joint Secretary of the Department of Health and Family Welfare will update the mission on the progress on policy issues of the project.

4. Each supervision mission will include field trips visiting a sample of different district, subdivisional, and rural/community hospitals. The mission will be appropriately staffed as discussed below. Tribal areas in Karnataka and West Bengal will be visited at least once every year which will include a tribal specialist who will visit a sample of project sites and facilitate the six monthly supervision missions.

5. Composition of Missions. The missions will be led by the Bank task manager and will include as appropriate at the time, specialists in hospital management, public health, hospital equipment matters, economics, general management training, IEC and tribal issues, HMIS, surveillance and medical waste management. Specialists may also visit the states separately and individually by prior arrangement between the task manager and the Health Systems Corporation in Punjab and the Department of Health, Medical and Family Welfare in Karnataka and West Bengal. In addition, required specialists in other areas may occasionally be included in missions as needed.

6. Additional Missions. In addition to the above, the task manager may visit the three states with or without specialist colleagues, in between routine supervision missions as needed for trouble-shooting or emergencies, or during the first year of the project in order to help ensure that project implementation gets off to a smooth start. The task manager may also, by prior arrangement with the concerned agencies in the states, authorize individual specialists to make separate between-mission visits. Every effort will be made during supervision missions to link the supervision of activities in other Health and Family Welfare projects in the states which are interlinked with this

project. Supervision of other projects may also be requested to follow-up on selected activities of State Health II based on the concept of state-based supervision.

7. Supervision of Policy Reforms: Six monthly supervision will monitor compliance of the Policy Reform program. An economist and a management/institutional specialist will be assigned responsibility during supervision missions to monitor compliance and progress on policy matters.

8. Supervision of Software Aspects: In addition to the technical specialists that will accompany the Bank supervision team as appropriate, contacts have been established with the WHO team in Delhi to assist in the supervision of the technical aspects of the project. The Bank team will continue to bring in experts in the areas of public health, hospital and equipment management, IEC, HMIS, surveillance and waste management.

9. Special Arrangements for Civil Works. The civil works component is complex and costly and covers more than 201 hospitals in Karnataka, 150 hospitals in Punjab and 170 hospitals in West Bengal of varying sizes in addition to 28 PHCs and 8 Block PHCs in West Bengal. It therefore cannot be adequately supervised in the field by an architect visiting twice a year for a couple of weeks. A pyramidal, locally-based system of field monitoring for this component will therefore supplement the supervision arrangements described above. In addition, the civil works component will be covered by a special extra system of locally based supervision undertaken by the construction wing of the implementing agency in each state. There will be three layers, as follows:

(a) The first layer will be the maintenance of a civil works archive in the Human Resources Unit of the Bank's Delhi office, under the day-to-day supervision of one of the staff members. The implementing agencies in the three states will send to this archive particulars of each hospital for renovation and extension for which construction will be undertaken. This will include final as-built drawings and contracts entered into for renovations and extensions.

(b) The second layer will consist of local consultant architects who will report to the project task manager and will:

(i) review new arrivals in the archives once a month or once every two months as necessary depending on the volume of arrivals, and screen them for any departures from criteria or other features agreed upon at appraisal;

(ii) in some cases, just prior to the regular Bank supervision missions and under a briefing from the mission leader, visit the state to: (a) discuss cases departing from criteria set out in the technical manual with the Chief Engineer of the Construction Wing and the Project Coordinators in each state; and (b) make site visits to an appropriate sample of district, subdivisional and rural/community hospitals departing from criteria;

(iii) after these visits, report findings to the Project Coordinator and Chief Engineer and to the regular mission architect at the start of the supervision mission, as well as filing a report of the findings in the project archives.

(c) The third layer will consist of the regular supervision missions. At the start of each mission, the mission architect will review the reports of the local architect consultants and discuss them with the implementing agencies. The architect will then make site visits, in the state visited by the mission, to any identified problem buildings plus a random sample, drawn by him/her, of the buildings reviewed by the local consultants during the previous six months.

10. Six-Monthly Project Progress Report: This will report on the Performance Indicators highlighted in Annex 22. Corresponding computer software may be provided to the implementing agencies for use in report preparation. The format will be followed as is for the first year of the project. It will then be evaluated by the implementing agencies in time for the third supervision mission, discussed at the joint meeting, and revised as necessary by agreement between the implementing agencies and the mission team.

The Mid-Term Project Review

11. The Mid-Term Review of project progress will be carried out by an IDA mission and the implementing agencies in the three states, with a separate sub-review by the Department of Health and Family Welfare for Punjab, and submitted to IDA approximately half way through the project period; if the project is launched in mid-1996, this point would be approximately July 1999. The entire review process should take two to three months. The findings of the review would then be discussed during the next regular supervision mission. This mission would first hold a general meeting with implementing agencies as well as the Department of Health and Family Welfare in Punjab to discuss the findings of the Review.

12. The principal aim of the Mid-Term Review will be to determine if there are any major problems or issues in the project which necessitate re-thinking the original project design and making mid-course corrections. It also may be used for a preliminary evaluation of the impact of the project, if the project has progressed sufficiently to expect any impact.

13. The Mid-Term Review will consist of an internal stocktaking from the project records and MIS of the progress of project activities as measured against the original program and time schedule set out in the SAR and Implementation Plan (see Annex 21) plus optional additional parts as appropriate. Notes should be included on the status of fulfillment of project agreements and covenants, on the results of the evaluation of a management review, project's policy reforms aspects such as cost recovery policies, and on progress with the strategies for improving services to tribal groups. The stocktaking may also include indicators of the burden of disease and epidemiology.

14. A final Mid-Term Review Report will be submitted to IDA and discussed with the following supervision mission. It should highlight any major problems, issues, bottlenecks or delays in the project execution and the prospects for resolving them and completing the project on time.

15. The Mid-Term Review may be extended beyond those issues discussed above if this is considered appropriate and useful. The implementing agencies would decide upon the full review content, in consultation with IDA, at the beginning of planning for the review. Further elements of the review could include:

(a) a management review of the organizational structure in each state;

(b) a repeat of the beneficiary social assessment and training needs carried out as part of project preparation;

(c) special in-depth evaluative studies of the private health sector, workforce issues etc.;

(d) reviews of project progress by an external agency. However, this would be at the discretion of the implementing agencies.

Role of the Resident Mission

16. The human resources group of the New Delhi office has been strengthened to carry out an increasing share of the supervision work for human resources projects in India. This group will play an important role in this project. First, our senior public health adviser in Delhi may be asked to follow-up on fundamental issues. Our local public health specialist in Delhi will help monitor the project on a regular basis, follow-up on key implementation issues, and trouble shoot in the field, as needed. He/she will be assisted by a local staff specializing in the administration of projects. Procurement issues and guidance will be handled by the Delhi Office Procurement and Accounting Group. That same group will handle accounting, auditing, disbursement, and flow of funds issues. These actions will be part of the overall supervision program noted above.

FORECAST OF EXPENDITURES AND DISBURSEMENTS

Table 1: Forecast of Expenditures and Disbursements

IDA Fiscal Year	Expenditures		Disbursements /b		Cumulative as % of Total	Semester From Appraisal Date
	Semester	Cumulative	Semester	Cumulative /c		
	$US Million					
FY97						
1st (Jul 96 - Dec 96) /a	22.8	22.8	5.0	5.0	1%	1
2nd (Jan 97 - Jun 97)	22.8	45.6	19.5	24.5	7%	2
FY98						
1st (Jul 97 - Dec 97)	44.1	89.7	19.5	44.1	13%	3
2nd (Jan 98- Jun 98)	44.1	133.7	38.4	82.4	24%	4
FY99						
1st (Jul 98 - Dec 98)	55.6	189.3	38.4	120.8	35%	5
2nd (Jan 99 - Jun 99)	55.6	244.9	47.5	168.3	48%	6
FY2000						
1st (Jul 99 - Dec 99)	49.1	294.0	47.5	215.8	62%	7
2nd (Jan 2000 - Jun 2000)	49.1	343.1	40.2	255.9	73%	8
FY2001						
1st (Jul 2000 - Dec 2000)	36.8	379.9	40.2	296.1	85%	9
2nd (Jan 2001 - Jun 2001)	29.4	409.3	26.9	323.1	92%	10
FY2002						
1st (Jul 2001 - Dec 2001)	7.4	416.7	21.6	344.6	98%	11
2nd (Jan 2002 - Mar 2002)	-	-	5.4	350.0	100%	11

Closing Date: March 31, 2002

a/: Including Special Account and Retroactive Financing

b/: Figures may not appear to add due to rounding

c/: Disbursement projections take into account the Regional Profiles for similar type projects

DOCUMENTS AVAILABLE IN PROJECT FILE

Project Proposal: Karnataka Health Systems Development Project; January 1995.

Project Proposal: Karnataka Health Systems Development Project; July 1995.

Project Proposal: Karnataka Health Systems Development Project; September, 1995.

Project Proposal: Punjab Health Systems Development Project; January 1995.

Project Proposal: Punjab Health Systems Development Project; July 1995.

Project Proposal: Punjab Health Systems Development Project; September, 1995.

Project Proposal: West Bengal Health Systems Development Project; January 1995.

Project Proposal: West Bengal Health Systems Development Project; July 1995.

Project Proposal: West Bengal Health Systems Development Project; September, 1995.

Proceedings of Workshop on Norms for Hospital Services and Facilities, Karnataka. Department of Health and Family Welfare, Karnataka; 1995.

Proceedings of Workshop on Norms for Hospital Services and Facilities, West Bengal. Department of Health and Family Welfare, Punjab; 1995.

Proceedings of Workshop on Norms for Hospital Services and Facilities, Punjab. Department of Health and Family Welfare, West Bengal; 1995.

Proceedings of Workshop on Strengthening Secondary Level Hospital Services. Department of Health and Family Welfare, West Bengal; Calcutta; 1995.

Proceedings of Workshop on Policy and Finance Strategies for Strengthening Primary Health Care Services. Union Ministry of Health and Family Welfare; Jaipur; 1995.

IDA Preparation Mission: State Health Systems Development Project II, Back-to-Office Report; November, 1994.

IDA Preparation Mission: State Health Systems Development Project II, Back-to-Office Report; March, 1995.

IDA Preparation Mission: State Health Systems Development Project II, Back-to-Office Report; June, 1995.

IDA Preappraisal Mission: State Health Systems Development Project II, Back-to-Office Report; August, 1995.

IDA Appraisal Mission: State Health Systems Development Project II, Aide-Memoire, October, 1995.

Karnataka: Site Survey of First Referral Hospitals.

Punjab: Site Survey of First Referral Hospitals.

West Bengal: Site Survey of First Referral Hospitals.

Beneficiary Needs Assessment in Karnataka. ASCI; 1995.

Review of the Private Sector in Health Care in Karnataka. ASCI; 1995.

Beneficiary Needs Assessment in Punjab. Foundation for Research and Development of Underprivileged Groups (FRDUG); 1995.

Review of the Private Sector in Health in Punjab. FRDUG; 1995.

Beneficiary Needs Assessment in West Bengal. Operations Research Group (ORG); 1995.

Review of the Private Sector in Health in West Bengal. ORG; 1995.

Burden of Disease and Cost-Effectiveness Study in Andhra Pradesh. The Administrative Staff College of India (ASCI); 1995.