CURRENCY EQUIVALENTS

Currency Unit  =  Rupee (Rs)
Rs 1  =  US$0.077
US$1  =  Rs 13.0

ABBREVIATIONS

AHP  Accelerated Health Program
BHS  Basic Health System
BHU  Basic Health Unit
CBR  Crude Birth Rate
CDR  Crude Death Rate
CHW  Community Health Worker
DG  Director General
DHO  District Health Officer
EPI  Expanded Program for Immunization
IRHC  Integrated Rural Health Complex
LHV  Lady Health Visitor
MCH  Maternal and Child Health
MOHSW  Ministry of Health and Social Welfare
MT  Medical Technician
ORS  Oral Rehydration Salts
PCM  Protein-Calorie Malnutrition
PFS  Pakistan Fertility Survey
PIA  Pakistan International Airlines
RHC  Rural Health Center
TBA  Traditional Birth Attendant
WAPDA  Water and Power Development Authority

Fiscal Year
July - June 30
PAKISTAN - HEALTH SECTOR REPORT

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This report is based on the findings of a health sector mission which visited Pakistan from September 14 to October 4, 1982; it consisted of Mrs. Nydia Maraviglia (mission leader), Mr. Michael Mills (health economist), Mr. Stanley Music (consultant, epidemiology) and Mr. John Ranken (management consultant). Mr. John Cleland (consultant, demography, with an earlier population mission) contributed the mortality analysis. The report was revised after a review of the draft Sixth Plan in July, 1983 and discussions with the GOP in February and July - August, 1983.
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I. INTRODUCTION AND SUMMARY

1.01 At the request of the Government of Pakistan, a World Bank review of the health sector took place in September-October 1982. The mission's work was coordinated by the Planning Division in the Ministry of Planning and Development. The Federal Ministry of Health and Social Welfare (MOHSW) provided technical guidance, and organized the mission's visits and meetings with the four provincial health departments, other health organizations, and teaching institutions. The main objectives of this mission were to review the health sector and government policies and goals; to assess health programs, services and manpower development in relation to those policies and goals; and to examine the technical, financial, and organizational/managerial feasibility of the proposals for the Sixth Five-Year Plan for the period 1983-87. The mission was requested by the Government to present a thorough assessment of problems, constraints and feasibility. This report presents the findings concerning: population, fertility, and mortality patterns; the health situation; public health organization and management; roles of public and private health sectors and social security; health financing, including expenditure patterns, trends and projections; a review of the Fifth Plan and the Sixth Plan proposals; and issues and constraints, including a critique of those proposals. It concludes with some recommendations.

1.02 The population of Pakistan reached 87 million in mid-1982, a five-fold increase during this century. The annual average population growth rate of 2.9%, the result of dramatic reductions in the death rate unaccompanied by any significant decline in fertility, is now causing the population to double every 25 years. Vital rates are currently estimated at 41 per 1000 population for births and 11-12 per 1000 for deaths. Fertility remains high as a result of a young age structure, almost universal and early marriage, and low use of contraception. Mortality declined between 1900 and 1960 from 40 to 16 per 1000, with the bulk of the decline occurring between 1950 and 1960 as a result of the control of epidemics such as smallpox, cholera and plague, and malaria in the 1950's. Since the mid-1960's, the decline in the crude death rate (CDR) is mainly attributed to improved housing conditions in the early 1970's and an increasingly younger age distribution of the population. Infant mortality is officially estimated at 90 per 1000 live births, although it may be higher. (Analyses of the 1975 Pakistan Fertility Survey data strongly suggest an infant mortality of 140-145 per 1000 in the mid-1970's.)

1.03 Survey data place tetanus as the most common cause of death of children under 2 years, followed by measles. Infectious diseases have in the past and do at present dominate the morbidity and mortality patterns at all ages, although the most vulnerable groups are young children and women in reproductive ages. Among infections, diarrhea is a common cause of morbidity and mortality. Malnutrition is another important underlying cause of sickness and death, especially among young children and pregnant women. Malaria and tuberculosis also continue to be serious health problems. This mortality pattern points to a low level of immunization of the susceptible population, low coverage of effective preventive programs, lack of simple and accessible health care, and unsatisfactory sanitation and water supplies.
1.04 Although past health plans identified appropriate interventions to improve the health situation, implementation succeeded better in the development of physical infrastructure and manpower training than in the establishment of effective health programs and services to the people. During the Fifth Plan period, accomplishments were modest: the CDR was reduced from 14 to 11-12 per 1000; the infant mortality rate from 105 to 90; and life expectancy increased by one year (to 55 years for males and 54 for females). Although in 1975 almost 100% of the urban population had access to a health facility and 86% of the rural people lived within 5 km$^1/$ of a health center, only 17% of people then made use of a government health facility. Utilization is still uneven, with urban hospitals and outpatient clinics being overflooded with patients, but with rural health centers being used by very few. The indigenous medical system of hakims and vedic practitioners is still very popular, filling the gap created by a deficient allopathic (western) health system (65% of people use traditional medicine at some time). The private sector consumes a major portion of the money spent on health; it operates mostly in urban areas; and is concerned overwhelmingly with cure rather than prevention. Commercial pharmacies flourish, more heavily in urban areas, and offer a wide range of pharmaceuticals for sale without prescription. Some large employers e.g. Pakistan International Airlines (PIA), Water and Power Development Authority (WAPDA), and Pakistan Railways — provide health services for their employees in their own clinics and hospitals. A pension scheme for industrial workers—social security—provides medical care to less than 5% of the population.

1.05 The organization of public health services consists of the MOHSW with policy planning and coordinating functions, and a department of health in each of the four provinces for operating the services and programs. Health services are also provided by local authorities. There are other government organizations also involved in various ways in health—e.g. Population Division, Environmental and Urban Affairs Division, and Labor Division.

1.06 Since 1974, a new structure—the basic health system (BHS)—has been developed to provide a link between the village communities and hospitals, by using rural doctors, auxiliary level medical technicians (MTs) and community health workers (CHWs). Much of the physical infrastructure, consisting of rural health centers (RHCs) and basic health units (BHUs), is now essentially built (except in more remote areas particularly in Baluchistan); but the development of staff and operations in the last six to eight years has been exasperatingly slow. The BHS was intended to replace the old system of scattered and mostly uncoordinated rural health units, dispensaries, maternal and child health (MCH) centers and tehsil hospitals, with a coherent structure. Since this new scheme was conceived, however, several important programmatic changes have taken place, which have been officially approved and incorporated into the Sixth Five Year Plan. They are: (a) only TBAs will be trained as community health workers; (b) doctors will be now posted in BHUs, in addition to MTs; and (c) family planning should be offered in all health facilities in

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1/ The Government has used a variety of criteria for assessing accessibility to health facilities. In paras. 4.01 and 8.02, for example, other criteria are used instead.
the country, including RHCs and BHUs as part of MCH services. The implications of these changes for organization and operation of services, and training have not yet been fully studied.

1.07 In 1982 the Government introduced an Accelerated Health Program (AHP) with three components: (a) training of traditional birth attendants (TBAs); (b) production and distribution of oral rehydration salts (ORS) for treatment of diarrheas; and (c) an expanded program for immunization (EPI). These are the lead programs for the Sixth Five-Year Health Plan 1983–88. The AHP has already had some success and it could also be an effective way of, inter alia, focussing the health system on priority health needs; establishing detailed plans and programs for the next five years; and tackling many managerial problems. However, the three programs are heavily dependent on the need for fundamental changes and improvements in the health system through which they will be delivered. These requirements include:

(a) strengthening of the weak planning process which is now manifested in unrealistic goals, a mismatch between resources and outputs in relation to objectives, and a separation between planning and implementation;

(b) reorienting the highly centralized bureaucratic approach to management with its low absorptive capacity for change and concern for "administration" rather than management;

(c) reviewing and revising the support systems (i.e. distribution of drugs and supplies, transport, information, and equipment and maintenance);

(d) developing and adopting appropriate technology in buildings, equipment, transport, and laboratory instruments, and standardizing equipment;

(e) strengthening, as a priority, the district health structure and management as a key to an effective public health system;

(f) studying the implications of a recent decision to post a doctor to each BHU and a third doctor to each RHC, which is a departure from the original BHS concept adopted in the Fifth Plan, and arriving at appropriate functions for doctors and paramedics;

(g) improving effectiveness of services, especially to find a meaningful role for hospitals in primary health care, and to strengthen their management; and

(h) rationalizing and strengthening manpower development and in-service training, including a thorough examination of the present situation of the large numbers of doctors graduating every year in relation with the capacity of the health sector to employ them, the deteriorating quality of medical education in many medical schools and the imbalance in the doctor/nurse and nurse/auxiliary ratios.
1.08 Underlying the technical problems and issues highlighted above are the financial implications of programs and investments, and questions of cost recovery, affordability and relevance of resource allocation in relation to goals and objectives. The issue of increased cost recovery in the government health services was dealt with extensively by the Bank mission in 1982 and is now being addressed by the Government as part of the Sixth Plan. The findings of the mission on the other financial issues may be summarized as follows:

   (a) the health services in Pakistan are certainly under-financed, but not as much as is sometimes argued (about 3.2% of GNP goes to health, but of this a large amount is spent in the private sector);

   (b) there are significant operational and allocative inefficiencies with respect to both capital and recurrent expenditures; also there are inequities in that about six times as much per person is spent by the Government on health services in urban as in rural areas;

   (c) the proposed health investment program in the Sixth Plan is a substantial increase over previous capital expenditures in the health sector; but even the indicative allocation of Rs 14,000 million would be insufficient for the proposed projects as these have been costed in 1983 prices apparently without allowance for anticipated inflation (unlike the macro economic framework in the Sixth Plan); and

   (d) a more detailed analysis is needed of projected operating and maintenance budgets, the feasibility of the planned 20% p.a. real growth rate for them, and how financial resources will be matched particularly with provincial operating and maintenance responsibilities.

1.09 In view of the serious financial limitations, the development of the health sector should be planned to take account of limited operating and maintenance funds in particular. For example, the investment strategy could involve considerably less investment in new infrastructure and more attention paid to the development of appropriate training, organizational arrangements and logistics. There may also be scope for some innovative financing schemes in the private sector, for instance through pre-paid plans in urban areas. In addition, studies are needed to decide on the future role of the social security system in health care.

1.10 Change is needed in the planning process itself. For the preparation of the Sixth Plan, several working groups were established, with representatives from the Planning Commission, the MOHSW, the provincial health departments, training institutions and the private sector. This was an important step forward, but there is now still a need to establish a "Joint Health Planning and Development Unit" under the MOHSW with overall responsibility for coordinating and monitoring the process required for implementation of the Sixth Plan.
II. POPULATION, FERTILITY AND MORTALITY PATTERNS

Population

2.01 The population of Pakistan was estimated at about 87 million in mid-1982, a five-fold increase since the beginning of this century. Moreover, the annual average population growth rate has accelerated from 1.7% in the first half of the century to 2.9% as a result of dramatic reductions in the death rate unaccompanied by any significant decline in fertility. The population is now doubling every 25 years. In view of these disturbing trends and their implications for achievement of socio-economic development goals, the Government is pursuing demographic behavior changes as part of the overall development strategy, through an inter-sectoral population program. The contribution of the health sector to this program is expected to take place through the provision of family planning services in all health facilities.

Fertility

2.02 Estimates of vital rates for 1981 indicate a crude birth rate (CBR) of 41 per 1000 population and a CDR of 11-12 per 1000. Although there is evidence of a slight decline in fertility, several factors interact to maintain a high CBR and a fast rate of population growth. These factors include a growing number of women of reproductive age; a low mean age at first marriage of women (about 17 years) and long exposure to childbearing; and almost universal marriage.

General Mortality

2.03 In the absence of complete registration of births and deaths and accurate census counts, data from several national sample surveys have been used in analysing mortality levels and trends.\(^3\) The CDR was around 40 per 1000 during the early part of this century mainly as a consequence of endemic diseases like smallpox, cholera, plague and tuberculosis and the influenza epidemics of 1918; it declined gradually to about 30 per 1000 by 1950, when malaria was generally brought under control. By the mid-1960's, the CDR had declined to 16 per 1000, with the introduction of antibiotics and other drugs, the malaria eradication program initiated in the 1950's and relative prosperity of rural areas. The latest declines in CDR are attributed to unprecedented investments in housing, the green revolution, and an increasingly younger age distribution of the population.

2.04 Female mortality in Pakistan is significantly higher than male mortality, except for children under one year of age and adults over 44 years where male mortality is slightly higher. A major reason for higher female mortality between 15 and 44 years is the very high risk of death

\(^2\) Details on Pakistan's population sector are presented in the "Staff Appraisal Report - Pakistan: Population Project" (4166-PAK), World Bank, April 1, 1983.

\(^3\) The following discussion on mortality draws on a chapter by Iqbal Alam and John Cleland entitled "Infant and Child Mortality" from the forthcoming World Fertility Survey Monograph on Pakistan, International Statistical Institute, London (manuscript, 1982).
during childbearing—maternal mortality in Pakistan is about 6-8 per 1000 live births, or 60 to 80 times the level in industrialized countries. Among children less than 14 years, the higher female mortality is probably indicative of less health care and nutrition provided to female children. However, comparison of male/female differentials between 1962-65 and 1968-71 suggests a gradual narrowing of these differences.

Infant and Child Mortality

2.05 Infant and child mortality declines were steep in the 1950's and 1960's but much less so during the 1970's (Table 1). The current level of infant mortality is not known for certain, but the Government estimates that it is about 90 per 1000.

Table 1: Infant and Child Mortality in Pakistan 1950-74

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<tbody>
<tr>
<td>Infant mortality rate per 1000 live births</td>
<td>178</td>
<td>157</td>
<td>140</td>
<td>136</td>
<td>145</td>
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<tr>
<td>Neonatal mortality rate per 1000 live births</td>
<td>94</td>
<td>85</td>
<td>80</td>
<td>78</td>
<td>84</td>
</tr>
<tr>
<td>Post-neonatal mortality rate per 1000 live births</td>
<td>84</td>
<td>72</td>
<td>60</td>
<td>58</td>
<td>61</td>
</tr>
<tr>
<td>Age specific mortality rates per 1000 population:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1-2 years</td>
<td>74</td>
<td>64</td>
<td>42</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>3-5 years</td>
<td>72</td>
<td>56</td>
<td>40</td>
<td>43</td>
<td>48</td>
</tr>
</tbody>
</table>

Source: Pakistan Fertility Survey.

According to data from the Pakistan Fertility Survey (PFS), neonatal mortality (more influenced by biological and obstetric factors than by the environment) declined only about 10% between 1950 and 1960, and since then has remained almost stationary at around 80 per 1000 live births. Post-neonatal mortality (more related to environmental and socio-economic factors) experienced a fall of almost 30% over the 15 year period 1950-1965, but little change is evident since then. In Pakistan, the smaller decrease in neonatal mortality than in post-neonatal deaths is consistent with the slower progress in improvements in midwifery, compared to a relatively faster progress in economic development and environmental conditions (e.g. mass campaigns against malaria between 1950 and the 1960's).

2.06 Mortality of children between ages 1 and 5 showed a substantial decline from 1950-55 to the 1960's (almost 60% for toddlers 1-2 years of age and 40% for children 3-5 years old). This decline is plausible and may be attributed to the same environmental factors responsible for the fall in post-neonatal mortality during that period. There is, however, a similar stagnation in the decline in child mortality in the recent past.
2.07 The PFS analysis presents evidence of several differentials in infant mortality concerning maternal age, birth order, gender and birth interval. As expected, children born to very young women have a greatly increased risk of dying before one year and, most frequently, before reaching one month. The increased risks of young maternal age are related to biological and midwifery factors, rather than environmental factors or mother's education. Infant mortality differentials by birth order or sex are not significant. On the other hand, mother's education and urban residence are two factors associated most strongly with reduced risk of infant death. Better nutrition and appropriate health care of young children by educated mothers and easier access to health care in urban areas are factors strongly responsible for better survival chances for young children. Mothers' education is more closely related to infant and child mortality than the socio-economic status of the family, as measured by the occupation or education of the husband. But by far the most striking determinant of infant and toddler death in this analysis of Pakistani data is the preceding birth interval. Short preceding birth intervals are associated with severe excess infant mortality. This may be due to competition between infants and damage to the mother's capacity to bear healthy infants. The PFS did not find evidence of any tendency by couples to increase the tempo of reproduction in order to replace a dead child. These findings suggest that infant and child mortality could be reduced faster by encouraging changes in child care practices, than by general changes in economic standards of living which are considerably slower to achieve. Also, a wide spacing of births by contraception should bring about considerable improvements in infant and child mortality. Female education and higher age at marriage appear as two important long-term policy options to lower infant and child mortality.

2.08 The most important finding emerging from the PFS analysis of infant and child mortality trends is that the death rates under 5 years of age stabilized around the 1960's at a rather high level. The survey places the level of infant mortality in the mid 1970's considerably higher than the Government estimate of 105—at 145 infant deaths per 1000 live births. The probability of dying by age 5 is put at about 200 per 1000 live births.

Causes of Death

2.09 A national survey conducted in 1978 of almost 20,000 births indicated tetanus as the most common cause of death of children under 2 years, followed by measles. A more recent disease specific survey focusing on neonatal tetanus based on a sample of about 14,000 live births produced an astonishing 60% of all neonatal deaths attributed to tetanus. Diarrheas, leading to dehydration, are also a common cause of death, particularly among children, as are malaria and tuberculosis. Even this fragmented epidemiological information points to several factors of relevance in mortality: a low level of immunization (although there has recently been some success with the EPI program), a low effectiveness in preventive programs, a low use of government health facilities in rural areas, and unsatisfactory sanitation and water supplies.
III. THE HEALTH SITUATION – DISEASE PATTERNS

3.01 Infectious diseases have in the past and do at present dominate the morbidity and mortality patterns. The most vulnerable groups are children under five years and women in reproductive ages. Information on causes of morbidity is even more scarce than mortality data. However, partial surveys, hospital records and experience indicate that the most common causes of illness among children are neonatal tetanus, measles, whooping cough and diphtheria. These diseases cause a heavy morbidity and mortality burden, although they are technically easy to prevent through vaccination.

3.02 Another group of diseases of high incidence among children and adults is gastrointestinal infections, which generally manifest themselves through diarrhea. Diarrhea is generally discussed as a single disease entity mainly because there is a single cheap intervention for its treatment—oral rehydration—that has been shown to virtually eliminate mortality from this syndrome, irrespective of specific etiology, if properly administered. This group accounts for 20–25% of the morbidity reported from health care institutions. Long-term strategies for reducing the incidence of diarrheal disease include health education and environmental improvements such as clean water and sanitation. But deaths from the dehydration caused by diarrheas could be largely prevented immediately through education of mothers in the use of ORS both pre-packaged and home prepared with local materials (salt, sugar and water). A Government factory already produces ORS packages. Also, contracts have been given to private firms. Its timely distribution to homes needing them and the essential educational process that must accompany this distribution are heavily dependent on the capacity of the health system to reach people in need, both in urban and rural areas.

3.03 Information on nutritional status is available from two national nutrition surveys conducted in 1965–66 and 1976–77, and a more recent but limited survey conducted in 1982. During the period 1965–66 to 1976–77, food production almost doubled and the population increased by about 38%. Against this background, however, protein-calorie malnutrition (PCM) remained a major personal and public health problem. The 1976–77 Micro-Nutrient Survey showed clearly that PCM is largely a problem of infants and pre-school children, with 15% of children less than 5 years of age exhibiting third degree malnutrition (Gomez – 60% of growth standard, a level of growth retardation severe enough to require immediate intervention). Moreover, about 60% of Pakistani children surveyed demonstrated some level of unsatisfactory growth. Urban residents per capita consumed 15% more calories than rural residents, a figure also unchanged since 1965–66. The data from the 1982 survey were broadly consistent with the earlier results.

3.04 The PCM problem described above is partly a result of the late introduction of weaning foods. Virtually all Pakistani mothers breast-feed their babies, although there is increasing use of bottles especially in urban areas. Breast-feeding is a desirable practice, but human breast milk as the single source of nutrition for infants ceases to be adequate and needs to be supplemented when the child reaches four-five months of age. In Pakistan, however, according to the 1976–77 survey, only 5% of mothers introduced solid food before their child reached 6 months of age; only 54% had done so by 12 months; and at 18 months, almost 20% of the children had not yet had supplemental solid food.
3.05 Other nutritional problems addressed and quantified by the surveys included anemia and goiter. Anemia is prevalent among all segments of the population, with pregnant and lactating women having higher rates of hemoglobin deficiency than any other people. The deficiency rate in rural areas in the mid-1970's was about three times the rate for urban areas. Iron-fortification of whole wheat flour would probably be the most cost-effective intervention. (While the Pakistani diet is not per se iron deficient, it is a peculiarity of diets based upon unfortified wheat, that the natural iron in the wheat remains largely unabsorbed, due to complex biochemical reasons.) Goiter was found in 3% of the surveyed population. However, the 1976-77 survey excluded the Northern Areas and Azad Jammu and Kashmir, where previous surveys had found focal prevalence rates of goiter as high as 71%. Goiter is totally preventable by iodine supplementation of (e.g.) salt; and although this is already being done at one factory in Peshawar, many people in affected parts of the country are still not using iodized salt. And finally dental caries are also becoming a significant problem, partly due to dietary changes.

3.06 Nutritional deficiencies, in addition to contributing to the cycle of disease and malnutrition described above, also contribute to high infant mortality. Children born to malnourished mothers and who weigh less than 2500 grams at birth have a much higher mortality. In developed countries, about 10% of children have a low birth weight rate and they account for about 80% of all infant mortality. In Pakistan the low birth weight rate varies between 10% in the higher socio-economic groups, and about 30% in the poverty group.

3.07 Another predisposing factor in infant and child morbidity and mortality is the duration of the preceding birth interval (para. 2.07). As mentioned, short preceding birth intervals have been found to be associated with severe excess infant and toddler mortality. Encouragement of family planning practice would clearly contribute to the prevention of deaths of infants and children. Together with PCM and low birth weight, high fertility—the latter both a health and a demographic problem for the country—could be dealt with through appropriate education, services and surveillance, as part of MCH programs; but such programs have a very limited coverage in Pakistan and family planning is not offered in health facilities (although the new population program propitiates its introduction). About 74% of mothers get all their prenatal care and advice from relatives and/or neighbors; 92% deliver at home; and almost no women report having had any postpartum check-ups or well-baby care.

3.08 Malaria continues to be a serious health problem in Pakistan. The expansion of agriculture through irrigation projects and dams increased the propagation of mosquitoes and currently over 50% of the population live in areas where malaria vectors are prevalent. In the early 1960's the disease was under control, but in 1969 it reappeared due to a slackening of the spraying program and development of resistance to insecticides by mosquitoes. In 1972 and 1975 cases reached epidemic proportions. At that time spraying was intensified, but in the late 1970's control measures deteriorated due to unavailability of insecticides (except for that supplied by UNHCR for the Afghan camps). A prevalence survey conducted in two Punjabi villages in 1979 showed morbidity rates for malaria of 23.7%. In 1982 USAID approved new assistance to the malaria program, in the order of US$5 million per year. This recent development should assist in improving control measures.
3.09 Tuberculosis is still a major public and personal health problem in Pakistan. It is the fourth ranking cause of death, with some 68,000 persons dying annually of this largely treatable disease. The second national tuberculosis prevalence survey (1974-78) estimated that there were 1.6 million Pakistanis with radiologically active tuberculosis, including more than 250,000 sputum positive infectious cases capable of spreading the disease to others. Detection of these sources of infection through active case-finding and rendering them non-infectious by effective treatment should form the basis for reduction of tuberculosis. The country's current case-finding and treatment capabilities are underutilized and inadequate to the task, as the prevalence of infection has not changed significantly since the first survey (1961-62). Tuberculosis prevention remains an elusive goal on a scientific and technical basis, as BCG vaccine is far from being an ideal and effective immunogen. Case-finding and treatment, as much as possible integrated into the general health services, is still the most effective approach to tuberculosis control.

3.10 To sum up, much of the disease burden is preventable and much of the premature mortality avoidable. Expensive curative services and high level technology can do little to change this picture; considerably more important are effective MCH, health education, other preventive measures, and a long-term strategy and programs for environmental improvement.

IV. HEALTH OBJECTIVES, STRATEGIES AND THE PLANNING PROCESS

Objectives and Strategies

4.01 The Fifth Plan for the period 1978-83 contained the following objectives: (a) to provide modern health coverage within 2-4 miles for the whole population; (b) to reduce the CDR from 14.0 to 10.2 per 1000 population; (c) to reduce infant mortality from 105 to 79 per 1000 live births; and (d) to increase life expectancy from 54 to 60 years for men, and from 53 to 59 years for women.

4.02 The broad strategy to achieve these objectives included the following elements: (a) a shift in manpower utilization from a doctor-oriented system to a three-tier system of doctors, auxiliaries and CHWs; (b) a better balance of facilities between urban and rural areas; (c) integration of special programs; (d) a shift in emphasis from curative to preventive measures and associated community development; (e) a rapid expansion in the output of paramedical and auxiliary staff, and a consolidation of higher medical education; (f) development of specialist cadres of doctors and paraprofessionals; and (g) improved linkages between health and other sectors, such as physical planning and housing, education, agriculture and nutrition, and environmental sanitation. Specific quantitative targets were also given in the Fifth Plan. These included targets for new infrastructure and extensions and improvements in existing facilities, manpower training, number of units of service delivery, and reduction in morbidity. In 1982 the Government introduced the AHP which included training of TBAs, production and distribution of ORS, and an EPI. (In 1983 the Government prepared the Sixth Plan for the period 1983-87, and this report outlines its main proposals in Section VIII.)
Planning Process

4.03 Various aspects of health planning are undertaken at federal and provincial government levels, and by planning and health departments or ministries. The Federal Planning Commission has overall planning responsibility, including: (a) formulation of five-year plans, annual development programs, and annual plans; (b) planning for the private sector; (c) evaluation of economic progress; and (d) advice on economic policy. The Planning Commission provides capital funding from federal and external sources for new projects. Within the Planning Commission, the chief of the Health Section has responsibility for health planning. The MOHSW has health administrators who follow the planning guidelines and submit schemes to provincial health departments for their consideration. This leads to projects, programs and plans which are given a phasing and financial commitment for each financial year. The guidelines are also used by the health administrators as a basis for monitoring and evaluating implementation.

4.04 Although some notable changes can be attributed to health planning in Pakistan—e.g. design of the three-tier system of basic health care, development of special programs including the malaria program, and the encouragement and specification of areas of medical and health services research—planning has been less successful in controlling the expansion of medical training, relating allopathic and traditional health practices, balancing primary and secondary care, and giving direction to the private sector. Also, while the system is potentially capable of producing plans at national, provincial and district levels, such plans do not at present feature as part of the management process.

V. THE PUBLIC HEALTH SECTOR

Organization

5.01 The MOHSW, in association with the Ministry of Planning and Development and Ministry of Finance, is responsible for health policy-making. Other federal government organizations involved in various ways in health are: Population Planning Division, Science and Technology Division, Labour Division, Environmental and Urban Affairs Division, States and Frontier Regions, Kashmir Affairs Division, public service institutions, and local governments including municipal corporations.

5.02 Organizational charts for the health services at Federal, provincial and district levels are presented in Annex 2. Functions of the Federal MOHSW include: (a) co-ordination of health functions; (b) national health planning; (c) external relationships in the health field; (d) provision of health services for government employees and the Federal District of Islamabad; (e) establishment of postgraduate medical centers and maintenance of professional education standards; (f) drugs control; (g) services for mental illness and retardation; and (h) containment of communicable diseases (such as malaria). Provincial health departments have responsibility for providing health services, directly in the case of teaching hospitals and special institutions, and through districts for other local services. There are differences in organization between
provinces, e.g. in the Punjab there are five divisional directors, about to be increased to eight, each with responsibility for three-five districts.

5.03 District services include: (a) a district health office headed by a district health officer (DHO), reporting to the provincial health director general (DG); (b) district headquarters hospital headed by a medical superintendent also reporting directly to the provincial health DG; (c) state owned services including tehsil hospitals (tehsil is a political sub-division within a district), RHCs, BHUs, dispensaries, sub-centers, and MCH centers; (d) local management of vertical programs reporting to the respective provincial heads of each program; e.g. EPI and malaria control; (e) municipal health services (including environmental sanitation) controlled by municipal authorities; and (f) population planning, through a district population officer, who has the same level as the DHO and reports to the provincial DG, population.

Management

5.04 The Federal Government retains overall responsibility for the coordination and orderly management and development of all health services. The President has two advisers, one on health and one on traditional medicine; but the main work of the MOHSW is carried out through the minister, secretary and director general of health to whom report a range of deputy director generals, deputy secretaries and project directors.

5.05 At the provincial level, the Provincial Secretary has direct control of teaching hospitals and special institutions; and the Director General, Health is responsible for DHOs and superintendents of district headquarters hospitals. Significant decisions relating to districts, e.g. appointment of middle-level and senior staff and budget allocations, are made at the provincial level. Within districts, elected district councils have overseeing functions concerning the establishment, maintenance and management of hospitals and health centers, and environmental health and sanitation. However, this system based on community involvement in management of health services is not yet operating. In the larger towns and cities these functions are assigned to municipal councils and corporations.

5.06 DHOs have responsibility, on paper, for overall health matters in the district. However, in practice, DHOs lack the authority needed to appoint, dispose and discipline staff; to manage budgets; and to plan and coordinate the activities of their districts. Moreover, their remuneration and status compare unfavorably with those of district hospital superintendents, creating serious disincentives for preventive versus curative medical work.

5.07 Medical superintendents have day to day control of hospitals, and also retain medical responsibilities. However, their basic interest and training is usually in the medical field, rather than administration. They are supported by departmental heads who meet as a hospital committee to decide on equipment purchases or advise on priorities.
Facilities and Services

5.08 Health services in the public sector are provided through a network of about 600 teaching, district, and tehsil hospitals, 374 RHCs, 632 sub-centers, 1,715 BHUs, 3,275 rural dispensaries and 867 MCH centers. Teaching hospitals are attached to medical colleges and there are specialized tuberculosis, leprosy, and mental hospitals. RHCs and BHUs are designed to provide comprehensive curative and preventive services, but are mainly engaged in curative work. Table 3 in Annex 1 summarizes the health facilities available.

5.09 About 95 of the hospital beds are in urban areas with all teaching hospitals, medical schools and post-graduate institutions situated in towns or large cities (Table 4 of Annex 1). New post-graduate institutions are being developed at Hazara and Larkana, existing centers strengthened at Lahore and Karachi, and a major new tertiary hospital is being built in Islamabad. There is, in addition a new privately financed Aga Khan teaching hospital and medical school being completed in Karachi.

The Basic Health System

5.10 A new health structure, called the Basic Health System, is being developed to provide a systematic link between village communities and hospitals of the modern health system, with services planned to be provided as follows:

<table>
<thead>
<tr>
<th>Villages</th>
<th>1,000 population</th>
<th>2 community health workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic health units</td>
<td>10,000</td>
<td>1 doctor, 4-6 health auxiliaries</td>
</tr>
<tr>
<td>Rural health centers</td>
<td>100,000</td>
<td>3 doctors, 8 auxiliaries, 10/20 beds</td>
</tr>
<tr>
<td>Tehsil hospitals</td>
<td>380,000</td>
<td>Surgical, medical, lab. and x-ray facilities</td>
</tr>
<tr>
<td>District hospitals</td>
<td>1,160,000</td>
<td>Main specialties</td>
</tr>
<tr>
<td>Teaching hospitals</td>
<td>Province</td>
<td>All modern facilities</td>
</tr>
</tbody>
</table>

Each RHC is designed to serve 4-10 BHUs, and should be staffed with three doctors and eight MTs with functions of providing primary health care for the immediate area; acting as a referral center from BHUs; providing planning, management and supervision of preventive and promotive programs in the area; and serving as a focal point for information and supplies. Each BHU, which should be staffed by two MTs and support staff, is designed to provide health services for its own area; train and supervise CHWs; act as referral center for CHWs; and supply them with medicine and equipment. CHWs should live and work in their own villages, provide basic preventive services, and do screening and simple curative treatment. A start has been made on the above scheme of basic health services; federal and provincial basic health services cells have been established and a sizeable coverage of buildings now exists throughout the country. With some exceptions, RHCs are in a reasonable state of repair, but the imbalance in capital and recurrent spending has meant that it is easier to provide for new facilities than to maintain an adequate level of use and services in existing ones. In the past, following the pattern of government working hours, many facilities were unused in the afternoons. The government has now announced that hospitals and other health facilities will continue to
provide services in the afternoons, but apparently this policy is only being implemented in some places. The optimal size for BHUs and RHCs has been studied, but inflation has meant that buildings of optimal size are not provided because of financial allocations which are reduced in real terms. In rural areas, there is insufficient housing and accommodation for staff.

5.11 The main responsibility for this program rests with the federal BHS cell, which has a counterpart cell in each province. These cells are intended to provide advice and consultancy services, acting as change agents; however, their role has been limited largely to the planning and approval of physical facilities. Up to the present time, only 12 integrated rural health complexes (IRHCs) -- RHUs that are fully integrated with their associated BHUs and CHWs, to serve about 100,000 population -- out of 363 envisaged in the Fifth Five-Year Plan are functioning as such. Many dispensaries, sub-centers and MCH centers remain to be upgraded and assimilated into the new structure. Major staffing constraints and a limited capacity of the system for training MTs have slowed the process of developing the BHS. It is intended that multi-purpose MTs will replace medical assistants, dispensers, lady health visitors (LHVs) and health inspectors. The Government has recently modified the original staffing patterns of the BHS by increasing the current establishment for two doctors at RHCs to three, and by adding one doctor position at each BHU. Other modifications include the decision to train only TBAs to provide better care to pregnant women both during the prenatal and postnatal periods and at delivery, and to provide family planning in all health facilities. The implications of these modifications for service organization and operation and for training have not yet been fully studied.

5.12 At present, existing services run in parallel with the new system. Thus, dispensaries and sub-units continue with a different pattern of supervision from RHCs and BHUs. MCH centers are financed by local councils, yet are supervised by DHO's. LHVs provide services within RHCs, but do not relate to the local medical officer and are supervised by an external inspectress. It is not always clear who is in overall charge of RHCs and BHUs on a day-to-day basis, and there are no clear lines of managerial accountability between the different levels of the system. There are frequently inadequate resources for travel, transport and drugs; inadequate authority for workers at each level to make decisions relating to their own work; and poor incentives and career prospects. The respective roles of RHCs, BHUs and community services are not easily discernible; and although these units are designed to provide mainly preventive services with a minimum of medical involvement, the opposite is usually the rule.

5.13 Under the BHS program, CHWs are intended to provide local coverage throughout the rural areas, with one male and/or female CHW in each village undertaking preventive work and cure of simple diseases. Their training lasts from 3-6 months. There are fewer than 10,000 CHWs working at present, although the Fifth Plan intended to have over 50,000 CHWs working by 1983. Community participation is recognized as a need, but the involvement of district and provincial councils and also local communities in health affairs remains to be developed and organized.
Vertical Programs

5.14 Vertical programs have been part of the health system since the early 1960's. These include malaria, tuberculosis, and supplementary feeding, and more recently the EPI, ORS and training of TBAs. The malaria program has had its ups and downs in the last 22 years due to technical factors such as mosquito resistance to DDT spray, financial shortages, administrative delays, managerial overload, premature provincialization, supply difficulties, and poor community participation. Improvements were made with the introduction of malathion spray, but supply setbacks led to further difficulties in the program during the mid 1970's. These difficulties were partly overcome and the program has since been integrated into the general health services, but difficulties still remain regarding the status and gradings of malaria control workers. Administrative integration has not yet been achieved. The National Tuberculosis Control Program is working through some 60 districts and agencies, with about 400 centers providing diagnosis by sputum and x-ray examination and chemotherapy for detected cases. The World Food Program provides food for supplementary feeding which takes place through the provincial health departments, each under a provincial deputy project director. The food is distributed by health facilities and other organizations, but partly due to the absence of widespread MCH services this program is not based on a systematic identification and follow-up of children and mothers in need of food supplementation.

5.15 Family planning was a responsibility of the health outlets during the early 1960's, but it never amounted to a significant effort. In the mid-sixties the Ministry of Health established separate family planning clinics; and in 1979, with the transfer of the Population Division from the MOHSW to Planning and Development, those clinics became the base for a network of family welfare centers. The Government decided that integration of this system into a health infrastructure that needs basic organizational, technical, and managerial strengthening would not be in the best interests of renewed efforts to lower fertility. At the same time, it recognized that, in the long term, it is important for the success of the population program to have the support of health professionals (both in the public and private sectors) and to make family planning services available in all health outlets. Several measures are being adopted to make family welfare centers and other health networks complementary, for purposes of delivering MCH and family planning services. These include cross-training of health and population staff, compatibility of basic training for all health and population auxiliary staff, and inclusion of health officials in all population councils and committees.

5.16 In 1982 the Government introduced an Accelerated Health Program with three components: (a) training of traditional births attendants; (b) production and distribution of ORS packages for treatment of diarrheas; and (c) an expanded program for immunization. These are the lead programs of the Sixth Five-Year Health Plan 1983-88 (para. 9.13). The AHP is being carried out with a combined approach of centralized planning and direction, and local implementation. For EPI, vaccinations are delivered through stationary and outreach mobile services, linked with community participation and motivation. The technical and organizational resources of the National Institute of Health—a research institution comprising the national health laboratories—also support it. The ORS program addresses the same population of mothers and children and uses the same distribution
system. The training of TBAs is being done under both the regular program of the MOHSW and also under the AHP, and is being carried out by the Population Division as well.

Manpower and Training

5.17 There are serious imbalances between manpower needs and supply in the health sector in Pakistan. Annex 1, Table 5 sets out estimates of current numbers of staff employed in selected cadres, and annual training outputs. Annex 1, Table 6 makes projections of the numbers of staff needed to meet planned requirements. The needs of particular staff groups are examined below in some detail.

5.18 Medical technicians are required, under the BHS scheme, to be competent to deal with most problems presented in BHUs and RHCs, recognizing and referring to more trained staff problems beyond their competence. At least 50% of their time is intended to be spent training and supporting CHWs in villages. MTs are expected to provide a broad based service in situations where there is no doctor. They, therefore, have heavy responsibilities—working in relative isolation, carrying out diagnosis and treatment, supporting and developing CHWs, and linking community development activities with established health programs. Skills of existing medical technicians need to be upgraded and new recruits trained from scratch, which represents a considerable training requirement. A start has been made through the USAID program which was originally intended—under the Fifth Plan—to provide medical care for 50% of the rural population through 363 IRHCs with 9,720 MTs and 43,200 CHWs. About 2,000 MTs have been trained thus far. Projections have been revised and it is now planned to train a total of 1,359 MTs over the next five years in 26 MT training schools, which at best represents less than one-tenth of total needs.

5.19 Lady health visitors provide midwifery and MCH services in RHCs and MCH centers, having received a comprehensive theoretical and practical training lasting up to 27 months. At present there are 10 public health schools which train LHVs. Although female MTs will assume the functions of LHVs, no decision has yet been taken on the future of the latter.

5.20 Family welfare workers and family welfare counsellors, trained by and working for the country's Population Welfare Program under the Population Division in the Ministry of Planning and Development, have been made equivalent to LHVs and female MTs by the Pakistan Nursing Council. They receive an 18 month course of basic training in 12 regional training centers.

5.21 Nurses are trained through a 3-year program in 28 schools of nursing with a total capacity of 650 students. Post-graduate nurse education at the Jinnah Post-graduate Center, Karachi offers a 1-year course in ward administration and a 2-year course in ward administration and teaching. The shortage of nurses in hospitals (a nurse/doctor ratio of 1:4) is exacerbated by a shortage of male nurses. Through a combination of low staffing ratios and poor recruitment, hospitals are unduly dependent on student nurses whose training is frequently interrupted because of service demands. There are plans to provide more undergraduate and post-graduate
nursing schools, and train more specialist nurses in paediatrics, psychiatry and cardio-thoracic specialties.

5.22 Midwives have 10 months training over and above completed nursing studies and, after qualification and registration with the Pakistan Nursing Council, are eligible to work in hospitals, MCH centers and other health institutions.

5.23 Other paramedical workers include laboratory technicians, x-ray technicians, radiographers and operating theatre technicians who receive in-service training at the Jinnah Post-graduate Center and at the National Institute of Health. A 4-year pharmacy course is provided in Karachi and Lahore, but some hospital pharmacies are run by doctors. As trained pharmacists tend to go to work in the private sector, pharmacy assistants, known as compounders, receive 1-year hospital training. Undergraduate and postgraduate training in sanitary engineering is provided at the University of Lahore. The work of rural health inspectors is being assimilated into that of MTs, and a number of health inspector training schools have been upgraded into MT schools.

5.24 For the training of doctors, there has been a major increase in medical schools from 3 to 16 during the last 8 years, which has led to a current output of over 4,000 new doctors every year. This has caused strains in the medical schools, with large classes, shortages of teaching staff, student unrest and pressures on teaching and examination standards. A widespread concern about doctors' unemployment has diverted attention for the moment from fundamental questions about the deterioration of quality and problems of irrelevance of the training currently provided in many medical schools. In past years there was an economic argument that doctors could be trained to work overseas and earn foreign exchange through their remittances; but at present, opportunities for work in Europe and Arab countries are rapidly decreasing.

Support Systems

5.25 Pharmaceuticals and supplies. Hospitals and basic health services suffer from shortages of pharmaceuticals and materials due to lengthy delivery times, inadequate budgets, difficulties in assessing drug requirements, and logistical problems. Local purchases, which are more expensive, are therefore often made (varying from 20% to 75% of total supplies), drugs are hoarded, excessive indents are made, and wide discrepancies exist in availability between rural areas and urban facilities which are close to medical supply departments. Doctors in government health facilities have freedom to prescribe what in their judgement is in the patient's best interest. Under the BHS program, detailed studies have been made to determine recommended drugs and minimum quantities for RHCs and BHUs, but the recommendations of these studies are not followed up.

5.26 Transport. The BHS needs transport for supervision, supplies and transport of patients. However, vehicle availability at RHCs and BHUs is very limited, and in the rural areas there are few permanently usable roads. Lack of transport and easy communication prevents medical officers from visiting BHUs, and LHVs from visiting villages. Health inspectors use
bicycles in fair weather; while patients are transported to hospitals by charpoys, bullock carts, horses or tongas, taxis, buses or occasionally trains. Transport is not always available for DHOs who are forced to use vehicles allocated to assistant DHOs for regular visiting of RHCs. Some maintenance facilities for vehicles exist, but these do not prevent many vehicles from being out of action for long periods of time.

5.27 Information systems are complex and provide inaccurate and incomplete data. Much information presently collected is in need of review, e.g. LHVs are required to complete at least 20 different forms or registers, including an outdated list of 109 standard disease categories, which was adopted before 1900. Front-line health workers have little incentive to gather accurate information as they are remote from those who use it at higher levels in the system, whilst information necessary for the effective planning, control and evaluation of their work is not gathered. Different registers are held by medical officers, health inspectors, LHVs and medical assistants, and there are complex systems of compiling statistics on a monthly and annual basis. Also there are problems of non-availability of printed forms which lead to variances in presentation of data. About 20-30% of health workers' time is devoted to record keeping. These issues have been considered and recommendations made in a workshop on "Development of National Health Statistics Information System for Management of Health Services" held in Islamabad in July 1979, but no remedies are yet in effect.

5.28 Equipment and maintenance. It is easier to purchase equipment or obtain it from donor agencies than to pay for its subsequent maintenance. Thus RHCs can be quite well equipped with rarely used surgical instruments, and hospitals can have kidney dialysis and heart monitoring equipment, but problems arise with regard to maintenance and ensuring that equipment can be fully utilized. Surveys on the feasibility of appropriate health technology have been made (WHO assignment report "Possibilities in Pakistan for Health-related Technologies Development", February/March 1979) and recommendations made for the maintenance and repair of medical equipment (Dangroup International Report, January 1981). Again follow-up action is needed.

Water and Sanitation

5.29 Safe water and adequate sanitation are essential factors in the prevention of excessive illness and death from water-borne and water-washed diseases. The provision of sanitation and safe drinking water is carried out in different ways in each province through departments of housing and physical planning, public health engineering, irrigation and power, and also through communication and works departments coordinated by the Federal Ministry of Housing and Works. Potable water is available to 72% of urban and 20% of rural populations, while sewer systems are limited to parts of a few cities (mainly Islamabad, Karachi and Lahore). Sewage is drained into open channels and is mostly discharged without treatment into water courses or rivers. Sanitation of acceptable standard is available to 42% of urban and about 2% of rural populations. The stated objectives of provincial programs are to increase the number of wells and hand pumps; facilitate the building of latrines and drainage systems; work with health services in
identifying and preventing the causes of diarrheal and other water borne
diseases; and mount health education programs in schools, teacher training
colleges and agricultural training institutes. For a total outlay of Rs
14,000 m (or an average annual investment of Rs 1,300 m), the Government
has the following targets for 1990: increase in population coverage of
urban water supply from 72% to 100%; rural water from 20% to 66%; urban
sanitation from 42% to 59%; and rural sanitation from 2% to 13%. For the
Sixth Five-Year Plan, slightly lower targets have been set up. If
accomplished, this program would bring about a substantial improvement in
water and sanitation services. However, such a program would require
considerable improvements in manpower development and training,
institutional and management aspects, community involvement, and adoption
of appropriate technology.

VI. THE PRIVATE SECTOR AND SOCIAL SECURITY

Private Allopathic Medicine

6.01 There are approximately 6,000 private allopathic doctors in the
country, with one in eight (i.e. 500) newly qualified medical graduates
going into the private sector each year. Medical schools are now turning
out over 4,000 doctors per year, and by the end of the Sixth Plan period
half of these are expected to join the private sector. Most government
doctors (totalling about 7,000 at present) also do some private practice in
their spare time, rather than accept a non-practicing allowance of about
Rs 300 per month. Private doctors are to be found least in the rural and
peri-urban areas of greatest need (where about 50,000 traditional healers
cover the gap for curative services).

6.02 It is estimated that about Rs 3,000 m (or Rs 35 per capita) was
spent in FY82 on private allopathic medicine (including private hospitals),
and about Rs 1,200 m on traditional medicine. In addition, commercial
pharmacies are an important adjunct to the private system, with a very wide
range of drugs being sold openly without prescription. It is estimated
that private purchases of pharmaceuticals amounted to about Rs 2,300 m (or
Rs 27 per capita) in FY82.

6.03 It costs the Government about Rs 168,000 to train each doctor,
with tuition fees paid amounting to only about Rs 1,000 per doctor.
The Government also gives a range of special allowances and provisions to
doctors and hospitals in the private sector. For example, registered
medical practitioners working more than ten miles from the periphery of a
municipal committee or municipal corporation and a cantonment board are
exempted from income tax (except in the case of salaried doctors).

Production and Consumption of Pharmaceuticals

6.04 In FY82 the total domestic demand for pharmaceuticals and
medicines was approximately Rs 2,500 m according to government estimates,
although a recent estimate by the Government puts the 1983 figure at about
Rs 3,500 m. The market is now growing at an annual rate of about 25%.
Approximately 6,500 drugs are registered for sale in Pakistan registrations
are also withdrawn on grounds of toxicity. Prices for locally produced pharmaceuticals are fixed by the Registration Board established under the 1976 Drug Act.

6.05 Local production accounts for about 75% of the market, comprising mainly pharmaceutical formulation. There are presently about 225 enterprises registered under the 1976 Drug Act, and licensed to produce pharmaceuticals and medicines. However, ten firms, all belonging to multinational companies, control about 65% of the market. The Government is actively considering possible incentives to encourage the expansion of local production, especially basic manufacturing. Government policy is to allow the importation of pharmaceuticals that are not being produced domestically or in adequate quantity.

6.06 Most of the consumption of pharmaceuticals is in the private sector, with the Government accounting for only about Rs 200 m (8% total). Doctors generally lack sufficient knowledge of the therapeutic use of pharmaceuticals, and there is widespread excessive and inappropriate prescribing. Government purchases are made principally on a tender basis, but independently by each of the provincial governments and the federal government. Pharmaceutical distribution systems are undoubtedly weak, and shortages of pharmaceuticals in Government facilities are common. Local purchase accounts for about 20% of government consumption. Quality control needs to be improved, especially below the federal level, and there is no essential drugs list for government health facilities. All through, the purchasing, distribution, management and use of pharmaceuticals by the federal and provincial governments are seriously inefficient.

Traditional Medicine

6.07 There is renewed interest in some quarters in traditional medicine. In Pakistan this largely takes the form of greco-arab or tibb-e-unani medicine though there are also practicing homeopaths and vaids. There are estimated to be 6,000 qualified tibb practitioners, 35,000 hakims, 14,000 homeopaths and 440 vaids. About 65% of the population at some time use the services of traditional practitioners because they have faith in it, believe it suits their temperament, attribute efficacy to traditional medicines, or find it cheaper than allopathic medicine. After a Commission on Tibb in 1976, the Government gave official approval to tibb in 1977 recognizing eight tibb colleges and sanctioning research by the Council of Scientific and Industrial Research and the National Institute of Health. Boards of unani, ayurvedic and homeopathic systems have been set up for the maintenance of the cultivation of medical plants, drug production, training, and exchange of information. These have been recognized by both the Government and WHO. However, there is ambivalence towards the work of traditional healers, standards of practice vary, and there is concern about an increasing use of allopathic drugs by traditional healers. Further study is needed of the appropriateness and efficacy of many of their treatments, since it is not yet clear how traditional healers can most effectively work in concert with the established allopathic health system. On the other hand, the importance of TBAs has been recognized by the Government, which is now carrying out training programs to improve their hygienic practices and so decrease perinatal and maternal mortality rates.
6.08 In 1967 the Government introduced a scheme for industrial workers to provide medical care to workers and their dependents (averaging 5.7 per worker). At present there are three semi-autonomous "Employees' Social Security Institutions" (ESSIs) in Pakistan – in North West Frontier Province (NWFP), Punjab and Sind (though not in Baluchistan). In 1972 the employee's contribution to the plan was abolished, and the employer's contribution was set at 7% of wages. The benefits include treatment for sickness and injury, as well as minimal payments in cases of disability. The health coverage allows for general practitioner care including home visits, inpatient and outpatient specialist care in hospitals, and maternity coverage. Medical facilities managed by the ESSIs include dispensaries, injury treatment centers, MCH centers, polyclinics and hospitals. While some of these are located in remote areas, the majority are found near the industrialized urban centers.

6.09 Table 7 in Annex 1 shows the growth since FY72 in the number of employees insured, establishments, and contributions made to the social security program. The total number of employees insured fluctuated between 422,000 and 454,000 in the period FY74-82; while the total number of establishments and contributions in current prices rose steadily (at about 16% p.a.). The average number of workers insured per establishment fell from 129 in FY72 to only 35 in FY82. However, while per worker contributions grew at an annual compound rate of 13.6%, if allowance is made for inflation there was actually a slight decline in the value of contributions per worker.

6.10 Total contributions in FY82 may have been in the order of Rs 155 m. Of this amount, about 80% or Rs 124 m (or Rs 273 per worker) was spent on medical care, with the remainder split between administrative costs (12%) and various cash benefits (8%). Employers' contributions are deductible for tax purposes.

6.11 The medical services provided by the social security system are well utilized by the workers, but poorly used by their dependents (e.g. in NWFP in FY82, there were 6 attendances per worker compared to 0.6 per dependent). The standard of medical care under the scheme has not been evaluated; but an actuarial study recently done for the Sind ESSI apparently contains data on the costs, utilization and efficiency of services provided. The details of this study are not yet known.

VII. HEALTH FINANCING AND EXPENDITURES

Present Situation: Sources of Finance and Patterns of Expenditures

7.01 Public and private health care expenditures in FY82 amounted to about Rs 11,200 m, or 3.2% of GNP. This was equivalent to Rs 132 or US$13.30 per capita at the then prevailing rate of exchange. This is a relatively low figure for a developing country of Pakistan's per capita GNP.
7.02 Table 2 below gives a breakdown of total health expenditures in FY82 by source of financing and service provider. Private payments were by far the largest source of funds for the health sector (58%). A total amount of Rs 9,136 m was spent in FY82 on operating and maintenance expenditures on health (Table 8 of Annex 1). This is equivalent to 2.6% of GNP, or Rs 107 (US$10.85) per capita. Private payments accounted for 71% of the total and the Government for only 18%. Government operating and maintenance expenditures on health were equivalent to 0.5% GNP, which is relatively low compared to other developing countries.

7.03 Yearly over 90% of the budgeted government operating and maintenance allocations for health are spent at federal or provincial level. However, wastage of resources has resulted from lack of coordination of activities between different service providers, and from low quality of services resulting in low utilization, particularly in rural areas. The 1976 Accessibility Survey found significant differences among RHCs in unit costs per outpatient treated, and also per patient treated at various types of hospital. Although more recent data on this are not available, these indications of operational inefficiencies were supported by observations made by the mission.

7.04 Allocative efficiency, measured by the appropriateness of financial allocation in relation to achievement of stated goals and priorities, also appears low. For instance, only 9% of the FY83 budget of the Sind Health Department was for programs and activities below the level of the district hospital. Although it is difficult to indicate what would be an appropriate financial allocation for primary health care, the above amount is clearly insufficient to provide preventive programs and take care of minimum health needs of a large portion of the rural population. Another example of low allocative efficiency is the present pattern of expenditures in health manpower training. While the average cost of training a doctor is about Rs 168,000, the average cost of training an MT or LHV is about Rs 15,000. Since paramedical personnel can be delegated a large proportion of preventive and curative functions with appropriate supervision, the large number of doctors now coming out of medical schools appears inefficient in comparison with the low annual output of MT and LHV schools (in total about 1,000 per year). The pattern of the Government's operating and maintenance expenditures on health in urban and rural areas is also unbalanced: the Government is spending about 6 times as much per person for operating and maintaining health services in urban as in rural areas. The per capita operating and maintenance expenditures in FY82 in
Table 2: Total Health Expenditures by Source of Financing and Service Provider, FY82

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<tr>
<th>Source of Finance</th>
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<th>Provincial Government Revenue</th>
<th>Local Government Revenue</th>
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<td>(8.6)</td>
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<td>966</td>
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<td>600</td>
<td>6500</td>
<td>280</td>
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(10.8) (7.0) (8.6) (7.6) (5.4) (58.1) (2.5) (100.0)

Source: Planning Commission and mission estimates.
each of the four provinces were as follows: Baluchistan Rs 18.6, NWFP Rs 15.8, Punjab Rs 7.6, and Sind Rs 9.1. It is unknown, however, to what extent these differences could be attributed to variations in population density and remoteness.

Estimates of capital expenditures on health in FY82 are presented in Table 9 of Annex 1. The total amount of Rs 2,058 m was equivalent to 0.6% of GNP, or Rs 24 (US$2.45) per capita. The Federal Government was the largest source of funds, providing about 45%. Foreign aid accounted for only approximately 14% (of this amount about half was spent through the annual development program). A further 24% was spent by the Aga Khan Foundation, principally for the construction of the new hospital and medical school in Karachi. The remaining 17% was raised by local authorities. Government funding of capital expenditures on health in FY82 (Rs 1,278 m) was disproportionately high compared to its operating and maintenance expenditures (Rs 1,612 m). It is normally found in developing countries that annual capital expenditures in the health sector are equivalent to less than one third of operation and maintenance expenditures, whereas in Pakistan in FY82 the relationship exceeded two-thirds. This is partly the result of having the AHP financed under the annual development program; but it may also be the result of constraints on operating and maintenance budgets (particularly of the provincial governments), in contrast to relatively more liberally (federal and foreign aid) funded annual development programs.

The pattern of government capital expenditures can also be considered in terms of operational and allocative efficiency. Most of the capital funds approved for the health sector in FY82 were in fact spent. However, as in the case of operating and maintenance expenditures, substantial wastage of capital resources probably resulted from poor coordination of services. The cost-effectiveness of capital expenditures vis-a-vis health sector objectives is also low. In FY82 according to the Planning Commission, the breakdown of the initial allocations for health in the annual development program was as follows: preventive program 8.3%; rural health program 25.2%; hospital beds 32.1%; medical education and research 30.2%; and miscellaneous 4.2%. Although the picture was somewhat different in FY83 with the new AHP, still nearly half of capital expenditures were allocated to hospital beds and medical education and research (principally medical colleges).

Trends in Government Health Expenditures

Government operating and maintenance expenditures on health in current and constant prices since FY71 are presented in Table 10 of Annex 1. In current prices these grew at an annual rate of about 14-15%. The annual per capita growth rate was 11-12%. As a proportion of total government operating and maintenance expenditures, the allocation to health fell from 8% in FY76 to 5% in FY82; and as a proportion of GNP, it fell from 1% to 0.5% in the same period.

In real terms government operating and maintenance expenditures on health grew annually at only 0.9% over the whole period. However, both in the two sub-periods FY71-75 and FY76-82 real health expenditures declined; and it was only the large increase from FY75 to FY76
which raised the spending base for the latter sub-period, and produced a positive trend overall. With the exception of this one year, therefore, there has been a significant fall in the real value of government operating and maintenance expenditures in the health sector, and this has been exacerbated by the continuing population growth of 3% per year.

7.09 Federal and provincial government capital expenditures on health in current and constant prices since FY73 are presented in Table 11 of Annex 1. In current prices, these grew by 31% over the whole period; but the growth rates in the two sub-periods FY73-76 and FY77-82 were 87% and 15% respectively. In other words, there was a rapid increase in capital health expenditures up to FY76, but only a relatively modest increase annually after then. As a proportion of annual development programs, the capital allocation to health increased each year from FY73 to FY76, decreased each year from FY76 to FY79, and again increased each year from FY79 to FY82. In real terms, federal and provincial capital expenditures on health grew annually at 15% or 11% per capita. Again there was a substantial difference in the two sub-periods.

7.10 Federal and provincial capital expenditures on rural and preventive health programs are shown in Table 12 of Annex 1. The allocation to rural health as a proportion of the annual health development program was far higher in the period FY78-82 than in the period FY73-77 largely as a result of the BHS Project. The allocation for the preventive health program peaked in FY77 because of the dominance of the malaria program; but the downward trend after then was reversed in FY83 with the introduction of the AHP.

7.11 There is some evidence of a cyclical pattern in the ratio of capital to operating and maintenance expenditures. This ratio rose from FY73 to FY75 then fell from FY75 to FY79, and rose again from FY79 to FY82. It is possible that this pattern reflects the time lag between spending on capital programs and the later need for expenditures on the running costs of new projects; but probably a more likely explanation is that capital expenditures were deliberately constrained, especially in the middle period, because of lack of operating and maintenance funds.

VIII. REVIEW OF FIFTH PLAN AND SIXTH PLAN PROPOSALS

8.01 The preceding sections of this report contain a discussion and analysis of the existing health situation, government health objectives and strategies, and the role of the public and private health sectors. Before examining the constraints within which future health plans must be made, it is appropriate to review briefly the progress made in the Fifth Plan period.

8.02 The objectives of the Fifth Plan have been outlined above (paras. 4.01-4.02). These objectives were achieved to the following extent: (a) modern health coverage is now provided to about 72% (100%) of the population (i.e. to about 100% of the urban population, but only to about 60% of the rural population, if a 4 km criterion is used); (b) the

4/ Figures in brackets indicate the Fifth Plan objectives.
CDR was reduced from 14.0 to 11-12 (10.2); (c) the infant mortality rate was reduced from 105 to 90 (79); and (d) life expectancy increased for males from 54 years to 55 (60) years, and for females from 53 years to 54 (59) years.

8.03 Implementation of the physical infrastructure targets was not very successful. A total of 206 RHCs and 1,617 BHUs were built, out of respective targets of 625 and 4,596 (i.e. representing only about one third of the physical targets). For hospital beds, 5,308 out of the planned 25,820 were added. Part of the reason for this was the lack of capital funds--only Rs 4,584 m was actually spent on these projects, compared to a proposed allocation in the Fifth Plan of Rs 6,600 m. Furthermore, this latter figure was in 1978 constant prices; and if the actual expenditure is adjusted for inflation, then it was equivalent to only about 50% of the planned allocation.

8.04 With the exception of the CHWs/dais, the manpower training programs were more successful. About 76% of the planned total number of 13,512 doctors and dentists were trained in the Fifth Plan period; for nurses the proportion trained was 89% of the target number of 4,780 (however, many of these subsequently left the country); 55% of the target number of 24,886 paramedics/auxiliaries were trained; but only 18% of the target number of 50,371 CHWs/dais were actually trained.

8.05 Although not part of the original Fifth Plan, the AHP was introduced in the last year of the Plan period. By mid-1983, the EPI had managed to reach 5 m children altogether, compared to 3.5 m born each year. For the ORS production and distribution program, the target number of 5 m packets was reached in 1982-83. Finally, 5,000 TBAs were trained in 1982-83. Although there are outstanding issues concerning how the AHP will be sustained in the longer term, it must be acknowledged that the short-term program has been quite successful.

8.06 The Sixth Plan contains the following objectives: (a) to reduce the CDR from the present 11-12 per 1000 to about 9 per 1000; (b) to reduce infant mortality from 90 per 1000 live-births to 50 per 1000; (c) to increase life expectancy from 54-55 years to a little over 60 years; (d) to reduce the communicable diseases from the present 30% (sic) to a negligible level; (e) to protect all children and new-borns against the six preventable diseases of childhood, on a regular basis; (f) to eliminate third degree malnutrition among children; (g) to provide assistance during child-birth to every mother by trained birth attendants; and (h) to prevent, as far as possible, occurrence of disabilities and care of the disabled for better prospects of life.

8.07 The broad strategy to achieve these objectives includes the following: (a) emphasis on preventive care by protecting all children by poly-immunization against the six preventable diseases of childhood, diarrheal disease control and improved maternal care; (b) consolidation of existing facilities in contrast to expansion and development of rural health infrastructure (with expansion only envisaged for unserved areas); (c) each rural health facility to be manned by a qualified doctor and not by a substitute; (d) double-shift in the outpatient departments of all teaching, district and tehsil/taluka headquarters hospitals; (e) freezing of seats in medical colleges and stress on quality rather than quantity;
(f) rehabilitation of the disabled and stress on the prevention of disabilities; (g) government patronage of traditional medicine; (h) community involvement through local bodies in primary health care; (i) proper management training for health workers; (j) introduction of user charges; and (k) rapid expansion of the private health sector.

8.08 The physical infrastructure targets identified by the Government consist of the following: (a) conversion of 2,620 existing facilities into BHUs with doctors' residences; (b) construction of 2,665 new BHUs with attached residences for doctors and staff; (c) construction of 625 new RHCs; (d) construction of 1,715 doctors' residences at the existing BHUs; (e) provision of 4,000 teaching beds in existing medical colleges and another 4,000 in district and tehsil hospitals, and 1,220 beds in tehsil hospitals for referral care; and (f) hostel accommodation for house surgeons, physicians and trainee registrars.

8.09 In terms of the provision of health care, the Government's proposed targets are as follows: (a) protection of 24 m children against the six major killers of childhood; (b) protection of 8 m children against complications and mortality of diarrheal diseases through ORS; (c) protection of 1.25 m children suffering from third degree malnutrition; (d) provision of help during pregnancy and childbirth to all mothers, through 45,000 trained TBA's, backed by LHVs and female doctors; (e) rehabilitation of 1 m disabled people, and prevention of occurrence of disabilities; and (f) availability of primary health care to all, and referral care where needed.

IX. ISSUES AND CONSTRAINTS

9.01 There are various issues whose resolution would facilitate progress towards a public health system which is responsive to the country's health problems, and towards the development of a strong, complementary private health sector. This section describes the main constraints and examines their possible causes, as a background against which some recommendations are then made in the context of the proposals contained in the Sixth Plan.

Commitment and Understanding of Health Goals

9.02 Progress has been made towards setting national goals, but there are problems of incompatibility of goals with interests and needs of various population groups, and with the implementing capacity of the health system. This has resulted in the following problems and shortcomings:

(a) government spending on health has not proved to be sufficient either for capital expenditures, or particularly for operating and maintenance expenditures;

(b) professional health workers' aspirations have pointed in different directions from stated government goals, e.g. to the attractions of allopathic technological medicine and lucrative urban practice;
(c) public expectations have been most forcefully expressed by urban and higher income groups;

(d) pharmaceutical suppliers' lucrative interests often conflict with government set goals of simplified medical procedures and low-cost drugs; and

(e) the assumptions and values held by a majority of influential health professionals are different to those on which primary health care is based.

Planning

9.03 Particular problematic features of the planning process include: (a) centralized control, with the Planning Commission having a dominant role; (b) dependence on information collected and aggregated at the central level; (c) use of planning only as a means of enhancing incremental growth and capital spending; (d) separation of planning from implementation; (e) over-optimistic targets; and (f) emphasis on mid-term (five-year) planning, but not on longer-term (10-year) strategic planning, nor detailed operational (one-year) programs. In short, planning should be used and integrated into the normal managerial processes. Those who have responsibility for implementing plans need to be involved in drawing them up. This entails having plans in some form at every point in the health system. Thus every CHW should have a "village health plan", however rudimentary, which identifies the village's main health problems, sets out how they are to be tackled, and identifies priorities for the CHW (agreed between village leaders, the CHW and his or her supervisor). Similarly each BHU, RHC, hospital, training school etc. needs its own plan stating priorities and targets for improvement, which are then built up into provincial and national plans as part of the formal planning cycle. Planning thus becomes part of normal management, monitoring, evaluation, control and decision-making processes concerned with what to do in the future based on what has happened in the past. Planning should also be the process by which separate institutions and bodies, (e.g. donor agencies and professional councils) are challenged to set their own plans in relation to the national plan.

Organization and Management of The Public Health Sector

9.04 Styles and methods of management at the federal and provincial levels have a direct bearing on the management of services elsewhere. There are still many signs of a highly centralized bureaucratic approach, including the following: (a) some procedures have been in operation for many years without updating (e.g. checklists for supervision of rural health facilities, days required to be spent on touring); (b) many operational decisions are made at a high level in the system (e.g. on local budget allocations, and appointment, discipline and disposition of staff); (c) new services are super imposed on existing ones without a fundamental assessment of the whole situation; (d) in the absence of regular evaluations and reviews, criticism is difficult; (e) there is a low absorptive capacity for change; (f) the reasons for proposed changes are not always made clear, and detailed actions for their implementation are
not specific; (g) there is excessive reliance on formal channels of communication, rather than lateral communication within working groups; (h) response to problems and crises is often by movement of officials and departments at short notice; (i) there is an excessive reliance on paperwork for processing minor decisions, which leads to frustrations and delays; and (j) there is a general unwillingness to delegate.

9.05 The cataloging of these organizational problems is not meant to detract from much valuable work which takes place in health offices and facilities, or to ignore the complexities and difficulties of much health service administration. Conversely, it highlights that the managerial style and system have an important bearing on the effectiveness of health services. A recognition that many problems are at root managerial is a first step towards doing something about them, and suggests that a strengthening of the managerial outlook throughout the system would be beneficial. Certain factors militate against this, however:

(a) a concern for "administration" rather than "management", i.e. sticking to outmoded procedures and the status quo, rather than searching out problems and new opportunities, and devising ways to tackle them;

(b) a lack of recognition of the contribution which good management practice can make to health services. For example, doctors who occupy key positions in the health system have little appreciation of or training in management; federal and provincial health organizations are minimally involved in the activities of institutions such as the Civil Service Academy, National Institute of Public Administration, Administrative Staff College, Academy for Rural Development; and the potential of "lay" administrators is undervalued, with limited interchange between medical administrators and civil servants; and

(c) an uncertainty and unwillingness to deal with "unofficial" work practices. For example, it is difficult to talk in official circles about corruption, although it is a frequent theme in speeches of the President. An openness about its existence is needed, plus an emphasis on the highest standards of integrity amongst health officials, effective administrative systems of control, and a willingness to take action whenever corrupt practices are brought to light.

District Health Structure and Management

9.06 The role of the DHO should be viewed as crucial to the management of basic health services. The district is the key intermediate level in the health system for operational management of services; coordination with other agencies e.g. population, education, and district councils; and for planning and development of services in association with the provincial and federal organizations. However, at present there are serious constraints related to functions and scope of management of DHOs. For example, DHOs are currently restricted in their role; lack authority to hire or discipline district staff above grade 6; do not have freedom to reallocate budgets or staff within the district; are restricted in their ability to
travel; have limited discretion and decision-making authority; and have little involvement in the overall planning and design of services for the district as a whole. Their remuneration is low in relation to the responsibilities of the office and in comparison with medical superintendents of district hospitals. The existing responsibilities of DHOs cover a wide range of functions; they could be simplified and built into a new type of job, more focussed on planning, development, management and the creative building of health services.

9.07 Strengthening the district function should take into account the need to establish a new role model for DHOS. These professionals should combine knowledge and ability in epidemiology, management, and coordination, and be capable of taking initiative and appropriate decisions. The DHO should be able to coordinate services at the district level, especially hospital and basic health services, and also introduce health concerns in population, education, water, and sanitation programs underway in his/her district. The DHO should also foster a growing involvement of community representation through district councils and district coordinating committees.

Physical Resources

9.08 There is considerable scope for the development of appropriate technology in buildings and equipment, with an emphasis on local materials for buildings and furnishings, simple transport (particularly for women workers), simple energy sources (solar, wind, and biogas), aids for the handicapped, and patient record systems. Laboratory, medical and surgical equipment need to be assessed in terms of relevance and cost effectiveness. Much equipment (e.g. surgical instruments) is underused, poorly maintained and obsolete, suggesting the need for more rigorous purchasing procedures. There is also a need to standardize a lot of equipment, especially for major programs such as the AHP, and for each type of health facility.

Improvement and Expansion of Basic Health Services

9.09 Basic health facilities are within reach of about three-quarters of the population. In rural areas attention now needs to be concentrated on improving the quality of the health services, especially in regard to staffing, supplies and organizational and logistical improvements. In urban areas, 100% geographical coverage has been achieved, but there is relatively little effective primary care.

9.10 The intended posting of doctors, often poorly motivated and inappropriately trained, to BHUs as well as to RHCs should also be considered as a constraint, as it is more likely to hinder rather than improve primary care. According to the experience of other countries, doctors in rural service without appropriate pre-service training and adequate support do not succeed in running successful health services responsive to the needs of the people. Also, any failures in a doctor-based rural health service would prove expensive and make it harder to improve services at a later date.
BHS cell managers do not have regular access to key decision makers, lack the requisite authority and resources, (e.g. for travelling), and lack the potential to make necessary changes to tackle fundamental problems of basic health services. The cells need to be fully conversant with national and provincial policies, have a thorough knowledge of the effective working of IRHCs, and be able to take a lead in training and development activities.

Hospitals

Most of the government health budget is allocated to hospitals; yet relatively little attention is given to how effectively the budget is spent or how efficiently hospitals are managed. Underlying the problems confronting hospitals are the massive internal and external demands being made on them. Internally, there are pressures to practice a form of medicine unrelated to the disease pattern of the country or to the availability of finance, health manpower and back-up facilities; externally, public demand falls on hospitals because of inadequate provision of basic services. The role of hospitals in developing countries is being radically re-appraised, particularly in relation to primary health care. A much publicized international conference on this theme and sponsored by the Aga Khan Foundation at Karachi in November 1981, concluded that hospitals have an important role in fostering the growth of primary health care; in coordinating their efforts with those of government, primary health care workers and community representatives; in establishing their own departments of community health; in reorienting their activities to facilitate a shift in resources to primary care; in adapting medical curricula; and in promoting innovations and developments in primary health care. In these ways hospitals in Pakistan could re-appraise their role, reduce excessive demands on their facilities, and carry out the functions for which they are best fitted.

Accelerated Health Program

The AHP could be an effective way of focusing the attention of the health system on priority health needs; establishing detailed plans and programs over the next five years; ensuring effective contact with the country's population; tackling many managerial problems concerned with supplies, logistics, and organizational structures; enhancing cooperation between different levels and types of health facility; developing community participation; and improving systems such as registration of births and deaths. But the greatest challenge for the AHP administrators will be to ensure the transition from this program to a permanent health system under which regular immunization of children, oral rehydration for treating diarrheas and training of TBAs should be institutionalized.

Manpower Development and Training

There are serious imbalances between health manpower needs and manpower supply. There is a major need for stepping up the training of nurses and paramedical staff. Meeting these requirements would entail a doubling of training facilities each year for the next 4 to 5 years, and a
formidable effort for training TBAs. The supply of doctors far exceeds the
demand and there is now a problem of unemployment of doctors. The major
issue related to the medical profession concerns the appropriateness of the
training they receive in relation to the country's needs. There is at
present only an orientation program for doctors being assigned to the rural
health service, while a well designed in-service training program would
need to be established. Other issues concerning health manpower are
discussed below.

9.15 Paramedical Staff. Requirements for paramedical training would
entail a formidable effort equivalent to the expansion of medical training
institutions in recent years. Given an approximate need for 240 MTs in
each district, a realistic goal would be to work towards one MT school in
each district. Each school would have responsibility for the initial
training of MTs, and for providing a resource for their continuing support
and development. The goal has been accepted in the Sixth Plan, but it is
not clear how it is intended to be achieved.

9.16 Traditional Birth Attendants. Under the Sixth Plan, the policy
is to train only TBAs as community health workers. The proposed target of
training 50,000 TBAs will take some time to achieve, as there needs to be
adequate preparation and commitment in each village. TBAs cannot be
trained solely by MTs, though undoubtedly MTs should provide their major
support. RHCs, district offices, public health schools and hospitals will
also need to be involved in their training so that the skills and
competence of TBAs are continually increased. This has important
implications for the perceived functions of these institutions.

9.17 Nurses. Nursing training needs to be reviewed in relation to the
overall needs of the health sector. The nursing profession has had a low
image in the country, although this situation now seems to be improving.
Cultural factors have a bearing on this, but high nursing standards in some
hospitals and the experience in other Islamic countries show that such
factors can be overcome and ways found to release the untapped potential
for women in health care professions. A comprehensive study of the
organization and function of nursing in Pakistan could highlight the issues
more clearly and lead to action. Issues to be examined should include: the
image and status of nursing in society and in relation to other health
professions; approaches to recruitment and selection; staff/doctor/patient
ratios and means of determining establishments; standards and methods of
training, including the role and powers of the Pakistan Nursing Council;
management of the nursing function; and nursing and non-nursing duties.

Doctors

9.18 Hospital doctors. The practical training of doctors is
overwhelming based in hospitals, but there are insufficient teaching
beds for the number of medical students now being trained. So students
suffer from a shortage of patients on whom to practice their clinical
skills, and also from a shortage of specialist teachers. The Sixth Plan
proposes the establishment of 8,000 additional teaching beds; but the above
problem would also be somewhat reduced by a proposed freeze in the number
of medical students.
9.19 Private doctors in general practice. Approximately 12% of doctors settle each year in the private sector. In order to absorb the present high number of doctors who cannot now or in the future be employed by the Government, the private sector would need to attract about 50% of the new doctors (or 2,000 doctors p.a.) by the end of the Sixth Plan period. To alleviate this situation, the Government has stated its intention to encourage group practice clinics through special inducements and loans to enable doctors to build houses and clinics, particularly in rural areas. However, a more detailed analysis is needed of the functions of private doctors in terms of general practice, service to a defined population, and provision of a preventive and promotive service. There is also a need for medical schools to build up a curriculum related to practical training for general practice, including the development of diagnostic skills and appropriate treatment for non-hospital patients. The College of General Practice should have an important role in extending this important aspect of medical education.

9.20 Doctors for the basic health system and public health. Doctors are currently insufficiently trained to work in the basic health sector, which is a natural training ground for later career posts as, e.g. a DHO. Knowledge and skills needed are those of social and community development, community diagnosis and epidemiology, preventive health, organization and management, teamwork, and capacity and willingness to transmit skills to community workers and to support them in their work. Proposals have been produced for such training by the Public Health Association of Pakistan and the College of Community Medicine, Lahore. These would entail a broader based training, field work in rural areas, and the involvement of practicing public health doctors as trainers. Another constraint for doctors working in public health is that they have distinct disadvantages vis-a-vis colleagues working in hospitals and performing curative functions, including lower professional status and remuneration.

9.21 Doctors in management and administration. Given the heavy involvement of doctors in management and administration, there is a need to ensure that they are properly equipped to carry out these functions, against a background of effective management and health services research. Medical schools alone cannot carry out this task, but they can work closely with existing management institutions to develop new curricula, and relate them to the rest of the teaching program for both undergraduate and post-graduate students. It is encouraging to see that the Sixth Plan contains a recommendation for the establishment of an institute for health services administration.

9.22 Role of medical school. The health system evolving in Pakistan relies heavily on basic and continuing training of every category of personnel. Medical schools should be natural centers for the development of curricula, integration of the best and most appropriate educational technology, support of other training institutions, and specialist and in-service trainers. They should also be able to build up capacity and competence in the fields of general practice, basic health, management, and health education and training, while increasing the quality rather than the quantity of hospital based clinical training. As an immediate step, training programs in medical schools could also be adapted, possibly with a common basic training for all students, followed by specialization in one of the above categories.
9.23 In view of the present situation concerning the medical profession, the Pakistan Medical and Dental Council -- the body that sets standards and monitors the work of medical schools -- is faced with decisions on quality of medical training, and the acute problem of appropriateness of the current hospital bed/medical student ratio. Recently there have been two high-level government committees investigating the training and employment of doctors. However, the Government needs to address some broader policy issues, such as the deficiencies in public health training for its doctors, the low relevance of doctor training for the country's health needs, the lack of incentives for doctors to serve in the public health sector, and the need to contain future investments in medical schools and hospitals vis-a-vis investments in primary health care. In particular the basic health care services concept that the Government has adopted makes it essential that roles for doctors be changed. The appropriate resolution of these issues concerning doctors is an essential step towards an effective public health care system.

Support Systems

9.24 Pharmaceuticals. There is a case for increasing the total amount of pharmaceuticals available in government facilities, but this is unlikely to be effective by itself. Greater attention needs to be given to the establishment of drug schedules in all health facilities; control to ensure that prescribing is only from a standard list except in defined circumstances; and an improved distribution system. By supplying fixed amounts of drugs at regular intervals, based on the targeted needs of facilities, the need for estimating requirements can be reduced; delays in indenting, procurement, delivery and distribution avoided; and advantage taken of more competitive purchasing, and local manufacture and packaging.

9.25 Information, communications and transport. The problems in these support systems have been discussed above (paras. 5.26 and 5.27). Those who collect information should do so as a normal part of their duties rather than as an additional task; and they should have a stake in its accuracy and validity and methods of collection should be simplified. Information collected at BHUs should be used to monitor and organize the activities of the unit; RHCs would aggregate the information, relating it to information used to monitor and manage the RHC; and in turn this process would be used for the district as a whole. The district would then become the key level for aggregating and interpreting data for planning purposes, submitting relevant reports to provincial and national levels, and providing detailed information when needed (e.g. for surveillance) by sample surveys or special studies. Information use at district level will require the services of an appropriately trained statistical officer.

9.26 Effective communications need to be as interpersonal as possible so that workers can discuss their problems and receive continuing support, training and encouragement, and with a greater emphasis on lateral and upwards communications. Functional analysis of tasks at each level should lead to clear definitions of work content for each worker; requirements in terms of supplies, drugs, clinic space and time; and necessary frequency of visits for prevention, promotion and supervision. This would also lead to an analysis of transport requirements, in terms of modes of transport, frequencies, servicing and repairs.
Financial Feasibility of the Public Health Investment Program

9.27 Table 13 of Annex I shows the proposed physical targets for the health sector in the Sixth Plan, and provides estimates of the capital costs of these items. In total the capital costs are estimated at Rs 14,600 m which is approximately three times the total actual capital health expenditure in the Fifth Plan period. It is proposed that the share of the Government's total investment program allocated to the health sector increase from 3% in the Fifth Plan to 4.9% in the Sixth Plan. It should be noted, however, that the costing of the health projects has been done in 1983 constant prices, whereas the macro-economic framework of the Sixth Plan is in current prices (i.e. including inflation). The health investment program as presently conceived would therefore require an even larger allocation of the total development program.

9.28 Although only a relatively small proportion of past capital expenditures in the health sector has been financed from external sources, the affordability of the health investment program in the Sixth Plan will depend partly on the future availability of foreign aid. Even though some components of the investment program may in principle be suitable items for external finance, others are not obviously attractive candidates. For example, an amount of Rs. 4,156 m has been allocated in the Sixth Plan for hospital beds, equivalent to 28% of the total health investment program. External assistance agencies would find it difficult to justify this investment as a priority for strengthening the health system. At present the Government (excluding the military) has about 41,400 beds (including 13,000 in teaching hospitals, 8,200 in district hospitals, 4,700 in tehsil hospitals, 3,000 in RHCs, and 12,500 in dispensaries, etc.). There are also about 10,000 private beds, giving a total of about 51,400 beds (or one bed per 1,750 population).

9.29 The financial feasibility of the public health investment program must also be appraised from the point of view of the required operating and maintenance expenditures. Table 14 of Annex I shows the Government's estimates (Rs. 3,340 m) of the required operating and maintenance expenditures for the end of the Sixth Plan period. A number of comments may be made about these estimates. First, the estimates are apparently made in 1983 prices (unlike the Sixth Plan's macro-economic framework) and, allowing for 6.5% annual inflation over the Plan period, this would be equivalent to Rs. 4,576 m in 1988 in prices then prevailing. Second, if the original costing figures are accepted as accurate, then an annual increase of 20% would be required in the combined health budgets of the four provincial health departments and the Federal MOHSW (i.e. from a level of Rs. 1,299 m in FY83). This may be compared to a trend growth rate of total government operating and maintenance expenditures on health of 2.8% p.a. over the period FY71 to FY82. If only federal and provincial government expenditures are included, on the other hand, these grew in current prices from Rs. 646 m in FY79 to Rs. 1,299 m in FY83 - i.e. at a rate of 19% p.a. in current prices, but only 7.6% p.a. when account is taken of inflation. The projected requirement of 20% real growth for the Sixth Plan period is therefore clearly very ambitious.
9.30 The real growth rate that is actually achieved in the operating and maintenance budgets for the health sector will depend on the actual growth of the economy, the share of the economy accounted for by the Government, and the share of the government budget allocated to the health sector. The Sixth Plan projects an average annual growth of 6.5% for GDP (6.3% for GNP), but the public sector is also expected to account for a decreasing proportion of the economy. Although the Government has indicated that it wants to allocate a larger share of its resources to the social sectors (including health), no indication has been given of the extent to which the proportion of the recurrent budget allocated to the health sector will increase. In order to accommodate the above anticipated expenditure requirement of Rs 4,576 m, the proportion of public consumption expenditure allocated to health would have to increase from 3.0% (i.e. Rs 1,299 m out of Rs 43,500 m) in FY83, to 5.4% (i.e. Rs 4,576 m out of Rs 84,500 m) in FY88. Furthermore, even assuming that the necessary additional operating and maintenance resources are available to the health sector, there remains the crucial question of their allocation between the federal and four provincial health departments. Only if the funds provided match the respective responsibilities will the required services be able to be financed.

User Charges in the Public Health Sector

9.31 At present user charges vary among the provinces. While there are no outpatient fees in Baluchistan, the charge per outpatient treatment is Rs 1 in Punjab, Sindh and NWFP. For inpatients there is a Rs 5 registration fee in NWFP, while there is a graduated scale of payments (dependent on income) for food provided for inpatients in Punjab. In Sindh a fee of Rs 2 is charged per inpatient day. Fees are charged for private patients in government facilities in all of the provinces, but these are considerably below the cost of providing the service. Total revenue from health fees in FY82 was probably about Rs 40 m, equivalent to about 2% of operating and maintenance expenditures on health by federal, provincial and local governments.

9.32 The Government has announced its intention to increase cost recovery in the health services. Fees for outpatient consultations in urban areas will be raised to Rs 5 per treatment by the end of the Sixth Plan period, and in rural areas the fees will be half as much as in the urban areas. For inpatients there will be Rs 10 admission charge, and a further Rs 10 charge per inpatient day (half of which will go towards the costs of diets). There will also be charges for x-ray and laboratory services. However, indigents will have their fees paid through Zakat funds, while no fees will be charged for preventive services.

9.33 The Government estimates that the revenue from these measures will amount to about Rs. 1,250 m by the last year of the Sixth Plan period. If this is so then cost-recovery might be equivalent to about one quarter or even one third of the operating and maintenance expenditures. From the present figure of only 2% this would clearly be a major increase, but great efforts must still be made to ensure that service delivery is efficient and cost-effective. Optimal use must be made of both financial and human resources, especially in the hospitals which consume the bulk of operating and maintenance budgets. Particular attention needs to be paid
to cost containment through controlling average lengths of stay for particular diseases, using outpatient treatment whenever possible, having patients treated at the lowest possible level of facility, and preventing over and inappropriate prescribing of pharmaceuticals.

**Private Sector: Allopathic Medicine**

9.34 The present system of private practice is unsatisfactory in a number of respects. The problem is seen by the Government primarily in terms of the existence of unemployed doctors—estimated at about 1,000 in 1982. Most of these are young graduates with limited experience, who are finding it difficult to establish private practice because banks are unwilling to extend loans to them due to lack of collateral. The Government has approved recently a series of new financial subsidies and incentives. However, this approach may prove expensive as well as inequitable and quite inefficient, if it is not accompanied by measures to control quality of services.

9.35 There is also considerable promotion of private practice by government doctors—for example through persuading patients attending government facilities to go to a private clinic after regular official hours. Patients are thus made to pay for a private consultation on the understanding that they will then receive better and faster treatment (especially if they require to be admitted as an inpatient in a government hospital). For the Government to improve the management of its hospitals and the availability of quality care, especially if there is an increase in the volume of referral work, it would need to address itself to the conflict created through private practice by government employed doctors. Although it may not be feasible to discontinue private practice by government doctors altogether, an intermediate solution could be to raise substantially the non-practicing allowance (from Rs 300 to, say, Rs 1,000 per month) and end private practice by junior doctors and/or those appointed in the future. Resistance to such changes from the government doctors would in this way be minimized; young doctors now facing stiff competition from private doctors in urban areas might welcome a steady and substantial non-practicing allowance from the Government, and the private sector would also approve of this measure. The most important likely consequence of such a change would be an improvement in the quality of public health service provided, and an increase in utilization of government health facilities. (The cost of an additional Rs 700 per month for the existing 7,000 government doctors would be Rs 58.8 m, equivalent to 3.6% of the Government's operating and maintenance expenditures on health in FY82.) If any private practice by government doctors is allowed to continue, improvements in hospital management procedures (for example through peer review of clinical practices) should also be considered in order to reduce abuse of the system.

9.36 There are three other constraints operating in the private health sector in Pakistan. First, because of the system of financing on a fee-for-service basis, doctors have no incentive to provide comprehensive (especially preventive) health care, nor minimize the number of attendances/procedures per patient. Second, there is a serious lack of quality control over the curative care provided. And third, there is little control over fees charged. Admittedly, especially with the
existence of unemployed doctors, one would expect the functioning of the market to exercise at least some influence over standards of private practice and also pricing behavior, but the public lacks information on the quality of services provided and on available options for health care.

9.37 Some discussion has recently begun in the country on the possible introduction of voluntary health insurance. However, there are some issues that should be considered before adopting a favorable policy toward these schemes. First, it does not provide incentives for comprehensive, including preventive, health care; second, the system is vulnerable to cost escalation due to risk of over-treatment (although this may be lessened through co-payment deductibles); third, these schemes are very expensive and affordable only by a small section of society. (For example, with premia of Rs 5,000 per household and assuming that not more than 5% of household income can be afforded as a premium, only households with more than Rs 100,000 per year would be eligible; these households represent less than 4% of the total.) Nevertheless, if commercial insurance firms were prepared to operate such a scheme, some of the large semi-public organizations might be interested in joining on a group basis (either paying premia in full or jointly with their employees) as in FY82 they spent an estimated Rs 800 m on providing health services themselves.

9.38 In contrast the alternative model of the health maintenance organization appears more feasible and affordable by individuals. Under such a system a fee is paid in advance (for example on a capitation basis) by individuals to a group of doctors who in turn agree to provide a specified range of health services. A major advantage of this model is that the doctors have an incentive to minimize visits. Assuming that a single doctor can handle 2,000 patients and that his gross annual costs including salary are Rs 100,000, then the annual per capita contribution would only need to be Rs 50 (excluding cost of pharmaceuticals). At present most doctors in private practice earn considerably more than the amount likely to be earned on the above basis, and even government doctors who do some private practice can earn similar amounts. However, the situation facing doctors will change significantly in the next few years, with over 4,000 new graduates each year and severe limitations on the prospects of government employment. Particularly given the existing situation of oversupply of doctors in urban areas already, it is therefore believed that such schemes could well become popular there.

Social Security

9.39 At present about 10% of the industrial work force is covered by the social security scheme. In general it appears to be a popular scheme among the members, and there has been some discussion about whether it should be encouraged to expand further. In evaluating the arguments for and against, the mode of financing may be considered separately from the use of resources.

9.40 Concerning the mode of financing, although the employers' 7% contribution increases the cost of labor and it is the Government which effectively finances approximately half of the total costs through tax rebates, the system of financing through payroll taxes is administratively convenient. It also places some responsibility on employers for the health
of their workers, and their contributions (excluding tax rebates) represent a net addition to the resources for health in the country. Other advantages of the system are that it provides protection to industrial workers facing certain occupational hazards. These industrial workers contribute to economic growth through their work and their health should be preserved. There are, however, problems of possible "excessive" demand for services because there are no user charges at the point of service delivery, and some duplication of services with other service providers.

X. **RECOMMENDATIONS**

10.01 The Sixth Five Year Health Plan for Pakistan is based on a good strategy consisting of using the development of three preventive programs--EPI, ORS, and training of TBAs--as lead activities in addressing sectoral problems and constraints. However, it falls short of tackling some major issues that need to be resolved to integrate these programs successfully into the health system, and to enable the attainment of other major Plan objectives. These include issues in:

(a) the planning and monitoring process;
(b) organizational arrangements;
(c) manpower development and training;
(d) support systems;
(e) health financing and expenditure patterns; and
(f) private health sector and social security.

**Planning and Monitoring Process**

10.02 The issues and constraints confronting the health system in Pakistan are amenable to improvement and change, but the process needs to be planned with due regard to priorities, feasibility, timing, cost and sequence. It would be desirable to make such a change process for the health system coincide with the initiation of the Sixth Plan. This could be a joint effort between the Planning Commission, the MOHSW, the provincial health departments, the medical schools and other paramedical schools. A suggested approach would be to create a "Joint Health Planning and Development Unit" under the Federal MOHSW with overall responsibility for coordinating and monitoring the processes required for implementation of the Sixth Plan. This Unit would be made up of individuals with responsibility for operational planning and execution, selected and seconded from the above mentioned government organizations and teaching institutions for a period of, say, two years. The unit could have access to consultancy expertise of systems analysts, management/organization and development specialists, and primary health care and health service management professionals. At the end of the Sixth Plan period, the Unit could be fully established as the Planning and Evaluation Section of the Federal MOHSW. Functions of the Unit could include:

(a) to constitute groups to study problems, make recommendations on specific issues and subjects, and assist in initiating action;
(b) to ensure the preparation of detailed plans of operation for each program, with targets and objectives for each area of activity;

(c) to agree on organizational or individual responsibilities for achieving specific objectives and targets;

(d) to monitor actions in relation to each area of activity, in accordance with agreed operational plans;

(e) to review progress regularly and take appropriate action; and

(f) to maintain close access and direct accountability to the Secretary of the MOHSW and the Chairman of the Planning Commission.

10.03 The recommendations that follow could be considered as suggested guidelines for the development of a plan of action for the proposed Unit. The recommendations are presented in the same order in which the issues and constraints were discussed in the previous section.

10.04 Commitment and understanding of health goals. There is a need to define more clearly the country's health goals. At the same time, an effort should be made to increase commitment to these goals by leaders, health workers and the public; and to maintain a continuing debate and discussion to clarify these goals and ensure understanding, acceptance and incorporation of them into health activities. This would help to ensure a necessary fundamental shift in the attitude of health workers toward the need to work with the community, and ways to do so.

10.05 Planning. As part of the institution of a dynamic planning process, the following actions are desirable: (a) to emphasize procedures for setting priorities in relation to national objectives; (b) to increase DHO participation in district planning; (c) to develop plans at every level from CHWs upwards; and (d) to link planning with operations and services through a "planning/learning" approach.

Organizational Arrangements

10.06 Organization and management of the public health sector. An organizational analysis of the public health sector is needed to identify structural and management problems and to develop approaches to deal with them. A start could be made in one or two provinces (e.g. Sind, where the Secretary of Health expressed interest in having a review of management arrangements). Such an analysis would be a prerequisite to the definition of organizational links between the BHS and the AHP. Arrangements for technical cooperation and training between the provincial health departments and local management institutes should also be explored.

10.07 District health structure and management. On the basis of the findings of the organizational analysis of the public health sector, strengthening the functions of DHOs could be accomplished through redefining their role and tasks in relation to service objectives; identifying present strengths and weaknesses of the system; developing
joint goals for BHS and AHP cells, and establishing working procedures to accomplish those goals; establishing procedures for involving local bodies (starting with district councils) in health decisions by communities; institutionalizing the relationship between DHOs and district hospital superintendents, and defining their respective functions vis-a-vis the community for whose health they are commonly responsible; considering the establishment of a training facility for MTs in every district; and holding appropriate training courses for district managers.

10.08 Improvement and expansion of basic health services. The main issues needing resolution in this area are a clarification of roles and strengthening of BHS cells; coordination between BHS and AHP programs; and a careful study of the consequences of posting of doctors in BHUs, especially its effects on the whole BHS concept and the role of MTs.

10.09 Hospitals. In order to review the medical and managerial constraints affecting hospitals, a working group of senior health service and hospital officials should: (a) review and take action on the role of hospitals in relation to primary health care; and (b) identify major problems of management and clinical quality of services in hospitals and recommend specific actions, which could include organizational revisions, management training, clinical refresher training and regular peer reviews of clinical work.

10.10 Accelerated health program. In order to use this program as a spearhead for changing the public health system and making it responsive to the country's health needs, all decisions concerning it (including development of administrative procedures, training of personnel, and work with the community), should first be assessed for their impact on the overall health system.

Manpower Development and Training

10.11 The BHS concept requires a simplified manpower structure based on paramedical personnel. A priority decision is needed to increase the tempo of training paramedical staff, and to obtain cooperation and introduce changes in the existing paramedical schools so that all training institutions may contribute positively toward the BHS program. The following actions should be considered as steps to rationalize the development of paramedical manpower:

(a) Medical technicians. Establishment of MT training schools in each district, as a priority for the strengthening of DHOs and development of the BHS program, making use of the standards and experience of MT schools already established;

(b) TBAs. Implementation of local projects using TBAs (e.g. in association with the Academy for Rural Development) drawing on the successful experience of other countries;

(c) Nursing. Commissioning of an independent study on the nursing profession; and
(d) Doctors. Implementation of an independent, objective study to examine the role of medical education in relation to the country's health needs, and initiate appropriate changes in curricula and courses.

10.12 Pakistan Medical and Dental Council and Pakistan Nursing Council. A review is needed of their functions, responsibilities and operation. Recommendations should be made on how to improve their effectiveness in guiding health manpower development in the country.

10.13 Institutes of public administration. Cooperative arrangements need to be made between provincial health departments and local management institutes for training of health managers.

Support Systems

10.14 Pharmaceuticals. An improvement of the logistic system could be achieved through a combination of organization and management studies, problem-solving workshops and in-service training by provincial health departments.

10.15 Information. A simplified health information system, responsive to management needs and with the district as a key level for data aggregation and use, would assist considerably in identifying and resolving problems in health service delivery.

Health Financing and Expenditure Patterns

10.16 Estimates have been presented above (paras. 7.01-7.11) of health expenditures in FY82. It is recommended that further analysis is undertaken by the Government on: (a) the volume and incidence of private expenditures; (b) expenditures on pharmaceuticals, including their cost-effectiveness and relationship to requirements; and (c) government expenditures on hospitals, and especially the scope for improving operational efficiency. The Government should also re-estimate the capital and operating/maintenance costs of the health investment proposals, and compare them with the likely availability of funds.

Private Health Sector and Social Security

10.17 Private sector allopathic medicine. In order to improve the conditions of the present system of private medical practice so that it may become an efficient complement to the public health system, the Government needs to address itself to the following issues: (a) the future of private practice by government employed doctors; and (b) possibilities for the introduction of private health insurance and health maintenance organizations.

10.18 In order to avoid or minimize conflicts between private practice by government doctors and measures to improve the quality of services in public health facilities, the following alternatives should be considered: (a) the discontinuation of private practice by government doctors
altogether (which may be difficult); or (b) a substantial increase of the non-practicing allowance (from Rs 300 to, say, Rs 1000 per month), and the end of private practice by junior government doctors and/or newly appointed doctors. Particularly if alternative (b) is adopted, it would be essential to improve hospital management procedures (for instance through peer review of clinical practices) in order to reduce abuse of the system.

10.19 On possibilities of private health insurance, the constraints for the Government to consider in formulating its policy are whether such a system: (a) provides incentives for comprehensive and preventive health care; (b) is vulnerable to cost escalation due to risk of over-treatment; (c) is affordable only by a small section of society (e.g. those with incomes over Rs 100,000 per year); and (d) is of interest to commercial insurance firms. Further consideration should also be given to the health maintenance organization model.

10.20 Such health insurance systems may also be of interest to public sector institutions, which are currently spending heavily in providing medical care for employees and their dependents. They might be interested in joining on a group basis (either paying premia in full or jointly with their employees). Costs could be contained by making patients pay a deductible per treatment, and by setting limits on the amounts to be reimbursed per procedure.

10.21 Social security. Before any firm conclusions can be drawn about the proposed future role of the social security program, it is recommended that the following areas are investigated further: (a) the role of the social security program in general internal resource mobilization efforts; (b) whether the existing demand by workers for health services is excessive; and (c) the efficiency of service provision. In the light of the findings, more thought should be given to the possibility and desirability of introducing alternative or complementary financing systems (for example user charges in the form of co-payments for curative services); and to ways in which the efficiency of service delivery could be improved (for example, through a change in the mix of health personnel used).
Statistical Annex

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Table 13: Estimated Capital Costs of Proposed Physical Infrastructure Targets for the Health Sector in the Sixth National Plan
Table 14: Estimated Operating and Maintenance Expenditures for the Health Sector (1988)
Table 3: Health Facilities by Province (1983)

<table>
<thead>
<tr>
<th>Facility</th>
<th>Punjab</th>
<th>Sind</th>
<th>NWFP</th>
<th>Baluchistan</th>
<th>FATA</th>
<th>A.K.</th>
<th>N.A.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total Hospital Beds</td>
<td>24,729</td>
<td>16,448</td>
<td>5,101</td>
<td>2,594</td>
<td>1,068</td>
<td>873</td>
<td>587</td>
<td>51,400</td>
</tr>
<tr>
<td>2. Rural Health Centers</td>
<td>190</td>
<td>76</td>
<td>49</td>
<td>28</td>
<td>5</td>
<td>7</td>
<td>19</td>
<td>374</td>
</tr>
<tr>
<td>3. Basic Health Unit</td>
<td>1,107</td>
<td>41</td>
<td>376</td>
<td>123</td>
<td>32</td>
<td>36</td>
<td>-</td>
<td>1,715</td>
</tr>
<tr>
<td>4. Sub-Centers</td>
<td>460</td>
<td>87</td>
<td>58</td>
<td>27</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>632</td>
</tr>
<tr>
<td>5. Dispensaries</td>
<td>1,282</td>
<td>710</td>
<td>417</td>
<td>317</td>
<td>169</td>
<td>268</td>
<td>112</td>
<td>3,275</td>
</tr>
<tr>
<td>6. MCH Centers</td>
<td>435</td>
<td>264</td>
<td>93</td>
<td>49</td>
<td>9</td>
<td>14</td>
<td>3</td>
<td>867</td>
</tr>
<tr>
<td>7. Immunization Centers</td>
<td>253</td>
<td>199</td>
<td>153</td>
<td>31</td>
<td>-</td>
<td>30</td>
<td>13</td>
<td>679</td>
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</table>

Source: Planning Commission.
Table 4: Hospitals, Beds and Other Health Facilities in Urban and Rural Areas, 1983

<table>
<thead>
<tr>
<th>Location</th>
<th>Type of Facility</th>
<th>Hospital Beds</th>
<th>RHC</th>
<th>BHU</th>
<th>Sub-centers</th>
<th>Dispensaries</th>
<th>MCH Centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td></td>
<td>48,362</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,664</td>
<td>563</td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td>3,038</td>
<td>374</td>
<td>1,715</td>
<td>632</td>
<td>1,611</td>
<td>304</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>51,400</td>
<td>374</td>
<td>1,715</td>
<td>632</td>
<td>3,275</td>
<td>867</td>
</tr>
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</table>

Source: Planning Commission.
Table 5: Estimates of Numbers of Staff Employed, Training Institutions and Selected Categories of Annual Training Outputs, 1983

<table>
<thead>
<tr>
<th></th>
<th>In Post (1983)</th>
<th>No. of training institutions</th>
<th>Annual training output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>16,501</td>
<td>16</td>
<td>4,260</td>
</tr>
<tr>
<td>Nurses</td>
<td>5,530</td>
<td>44</td>
<td>972</td>
</tr>
<tr>
<td>Midwives</td>
<td>4,705</td>
<td>46</td>
<td>359</td>
</tr>
<tr>
<td>LHV</td>
<td>3,473</td>
<td>10</td>
<td>312</td>
</tr>
<tr>
<td>Med. Technicians</td>
<td>2,000</td>
<td>26</td>
<td>600</td>
</tr>
<tr>
<td>Health Inspectors</td>
<td>1,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dispensers</td>
<td>16,161</td>
<td>50</td>
<td>1,500</td>
</tr>
</tbody>
</table>

Note: Of the 16,501 doctors, about 9,500 were employed by the Government, about 6,000 were in the private sector, and the remainder are assumed to have been unemployed.

Source: MOHSW.
### Table 6: Trained Staff Needed to Meet Planned Requirements

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td>5,530</td>
<td>10,235</td>
<td>21,718 (^1)</td>
<td>11,483</td>
<td>6,655</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,828</td>
</tr>
<tr>
<td>Midwives</td>
<td>4,705</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LHVs</td>
<td>3,473</td>
<td>3,473</td>
<td>17,996 (^2)</td>
<td>14,523</td>
<td>4,560</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9,963 (^3)</td>
</tr>
</tbody>
</table>

Notes: Of the 16,501 doctors, about 9,500 were employed by the Government, about 6,000 were in the private sector, and the remainder were unemployed.

1/ Assuming a total of 86,870 beds (i.e. 56,870 government beds and 30,000 private sector beds), and a nurse/bed ratio of 1/4.

2/ Assuming 2 per BHU (of which 7,000 are expected), and 4 per RHC (999).

3/ This is even assuming that all the nurses are available to the public sector. In practice, however, many leave to work abroad.

Source: Mission estimates.
### Table 7: Employees Insured, Establishments, and Contributions to the Social Security Program FY71 – FY82

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number of Employees Insured</th>
<th>Total Number of Establishments with Workers Insured</th>
<th>Total Value of Contributions (Rs m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971/72</td>
<td>362,014</td>
<td>2,805</td>
<td>36.7</td>
</tr>
<tr>
<td>1972/73</td>
<td>416,234</td>
<td>3,861</td>
<td>46.8</td>
</tr>
<tr>
<td>1973/74</td>
<td>449,374</td>
<td>4,748</td>
<td>51.4</td>
</tr>
<tr>
<td>1974/75</td>
<td>445,745</td>
<td>5,907</td>
<td>59.0</td>
</tr>
<tr>
<td>1975/76</td>
<td>438,649</td>
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<td>1976/77</td>
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<td>1977/78</td>
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<td>1978/79</td>
<td>422,691</td>
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<tr>
<td>1979/80</td>
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<td>124.8</td>
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<tr>
<td>1980/81</td>
<td>434,597</td>
<td>12,707</td>
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<tr>
<td>1981/82</td>
<td>454,160</td>
<td>12,945</td>
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**Note:** Value of contributions in 1981/82 is a mission estimate.

**Source:** Social Security Advisor, Federal Government
### Table 8: Operating and Maintenance Expenditures by Source of Finance and Service Provider (Rs m), FY 82

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Federal Government Revenue</th>
<th>Provincl Government Revenue</th>
<th>Local Government Revenue</th>
<th>Employers' Contributions</th>
<th>Donations</th>
<th>Private Payments</th>
<th>TOTAL</th>
<th>% of Total</th>
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<td></td>
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<tr>
<td>- Other Ministries</td>
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<tr>
<td>(Total)</td>
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<td></td>
<td>(202)</td>
<td>(2.2)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- Baluchistan</td>
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<td>80</td>
<td>0.9</td>
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<tr>
<td>NWFP</td>
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<td>1.9</td>
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<tr>
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<td>(Total)</td>
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<td>(8.6)</td>
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<td></td>
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</tr>
<tr>
<td>Local</td>
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<td></td>
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</tr>
<tr>
<td>- Urban</td>
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</tr>
<tr>
<td>Rural</td>
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<tr>
<td>(Total)</td>
<td>(202)</td>
<td>(786)</td>
<td>(624)</td>
<td>(6.8)</td>
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<tr>
<td>Semi-public organizations and other employers</td>
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<td>800</td>
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<td>Social security</td>
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<td>Missions and voluntary bodies</td>
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<td>Doctors and Hospitals</td>
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<td>2300</td>
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<td>(71.1)</td>
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<td>786</td>
<td>624</td>
<td>856</td>
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<td>6500</td>
<td>9136</td>
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<td>9.4</td>
<td>1.1</td>
<td>71.1</td>
<td>100.0</td>
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</table>

**Notes and Sources:**

(i) Initial allocations (rather than revised estimates or actual figures) have been used for Government expenditures, and the estimate for Other Ministries has been adjusted, in order to preserve consistency with the national accounts figures. No adjustment has been made for the revenue obtained by Government through patient fees. Sources of data: National Accounts, Planning Commission, and Provincial Health Departments.

(ii) Semi-public organizations and other employers, and missions and voluntary bodies. Source of data: mission estimates.


Table 9: Capital Expenditures by Source of Finance and Service Provider (Rs million), FY82

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<tr>
<th>Source of Finance</th>
<th>Federal Government Revenue</th>
<th>Local Government Revenue</th>
<th>Donations</th>
<th>Foreign Aid</th>
<th>TOTAL</th>
<th>% of Total</th>
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<td>Federal:</td>
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<td>70</td>
<td>70</td>
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<tr>
<td>(Total)</td>
<td>(424)</td>
<td>(70)</td>
<td>(494)</td>
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<td>39</td>
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<td>(582)</td>
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<tr>
<td>(Total)</td>
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<td>(342)</td>
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<tr>
<td>(Total)</td>
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<td>(342)</td>
<td>(140)</td>
<td>(1418)</td>
<td>(68.9)</td>
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<td>Voluntary Bodies</td>
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<td>140</td>
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<td>Total</td>
<td>936</td>
<td>342</td>
<td>500</td>
<td>280</td>
<td>2058</td>
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</tr>
<tr>
<td>%</td>
<td>45.5</td>
<td>16.6</td>
<td>24.3</td>
<td>13.6</td>
<td>100.0</td>
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Notes and Sources:
(i) For government expenditures initial allocations have been used. Sources of data: Planning Commission and Provincial Health Departments.
(ii) Voluntary bodies and foreign aid. Source of data: mission estimates.
<table>
<thead>
<tr>
<th>Year</th>
<th>Total (Rs m)</th>
<th>Govt. O&amp;M Expenditures (Rs m)</th>
<th>Health as % of Govt. O&amp;M Expend.</th>
<th>% Increase Over Previous Year (%)</th>
<th>Per Capita (Rs)</th>
<th>As % of GNP (%)</th>
<th>Total (Rs m)</th>
<th>% Increase Over Previous Year (%)</th>
<th>Per Capita (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970/71</td>
<td>390</td>
<td>5270</td>
<td>7.4</td>
<td>6.34</td>
<td>0.8</td>
<td>369</td>
<td>6.0</td>
<td>-9.2</td>
<td>5.3</td>
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<tr>
<td>1971/72</td>
<td>371</td>
<td>6478</td>
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<td>-4.9</td>
<td>5.86</td>
<td>0.7</td>
<td>335</td>
<td>0.7</td>
<td>5.1</td>
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<tr>
<td>1972/73</td>
<td>407</td>
<td>7224</td>
<td>5.6</td>
<td>9.7</td>
<td>6.24</td>
<td>0.6</td>
<td>335</td>
<td>0.6</td>
<td>5.1</td>
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<td>1973/74</td>
<td>427</td>
<td>8539</td>
<td>5.0</td>
<td>4.9</td>
<td>6.35</td>
<td>0.5</td>
<td>271</td>
<td>-19.1</td>
<td>4.0</td>
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<tr>
<td>1974/75</td>
<td>569</td>
<td>11950</td>
<td>4.8</td>
<td>33.3</td>
<td>8.21</td>
<td>0.5</td>
<td>285</td>
<td>5.2</td>
<td>4.1</td>
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<td>1166</td>
<td>14343</td>
<td>8.1</td>
<td>104.9</td>
<td>16.35</td>
<td>0.9</td>
<td>522</td>
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<td>0.7</td>
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<td>1977/78</td>
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<td>17977</td>
<td>6.6</td>
<td>7.6</td>
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<td>452</td>
<td>0.7</td>
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<td>1981/82</td>
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<td>31026</td>
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<td>18.96</td>
<td>0.5</td>
<td>407</td>
<td>-1.0</td>
<td>4.8</td>
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Annual Growth (%)

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<th>Rs 1970/71-1981/82</th>
<th>10.5</th>
<th>0.9</th>
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<th>Rs 1970/71-1974/75</th>
<th>6.7</th>
<th>-6.3</th>
<th>-9.1</th>
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Notes: (i) The health expenditures include those of the local authorities.  
(ii) The total government operating and maintenance expenditure figures excludes transfer payments, debt servicing and subsidies.

Sources: (i) Health expenditures in current prices, National Accounts, Federal Bureau of Statistics.  
(iii) GNP and population estimates: World Bank Country Economic Memoranda.
Table 11: Federal and Provincial Government Capital Expenditures
On Health FY73 - FY82

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (Rs m)</th>
<th>As % of Govt. O&amp;M Expenditures (%)</th>
<th>% Increase Over Previous Year (%)</th>
<th>Per Capita (Rs)</th>
<th>As % of GNP (%)</th>
<th>Total (Rs m)</th>
<th>% Increase Over Previous Year (%)</th>
<th>Per Capita (Rs)</th>
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<td>96</td>
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<td>-</td>
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<td>0.1</td>
<td>79</td>
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<td>-5.2</td>
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<td>1981/82</td>
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<td>14.2</td>
<td>12.65</td>
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Annual Growth (%)

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<td></td>
</tr>
<tr>
<td>1976/77-1981/82</td>
<td>Compound: 14.8</td>
<td>Regression: 15.7</td>
<td>11.5</td>
<td>4.2</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 12: Federal and Provincial Government Capital Expenditures on the Rural and Preventive Health Programs FY73 - FY82

<table>
<thead>
<tr>
<th>Year</th>
<th>Rural Health Program (Rs m)</th>
<th>As % of ADP for Health</th>
<th>Preventive Health Program (Rs m)</th>
<th>As % of ADP for Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972/73</td>
<td>14,100</td>
<td>12.31</td>
<td>34,000</td>
<td>29.69</td>
</tr>
<tr>
<td>1973/74</td>
<td>34,220</td>
<td>19.17</td>
<td>35,390</td>
<td>19.83</td>
</tr>
<tr>
<td>1974/75</td>
<td>46,600</td>
<td>15.08</td>
<td>94,460</td>
<td>30.57</td>
</tr>
<tr>
<td>1975/76</td>
<td>92,159</td>
<td>14.34</td>
<td>286,023</td>
<td>44.51</td>
</tr>
<tr>
<td>1976/77</td>
<td>73,310</td>
<td>9.50</td>
<td>435,168</td>
<td>56.38</td>
</tr>
<tr>
<td>1977/78</td>
<td>190,853</td>
<td>27.89</td>
<td>244,383</td>
<td>35.71</td>
</tr>
<tr>
<td>1978/79</td>
<td>240,707</td>
<td>31.59</td>
<td>118,623</td>
<td>15.57</td>
</tr>
<tr>
<td>1979/80</td>
<td>232,784</td>
<td>32.47</td>
<td>100,193</td>
<td>13.97</td>
</tr>
<tr>
<td>1980/81</td>
<td>285,763</td>
<td>30.32</td>
<td>124,175</td>
<td>13.18</td>
</tr>
<tr>
<td>1981/82</td>
<td>271,130</td>
<td>25.19</td>
<td>89,729</td>
<td>8.34</td>
</tr>
</tbody>
</table>

Source: Planning Commission.
Table 13: Estimated Capital Costs of Proposed Physical Infrastructure Targets for the Health Sector in the Sixth National Plan

<table>
<thead>
<tr>
<th>Item</th>
<th>Estimated Capital Cost (Rs m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Medical education</td>
<td>781</td>
</tr>
<tr>
<td>2. Hospital beds (including teaching beds)</td>
<td>4,156</td>
</tr>
<tr>
<td>3. Preventive programs</td>
<td>1,322</td>
</tr>
<tr>
<td>4. Rural health program</td>
<td>6,483</td>
</tr>
<tr>
<td>5. Provision of dental care in existing facilities</td>
<td>300</td>
</tr>
<tr>
<td>6. Medical research</td>
<td>100</td>
</tr>
<tr>
<td>7. Traditional medicine</td>
<td>450</td>
</tr>
<tr>
<td>8. Municipal health services</td>
<td>532</td>
</tr>
<tr>
<td>9. Nutrition programs</td>
<td>250</td>
</tr>
<tr>
<td>10. Miscellaneous</td>
<td>226</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>14,600</strong></td>
</tr>
</tbody>
</table>

Source: Draft Sixth Plan.
<table>
<thead>
<tr>
<th>Item</th>
<th>Total Cost (Rs m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Basic health units</td>
<td>875</td>
</tr>
<tr>
<td>2. Rural health centers</td>
<td>300</td>
</tr>
<tr>
<td>3. Teaching beds</td>
<td>850</td>
</tr>
<tr>
<td>4. Non-teaching beds in DHQ/THQ hospitals</td>
<td>315</td>
</tr>
<tr>
<td>5. Drugs and medicines for the public health system for outpatients</td>
<td>500</td>
</tr>
<tr>
<td>6. District, provincial headquarters, health divisions, and other</td>
<td>500</td>
</tr>
<tr>
<td>contingencies</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,340</strong></td>
</tr>
</tbody>
</table>

Source: Draft Sixth Plan.
Chart 1. Pakistan Health Sector: Organizational Structure of the Ministry of Health and Social Welfare

Advisor to the President on Health

Minister

Advisor to the President on Tibb

Minister of State (Social Welfare)

Social Welfare Wing

Health Secretary

Attachment Departments
1. Jinnah Post-graduate Medical Ctr., Karachi
2. Directorate of Malaria Control Program
3. Directorate of Tuberculosis Control Program
4. Directorate of Central Health
5. Other Subordinate Offices (e.g. UNICEF, World Food Stores, Karachi; Central Health Organization)

Directorate of Health

D.G. Health/Additional Secretary

Project Director
Islamabad Hospital Complex

Project Director
World Food Prog.

World Food Prog.

Dy. Secretary (Dy.S)
Personnel

DDG/Dy.S.
Administration

DDG/Dy.S.
Public Health

DDG/Dy.S.
Medical

DDG/Dy.S.
Development

DDG/Dy.S.
Supplies

Chairman
Quality

DDG/Drugs
Controller

Engineering
Advisor

Autonomous Bodies
Pakistan Nursing Council, Islamabad
Pakistan Medical and Dental Council, Islamabad
College of Physicians and Surgeons, Karachi
National Institute of Cardiovascular Diseases, Karachi
National Institute of Health, Islamabad
Board of Homeopathic System, Karachi
Board of Unani and Ayurvedic System, Lahore
Tibb Council, Islamabad
Pharmacy Council, Islamabad
Chart 2. Pakistan Health Sector: Organizational Structure of Provincial Health Departments.

1/ This applies to the Punjab. Organization of other provincial health departments varies slightly.
Chart 3. Pakistan Health Sector: Organizational Structure of Health Services at the District Level.

1. Division Health Directorate

District Council

- District Health Office
  - Assistant DHO
    - MCH Centres and LHV at RHC
    - CDC Officer
    - Entomologist
    - Administrative Officer
      - Medical Store Keeper
        - Supervisor Vaccination
          - Sanitary Inspector
            - Head Clerk District Council
              - Head Clerk Punjab Govt.

2. Dispensaries

Rural Health Center

- Basic Health Units
- Dispensaries

/1 This applies to the Punjab. In the other three provinces the DHO reports to the Director of Health.
/2 Facilities operated by District Councils.