

CHAPTER 2.8

HEALTH

Introduction

2.8.1 Improvement in the health and nutritional status of the population has been one of the major thrust areas for the social development programmes of the country. This was to be achieved through improving the access to and utilization of Health, Family Welfare and Nutrition services with special focus on under served and under privileged segments of the population. Over the last five decades, India has built up a vast health infrastructure and manpower at primary, secondary and tertiary care in government, voluntary and private

sectors. These institutions are manned by professionals and paraprofessionals trained in the medical colleges in modern medicine and ISM&H and paraprofessional training institutions. The population has become aware of the benefits of health related technologies for prevention, early diagnosis and effective treatment for a wide variety of illnesses and accessed available services. Technological advances and improvement in access to health care technologies, which were relatively inexpensive and easy to implement, had resulted in substantial improvement in health indices of the population and a steep decline in mortality (Table 2.8.1).

Table 2.8.1: Time Trends (1951-2000) in Health Care

	1951	1981	2000
SC/PHC/CHC	725	57,363	1,63,181(99-RHS)
Dispensaries & Hospitals (all)	9209	23,555	43,322 (95-96-CBHI)
Beds (Pvt. & Public)	117,198	569,495	8,70,161 (95-96-CBHI)
Doctors (Modern System)	61,800	2,68,700	5,03,900 (98-99-MCI)
Nursing Personnel	18,054	1,43,887	7,37,000 (98-99-INC)
Malaria (cases in million)	75	2.7	2.2
Leprosy (cases/ 10,000 population)	38.1	57.3	3.74
Small Pox (no. of cases)	>44,887	Eradicated	
Guineaworm (no. of cases)		>39,792	Eradicated
Polio (no. of cases)		29709	265
Life Expectancy (Years)	36.7	54	64.6 (RGI)
Crude Birth Rate	40.8	33.9 (SRS)	26.1 (99 SRS)
Crude Death Rate	25	12.5 (SRS)	8.7 (99 SRS)
IMR	146	110	70 (99 SRS)

Source : National Health Policy - 2002

2.8.2 The extent of access to and utilization of health care varied substantially between states, districts and different segments of society; this to a large extent, is responsible for substantial differences between states in health indices of the population.

2.8.3 During the 1990s, the mortality rates reached a plateau and the country entered an era of dual disease burden. Communicable diseases have become more difficult to combat because of development of insecticide resistant strains of vectors, antibiotics resistant strains of bacteria and emergence of HIV infection for which there is no therapy. Longevity and changing life style have resulted in the increasing prevalence of non-communicable diseases. Under nutrition, micro nutrient deficiencies and associated health problems coexist with obesity and non-communicable diseases. The existing health system suffers from inequitable distribution of institutions and manpower. Even though the country produces every year over 17,000 doctors in modern system of medicine and similar number of ISM&H practitioners and paraprofessionals, there are huge gaps in critical manpower in institutions providing primary healthcare, especially in the remote rural and tribal areas where health care needs are the greatest. Some of the factors responsible for the poor functional status of the system are:

- ☒ mismatch between personnel and infrastructure;
- ☒ lack of Continuing Medical Education (CME) programmes for orientation and skill upgradation of the personnel;
- ☒ lack of appropriate functional referral system;
- ☒ absence of well established linkages between different components of the system.

2.8.4 In order to address these problems the centre and the states have embarked on structural and functional health sector reforms. However, the content and quality of reforms are sub-optimal and the pace of implementation is slow.

2.8.5 As the country undergoes demographic and epidemiological transition, it is likely that larger investments in health will be needed even to maintain the current health status because tackling resistant infections and non-communicable diseases will inevitably lead to escalating health care costs. Last two decades have witnessed explosive expansion in expensive health care related technologies, broadening diagnostic and therapeutic avenues. Increasing awareness and rising expectations to access these have widened the gap between what is possible and what is affordable for the individual or the country. Policy makers and programme managers realise that in order to address the increasingly complex situation regarding access to good quality care at affordable costs, it is essential to build up an integrated health system with appropriate screening, regulating access at different levels and efficient referral linkages. However, both health care providers and health care seekers still feel more comfortable with the one to one relationship with each other than with the health system approach.

2.8.6 Another problem is the popular perception that curative and preventive care compete for available resources, with the former getting preference in funding. Efforts to convince the public that preventive and curative care are both part of the entire spectrum of health care ranging from health promotion, specific protection, early diagnosis and prompt treatment, disability limitation and rehabilitation and that to improve the health status of the population both are equally essential have not been very successful. Traditionally health service (both government and private) was perceived as a social responsibility albeit a paid one. Growing commercialisation of health care and medical education over the last two decades has eroded this commitment, adversely affecting the quality of care, trust and the rapport between health care seekers and providers.

APPROACH DURING THE TENTH PLAN

2.8.7 In view of the importance of health as a critical input for human development there will be continued commitment to provide:

- ⊗ essential primary health care, emergency life saving services, services under the National Disease Control Programmes and the National Family Welfare Programme totally free of cost to all individuals and
- ⊗ essential health care service to people below poverty line based on their need and not on their ability to pay for the services.

2.8.8 Appropriate interventions to ease the existing funding constraints at all levels of health system and to promote the complete and timely utilization of allocated funds will be taken up. Different models of health care financing at the individual, family, institution and state level will be evolved, implemented and evaluated. Models found most suitable for providing essential health care to all will be replicated.

The focus during the Tenth Plan will be on

- ⊗ reorganisation and restructuring the existing government health care system including the ISM&H infrastructure at the primary, secondary and tertiary care levels with appropriate referral linkages. These institutions will have the responsibility of taking care of all the health problems (communicable, non-communicable diseases) and deliver reproductive and child health (RCH) services for people residing in a well-defined geographic urban and rural area;
- ⊗ development of appropriate two-way referral systems utilising information technology (IT) tools to improve communication, consultation and referral right from primary care to tertiary care level;
- ⊗ building up an efficient and effective logistics system for the supply of drugs, vaccines and consumables based on need and utilisation;
- ⊗ horizontal integration of all aspects of the current vertical programmes including supplies, monitoring, information education communication and motivation (IECM), training, administrative arrangements and implementation so that they are integral components of health care; there will be progressive convergence of funding, implementation and monitoring of all health and family welfare programmes under a single field of administration beginning at and below district level;
- ⊗ improvement in the quality of care at all levels and settings by evolving and implementing a whole range of comprehensive norms for service delivery, prescribing minimum requirements of qualified staff, conditions for carrying out specialised interventions and a set of established procedures for quality assurance;
- ⊗ evolving treatment protocols for the management of common illnesses and diseases; promotion of the rational use of diagnostics and drugs;
- ⊗ evolving, implementing and monitoring transparent norms for quality and cost of care in different health care settings;
- ⊗ exploring alternative systems of health care financing including health insurance so that essential, need based and affordable health care is available to all;
- ⊗ improving content and quality of education of health professionals and para professionals so that all health personnel have the necessary knowledge, attitude, skills, programme and people orientation to effectively take care of the health problems, and improve the health status of the people;
- ⊗ skill upgradation of all health care providers through CME and reorientation and if necessary redeployment of the existing health manpower, so that they can take care of the existing and emerging health problems at primary, secondary and tertiary care levels;
- ⊗ research and development to solve major health problems confronting the country

including basic and clinical research on drugs needed for the management of emerging diseases and operational research to improve efficiency of service delivery;

- ☒ building up a fully functional, accurate Health Management Information System (HMIS) utilising currently available IT tools; this real time communication link will send data on births, deaths, diseases, request for drugs, diagnostics and equipment and status of ongoing programmes through service channels within existing infra-structure and manpower and funding; it will also facilitate decentralized district based planning, implementation and monitoring;
- ☒ building up an effective system of disease surveillance and response at the district, state and national level as a part of existing health services;
- ☒ strengthening and sustaining Civil Registration, Sample Registration System; improving medical certification of death so that information on specific causes of death throughout the country are available; use these data in district based planning and monitoring; when sustained over the next two decades, this system will provide valuable insights into inter-district, inter-state, regional variations and time trends so that district health system could be modified to cope with the changing disease burden;
- ☒ improving the efficiency of the existing health care system in the government, private and voluntary sectors and building up appropriate linkages between them;
- ☒ mainstreaming ISM&H practitioners, so that in addition to practising their system of care, they can help in improving the coverage of the National Disease Control Programmes and Family Welfare Programme;
- ☒ increasing the involvement of voluntary and private organisations, self-help groups and

social marketing organisation in improving access to health care;

- ☒ improving inter sectoral coordination;
- ☒ devolution of responsibilities and funds to panchayati raj institutions (PRIs); besides participating in area-specific planning and monitoring, PRIs can help in improving the accountability of the public health care providers, sort out problems such as absenteeism, improve inter-sectoral co-ordination and convergence of services;
- ☒ strengthening programmes for the prevention, detection and management of health consequences of the continuing deterioration of the ecosystems; improving the linkage between data from ongoing environmental monitoring and that on health status of the people residing in the area; making health impact assessment a part of environmental impact assessment in developmental projects;
- ☒ improving the safety of the work environment in organized and unorganised industrial and agricultural sectors especially among vulnerable groups of the population;
- ☒ developing capabilities at all levels, for emergency and disaster prevention and management; evolving appropriate management systems for emergency, disaster, accident and trauma care at all levels of health care;
- ☒ effective implementation of the provisions for food and drug safety; strengthening the food and drug administration both at the centre and in the states;
- ☒ screening for common nutritional deficiencies especially in vulnerable groups and initiating appropriate remedial measures; evolving and effectively implementing programmes for improving nutritional status, including micronutrient nutritional status of the population.

HEALTH CARE SYSTEM

2.8.9 The Health care system consists of:

- ☒ primary, secondary and tertiary care institutions, manned by medical and paramedical personnel;
- ☒ medical colleges and paraprofessional training institutions to train the needed manpower and give the required academic input;
- ☒ programme managers managing ongoing programmes at central, state and district levels; and
- ☒ health management information system consisting of a two-way system of data collection, collation, analysis and response.

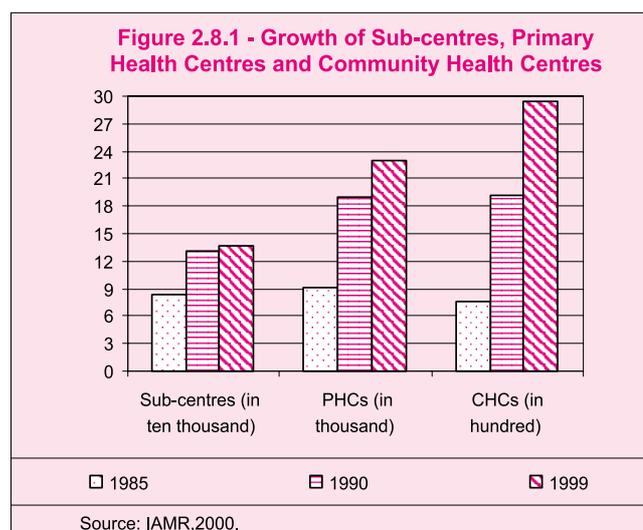
2.8.10 So far the interaction between these components of the system had been sub-optimal. In spite of the plethora of primary, secondary and tertiary care institutions and medical college hospitals there are no well organised referral linkages between the primary, secondary and tertiary care institutions in the same locality. The programme managers and teachers in medical colleges do not link with institutions in any of the three tiers; essential linkages between structure and function are not in place (Annexure - 2.8.1). Logistics of supply and HMIS are not operational in most states. During the Tenth Plan period, efforts will be made to reorganise health system, build up essential linkages between different components of the system so that there will be substantial improvement in functional status (Annexure - 2.8.2).

Primary Health Care Services

2.8.11 The primary health care infrastructure provides the first level of contact between the population and health care providers. Realising its importance in the delivery of health services, the centre, states and several government related agencies simultaneously started creating primary health care infrastructure and manpower. This has resulted in substantial amount of duplication of the infrastructure and manpower.

2.8.12 The government funded primary health care institutions include:

- ☒ the rural, modern medicine primary health care infrastructure created by the states (Figure 2.8.1) consisting of:
 - ↳ Subcentres 137271 (1/ 4579)
 - ↳ Primary Health centres 22975 (1/27364)
 - ↳ Community Health centers 2935 (1/214000)
- ☒ subdivisional/Taluk hospitals/speciality hospitals (estimated to be about 2000);
- ☒ 5435 rural family welfare centres, 871 urban health posts, 1083 urban family welfare centres, 550 district post partum centres and 1012 sub-district postpartum centres funded by the Department of Family Welfare;



- ☒ 23,028 dispensaries, 2,991 hospitals under the Dept of ISM&H;
- ☒ urban health services provided by municipalities;
- ☒ healths care for central government employees provided by Central Government Health Scheme (CGHS);
- ☒ hospitals and dispensaries of railways, defence and similar large departments providing the health care to their staff;
- ☒ medical infrastructure of PSUs and large industries;

- ☒ Employee's State Insurance Scheme (ESIS) hospitals and dispensaries providing health care to employees of industries;
- ☒ all hospitals - even those providing secondary or tertiary care also provide primary health care services to rural and urban population;
- ☒ Over three-fourths of the medical practitioners work in the private sector and majority of them cater to the primary health care needs of the population.

2.8.13 The state-wise information regarding institutions listed under hospitals and dispensaries in modern system of medicine and ISM&H, rural primary health care infrastructure as well as post-partum centres is given in Annexure-2.8.3. Health manpower in government primary health care institutions is given in Annexure-2.8.4. The vast infrastructure and manpower catering to the primary health care needs of the population is not evenly distributed. The segments of the population whose health care needs are greatest have very poor access to health care.

Sub-Centre

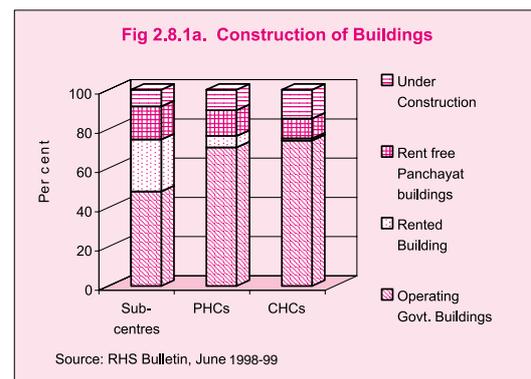
2.8.14 The Sub-centre(SC) is the most peripheral health institution available to the rural population. Even though the sub-centre/population norm at the national level has been met, there are wide inter-state variations. States with poor health indices do not have the required number of sub-centres especially in remote areas. In order to ensure that lack of funds does not hamper the filling up of vacancies in the posts of auxiliary nurse midwife (ANM), the Department of Family Welfare has taken up funding of sub-centre ANMs (1.37 lakh) from 1st April 2002. The States will, in return take over the funding of the staff of the rural family welfare and post partum centres, who have for the last two decades functioned as a part of the respective institutions in the state. There are a large number of vacancies in the posts of male multi-purpose workers (MMPW) whose salaries are borne by the state government (Annexure-2.8.4). Even where they are present, their contribution to the ongoing national disease control programmes, disease surveillance and water quality monitoring is negligible. There are a large number of male uni-purpose workers with insufficient workload in various

centrally sponsored disease control programmes. With appropriate skill up gradation these uni-purpose male workers and contractual staff will be able to perform the task of MMPW in improving the coverage and quality of all health programmes.

Primary Health Centres (PHCs)

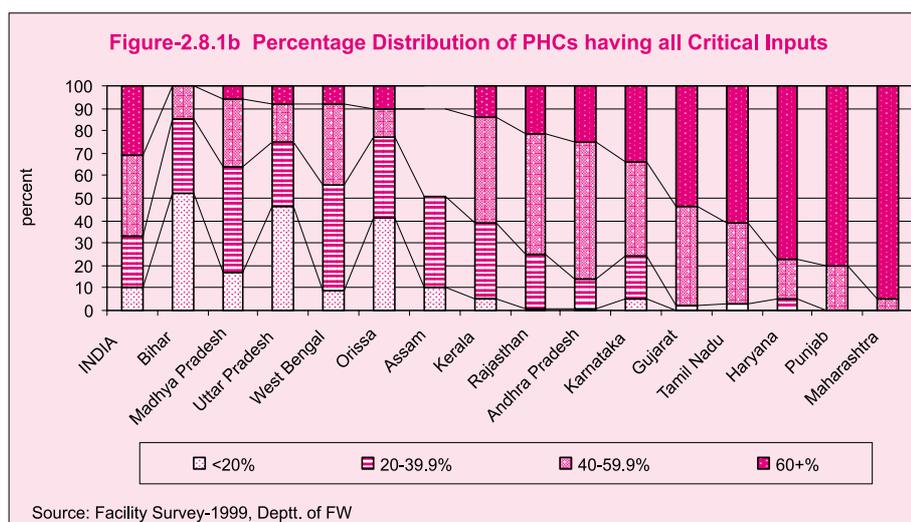
2.8.15 PHC is a referral unit for six sub-centres. All PHCs provide outpatient services; a majority have four to six in-patient beds. According to the norms they have one medical officer, 14 para-medical and other supporting staff. At the national level there are more than an adequate number of PHCs and doctors posted at PHCs but their distribution across states is uneven; there are no functional PHCs in many remote areas in dire need of health care.

2.8.16 The number of SCs, PHCs and CHCs in their own building is shown in Figure 2.8.1a.



2.8.17 Facility Survey undertaken by the Department of Family Welfare in 1999 showed that a majority of the PHCs lack essential infrastructure and inputs (Figure-2.8.1b). Only 77 per cent had an infant weighing machine, 65 per cent had a deep freezer, 16 per cent had a refrigerator, and 60 per cent had an autoclave and steam sterilizer drum. Less than 20 per cent had facility for medical termination of pregnancy (MTP).

2.8.18 Essential drugs for the treatment of common ailments were not available in a majority of the PHCs. Only around one-thirds of the PHCs had stock of iron and folic acid (IFA) tablets, 56 per cent had stocks of contraceptives and 61 per cent had vaccines. No more than a third of the PHCs provided delivery care; in them on an



average of 26 deliveries occurred in the last three months before the survey. It is obvious, therefore that PHCs are functioning sub-optimally and are not providing the expected health and family welfare services.

Community Health Centres/First Referral Units

2.8.19 Community Health Centre (CHC) is the first referral unit (FRU) for four PHCs offering specialist care. According to the norms each CHC should have at least 30 beds, one operation theatre, X-ray machine, labour room and laboratory facilities and should be staffed at least by four specialists i.e. a surgeon, a physician, a gynecologist and a pediatrician supported by 21 para-medical and other staff.

2.8.20 The reported gap in the number of CHCs (about 2000) is more apparent than real. Currently there are over 2000 functioning sub-divisional, taluka and other speciality hospitals below the district hospital. From the Seventh Plan onwards, it has been emphasized that these should be reorganised and brought into the mainstream, given the status of CHC and the responsibility of being the referral centre for well defined PHCs and SCs. Many CHCs/FRUs have sub-district post partum centers located within their premises or in the vicinity, but they are not functioning as a part of CHC.

2.8.21 The Facility Survey carried out by the Dept. of Family Welfare showed that though more

than 90 per cent of the CHCs have an out patient and in patient facilities and operation theatre, only about one-third had adequate equipments. A majority of the CHCs do not function as the FRUs because they either do not have any specialist or the posted specialists are not from the four specified specialties.

Tribal Health

2.8.22 In order to ensure adequate access to health care services for the tribal population, 20,769 SCs, 3286 PHCs, 541 CHCs, 142 hospitals, 78 mobile clinics and 2305 dispensaries have been established in tribal areas. In addition, 16845 SCs, 5987 PHCs, 373 CHCs and 2750 dispensaries are located in

Experiments for improving access to primary health care among tribals:

- Andhra Pradesh – Committed government functionaries are running health facilities in tribal areas
- Orissa – Additional central assistance is provided for mobile health units with a fixed tour schedule. However, this is expensive and difficult to replicate.
- Karnataka, Maharashtra – NGO have 'adopted' and are running PHCs in tribal areas

The success of all these experiments is mainly due to the commitment of individuals and credibility of NGOs, which is difficult to replicate.

villages with 20 per cent or more scheduled caste population. Most of the centrally sponsored disease control programmes have a focus on the tribal areas. Under the National Anti Malaria Programme (NAMP) 100 identified predominantly tribal districts in Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Orissa and Rajasthan are covered. In spite of all these, the access to and utilisation of health care remain suboptimal and health and nutrition indices in the tribal population continue to be poor (Table-2.8.2).

Table:2.8.2
Health indices of various social groups

	IMR	U5MR	%Under nutrition
SC	83.0	119.3	53.5
ST	84.2	126.6	55.9
Other disadv	76.0	103.1	47.3
Others	61.8	82.6	41.1
India	70	94.9	47

Source : NHP, 2002

Health System Reforms at Primary Health Care Level during Ninth Plan

2.8.23 Faced with the problems of sub-optimal functioning and difficulties in providing adequate investments for improving health care facilities in the public sector, almost all state governments have initiated health system reforms with public sector institutions playing lead role. The structural reforms relate to reorganisation and restructuring of all the elements of health care so that they function as integral components of the health system. The functional reforms are aimed at improving efficiency by creating a health system with well-defined hierarchy and functional referral linkages in which the health personnel would work as a multi-professional team and perform duties according to their position, skills and level of care. The community-based link worker who acts as a liaison between people and health care functionaries and ensures optimal utilization of available facilities will provide the last link. The PRIs will participate in planning programmes and assist in implementation

and monitoring. Almost all the states have attempted introduction of user charges for diagnostic and therapeutic procedures in government hospitals from people above the poverty line and use the funds so generated to improve the quality of care in the respective institutions.

2.8.24 Some of the ongoing health system reforms to improve health services include:

- ☒ strengthening and appropriately relocating sub-centres/PHCs e.g. Tamil Nadu, Gujarat;
- ☒ merger, restructuring, relocating of taluk, sub-divisional and rural hospitals, dispensaries and block level PHCs; integrating them with the existing infrastructure to fill the gap in CHCs e.g. Himachal Pradesh;
- ☒ utilizing funds from Basic Minimum Services (BMS), Additional Central Assistance (ACA), Pradhan Mantri Gramodaya Yojana (PMGY) and externally aided projects to fill critical gaps in manpower and facilities; this is being done in all states;
- ☒ district-level walk-in-interviews for the appointment of doctors in PHCs; this had limited success – e.g. Madhya Pradesh and Gujarat;
- ☒ use of mobile health clinics; this is very expensive and had limited success e.g. Orissa, Maharashtra (for Tribal areas), Delhi (for urban slums);
- ☒ handing over of PHCs to NGOs – Karnataka, Orissa; only Karnataka reported success;
- ☒ training MBBS doctors in certain specialties (obstetrics, anaesthesia, radiology) in a teaching institution for three to six months and posting them to fill the gap in specialists in FRUs e.g. Tamil Nadu and West Bengal; however, professional associations do not support this because quality of care may be suboptimal; and
- ☒ improving the logistics of supply of drugs and consumables – e.g. Tamil Nadu, Orissa.

2.8.25 Several states have obtained external assistance to augment their own resources so that the pace of reforms can be accelerated. Funds were provided under PMGY for improving functional

status of rural primary health care institutions. Fifty per cent of the outlay was to be used for procurement of drugs and essential consumables and repair of essential equipments. The other 50 per cent was to be used for repair and maintenance of infrastructure in sub-centres, PHCs and CHCs. Under the RCH Programme, funds are provided for minor repair and maintenance of buildings, especially for operation theatres and labour rooms and for improving water and electric supply. Review of the health sector reforms during the Ninth Plan period indicates that on the whole, the content and coverage are poor; pace of implementation is very slow and uneven across the states.

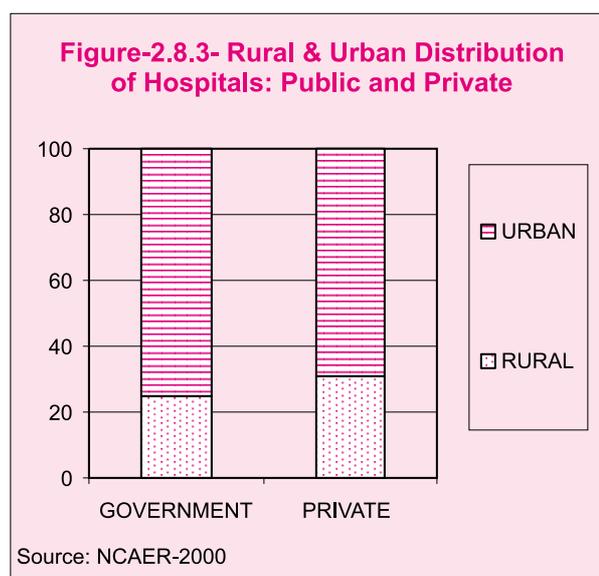
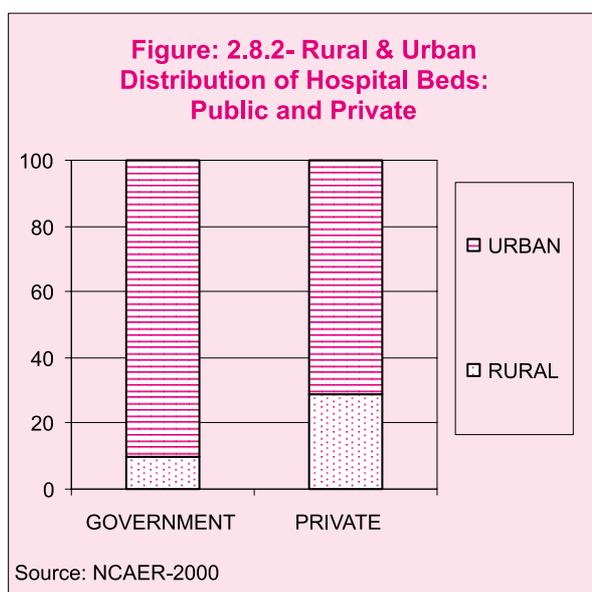
Urban Primary Health Care Services

2.8.26 Nearly 30 per cent of India's population lives in the urban areas. Majority of the hospitals (Figure-2.8.2 & 2.8.3), doctors and para-professionals are in urban areas. Urban population

Table-2.8.3
Urban/rural health indicators

	BPL(%)	IMR	U5MR	% Children Under-nourished
Urban	23.6	44	63.1	38.4
Rural	27.1	75	103.7	49.6
Total	26.1	70	94.9	47.0

Source : NFHS-2



is aware and has ready access to health care. Data from SRS, NFHS and other surveys indicate that health indices of the urban population are better than those of the rural population (Table-2.8.3). However, urban migration has resulted in rapid growth of urban slums; The slum population face greater health hazards due to over-crowding, poor sanitation, lack of access to safe drinking water and environmental pollution. Small scale research studies have shown that health indices of urban slum dwellers in some areas are worse than those of rural population.

2.8.27 Realising that the available infrastructure is insufficient to meet the health care needs of growing urban population, the municipalities, state governments and the central government have tried to build up urban health care facilities. These urban health facilities especially the tertiary care institutions cater to both the urban and rural population. Unlike the rural health services there have been no efforts to provide well-planned and organized primary, secondary and tertiary care services in geographically delineated urban areas. As a result, in many areas primary health care facilities are not available; some of the existing institutions are under utilised while there is over-crowding in most of the secondary and tertiary care centres. As there is no screening and referral system, the available equipment and expertise in secondary hospitals are under utilised; inappropriate use of available diagnostic and therapeutic facilities result in

escalating cost of health care without commensurate health benefits.

2.8.28 The Ninth Plan envisaged the development of a well structured net work of urban primary health care institutions providing health and family welfare services to the population within one to three km of their dwellings by re-organizing the existing institutions. In addition to funds provided by corporations/municipalities, state government and the central government, externally assisted projects were taken up to achieve the goal. The Planning Commission also provided additional central assistance to some states for undertaking such restructuring. Though there are several small success stories, hardly any progress has been achieved in the overall task of restructuring the urban primary health care, linked to secondary and tertiary care and appropriate retraining and redeployment of personnel. One of the major factors responsible for the tardy progress is the multiplicity of agencies funding these institutions.

Role of Panchayati Raj Institutions

2.8.29 According to Article 243 G of the 73rd Constitutional Amendment Act, states are required to devolve adequate powers and responsibility to the PRIs in order to make them effective institutions of local self government. Funds and personnel have to be made available to the PRIs for planning and implementation of schemes pertaining to various sectors. The PRIs can play a critical role in ensuring area specific microplanning, monitoring of the implementation of the national, state level and district specific programmes, ensuring accountability and improving inter-sectoral coordination. However, in many states, there have been no concrete steps to involve PRIs in the planning and implementation of state sector or centrally sponsored schemes.

Initiatives during the Tenth Plan

2.8.30 During the Tenth Plan every effort will be made to implement the recommendations of the Seventh, Eighth, and Ninth Plan that all hospitals and dispensaries below district level should be

mainstreamed, reorganised, restructured and integrated into the three tier rural primary health care system so that these institutions serve the population in a well defined area and have appropriate referral linkages with each other. The village under each sub-centre, sub-centres under each PHC, PHCs under each CHC/FRU will be defined using Geographical information System (GIS) mapping, taking into account distances, road linkages and other factors that will improve access. All sub-district institutions with specialists will be recategorised as CHC/FRU and all hospitals and dispensaries without specialists will be merged or recategorised as PHCs. By the end of Seventh Plan most of the states have completed setting up required number of Subcentres and PHCs required to meet the norms for 1991 population (Figure 2.8.1). As many of them are located in their own building and cannot be shifted out (Figure 2.8.1a). Population under each of these primary health care institutions has grown; but it will be difficult to locate new institutions to cater to the additional population in appropriate locations. Therefore the Tenth Plan goals for primary health care institutions for each state will be number of the primary health care institutions required to meet the health care needs of the 1991 population as per the norms (Annexure 2.8.3). Opening new centers and construction of new centres will be undertaken only under exceptional circumstances.

2.8.31 Ninth Plan recommendations regarding re-organisation of urban primary health care institutions making them responsible for the health care of a population living in a defined geographic area and linking them to existing secondary and tertiary care institutions will be fully implemented during the Tenth Plan.

2.8.32 In order to cope with the growing population/changing needs for health care, the staffing pattern of both urban and rural primary health care institutions may be suitably modified taking into account the population, their health care needs, the work load, difficulties in delivery of services and distances to be covered. Most of the gaps in critical manpower will be met by re-orientation, skill up gradation and redeployment of the existing manpower. For instance vacancies in

the posts of specialists in FRUs will be reduced by integrating the staff of the post partum centres with the FRU staff. As and when required part time or contractual staff including those provided under the national disease control programmes and family welfare programme could be utilised to fill the gaps in manpower. Release of grants under the centrally sponsored schemes will be conditional on filling the vacancies in staff who are critical for improving performance under the national programmes. Mismatch between the equipment and personnel will be corrected by shifting equipment to centres which have the personnel to operate it or vice versa

2.8.33 Available funds will be utilized to make all the existing institutions fully functional by providing needed equipment, consumables, diagnostics and drugs. In addition to funds from the centre, state, externally aided projects, locally generated funds from user charges and donations will be used for maintenance and repair to ensure optimal functional status and improve quality of services.

Secondary Health Care

2.8.34 The secondary health care infrastructure at the district hospitals and urban hospitals is currently also taking care of the primary health care needs of the population in the city/town in which they are located. This inevitably leads to overcrowding and under utilisation of the specialized services. Strengthening secondary health care services was an identified priority in the Ninth Plan. In addition to the funds they get from the state plan, seven states have taken World Bank loans to initiate projects to build up FRUs/district hospitals. The aim of these projects is to :

- ☒ strengthen FRUs to take care of referrals from PHCs/SCs;
- ☒ strengthen district hospitals so that they can effectively take care of referrals;
- ☒ strengthen the referral system and rationalize care at each level to:
 - ↳ enable patients to get care near their residence;
 - ↳ ensure optimal utilisation of facilities at PHCs/ CHCs; and

- ↳ reduce overcrowding at the district and tertiary care level.

2.8.35 The states have initiated construction works and procurement of equipments. They have reported increased availability of ambulances and drugs, improvement in quality of services following training to health care providers, reduction in vacancies and mismatches in health personnel/ infrastructure and improvement in hospital waste management, disease surveillance and response systems. All these states have attempted to levy user charges for diagnostic and therapeutic services from people above the poverty line. Some states have been unable to ensure that the collected charges are retained for use in the same institution and this problem need be speedily resolved.

2.8.36 During the Tenth Plan priority will be accorded to the evaluation of the ongoing World Bank funded secondary health care systems projects in these seven states regarding:

- ☒ progress in strengthening of physical infrastructure;
- ☒ functional improvement in terms of patient care, organization of referral linkages between CHCs, district hospitals and tertiary care institutions;
- ☒ improvement in different components of care - hospital waste management, disease surveillance and response, HMIS etc;
- ☒ operationalisation of cost recovery through user charges from people above poverty line while ensuring that people below the poverty line do have access to health services free of cost;
- ☒ efforts currently underway to make the programme sustainable so that it remains fully functional after project period.

2.8.37 During the Tenth Plan strengthening of the secondary health system and building up referral services will be taken up in other states using the lessons learnt from these seven states.

Tertiary Health Care

2.8.38 Over the last two decades a majority of the tertiary care institutions in the governmental

sector have been facing a resource crunch and have not been able to obtain funds for equipment maintenance, replacement of obsolete equipments, supply of consumables and upgrading the infrastructure to meet the rapidly growing demand for increasingly complex diagnostic and therapeutic modalities. There is a need to optimise facilities available in tertiary care institutions, enhance the quality of services and strengthen linkages with secondary care institutions. Overcrowding in tertiary care hospitals and underutilization of expert care due to the lack of a two way referral system with primary and secondary care levels requires correction. To meet some of the recurring costs and to improve the quality of services in tertiary health care institutions the Ninth Plan suggested levying user charges and establishing pay clinics/pay cabins.

2.8.39 Some states have provided land, water and electricity at a lower cost to private entrepreneurs setting up tertiary care/superspeciality institutions on the condition that they provide outpatient and inpatient care free of cost for people below the poverty line. In an effort to augment the availability of tertiary care, several states (e.g. Rajasthan and Himachal Pradesh) are trying out innovative schemes to give greater autonomy to government institutions, allowing them to generate resources and utilise them locally. Most states have not yet fully documented the extent and impact of their efforts in this direction. Available data suggest that Kerala, Punjab and Haryana have cost recovery ratios of around 10 per cent and more than 80 per cent of the fees for public facility care were paid by the richest 40 per cent of the population both in the urban and rural areas. This may be because this section uses the services more or the quality of care provided to those who pay may be better than to those who are exempt from paying. A review of the existing cost recovery system in states has shown that:

- ☒ an appropriate institutional framework for reviewing user charges has not yet been established;
- ☒ the level of cost recovery is minimal due to the low structure of fees and inadequate collection mechanisms;

- ☒ mechanisms for identifying and exempting the poor from user charges are ill defined; and
- ☒ funds collected are not retained at the point of collection in many states.

2.8.40 During the Tenth Plan, the ongoing efforts at cost recovery from people above the poverty line will be encouraged and evaluated; models which improve the access of all segments of the population to appropriate care at an affordable cost will be replicated. One of the major recommendations of the Ninth Plan was that a Technical Appraisal Committee should be constituted in all major government institutions to assess and prioritise the essential requirements for strengthening and up grading of facilities keeping in mind the funds available. Every effort will be made in the Tenth Plan to implement this recommendation, improve autonomy and encourage decentralised planning.

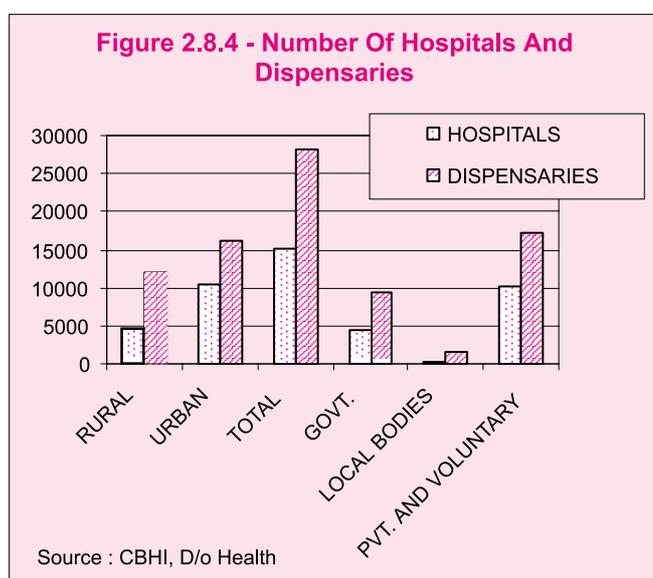
Development and Use of Appropriate Technologies

2.8.41 The development and utilisation of appropriate technologies for diagnosis and management of patients is an essential pre-requisite for an improvement in the quality of health services without unnecessary escalation in cost of health care. Realising the need for an in-depth review of the requirement for supportive and diagnostic services at primary, secondary and tertiary care a separate Working Group on this subject was constituted prior to the formulation of the Ninth Plan.

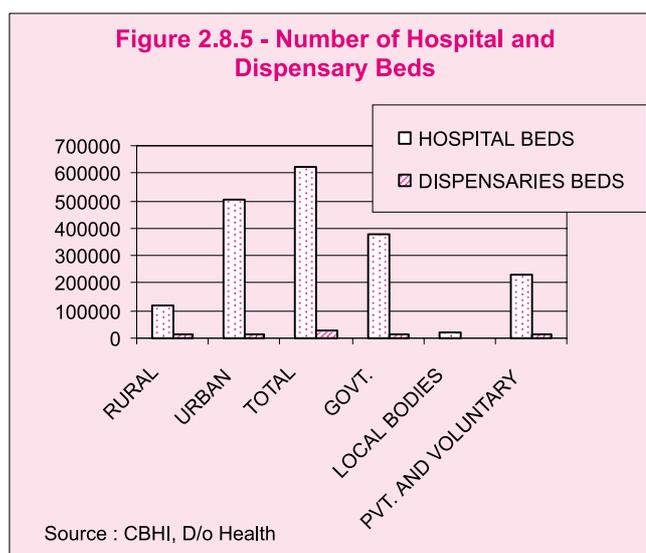
2.8.42 The Working Group's recommendations regarding diagnostic and supportive services appropriate for the primary and secondary levels and their maintenance were, to some extent implemented by some states. Efforts for the development and testing of inexpensive technologies for weighing, measurement of blood pressure, haemoglobin (Hb) estimation, hand held data entry machines to improve HMIS continue to receive support. Efforts to set up a national mechanism for the appraisal of the quality of new technologies will continue.

Public – Private Participation in Health Care

2.8.43 The private health sector has played a significant role in health service delivery right from the pre-independence days. At the time of independence public-private participation was in the form of government doctors being allowed private practice, an arrangement that continues even today in majority of states. To cope with the lack of medical teachers in the 1950s and 1960s many medical colleges appointed private practitioners as honorary teachers and honorary physician in teaching hospital but the number of such teachers declined with the increasing availability of full-time paid government teachers.

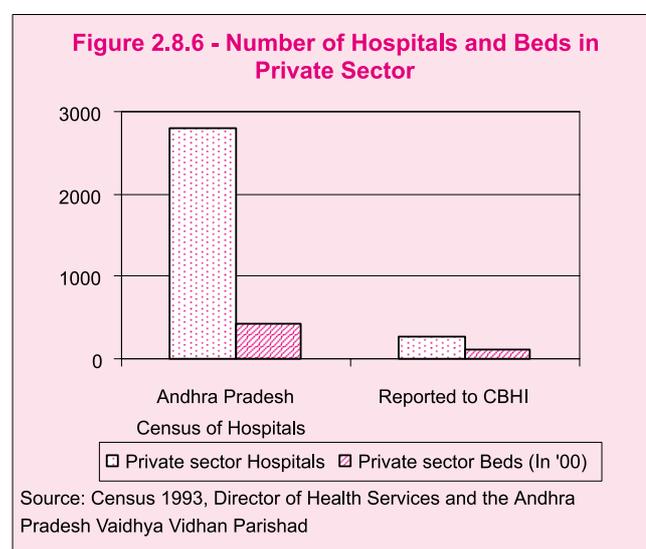


2.8.44 At present, there is no uniform nationwide system of registering either practitioners or institutions providing health care in the private/voluntary sectors nor is there a mechanism for obtaining and analyzing information on health care infrastructure and manpower in these sectors at the district level. During the Ninth Plan a Standing Technical Advisory Committee headed by the Director General of Health Services was set up and the Central Bureau of Health Intelligence (CBHI) was given the task of compiling data on health care infrastructure and manpower at all levels in the private, voluntary, industrial, governmental and other sectors. So far, very little progress has been reported in this direction. This task will

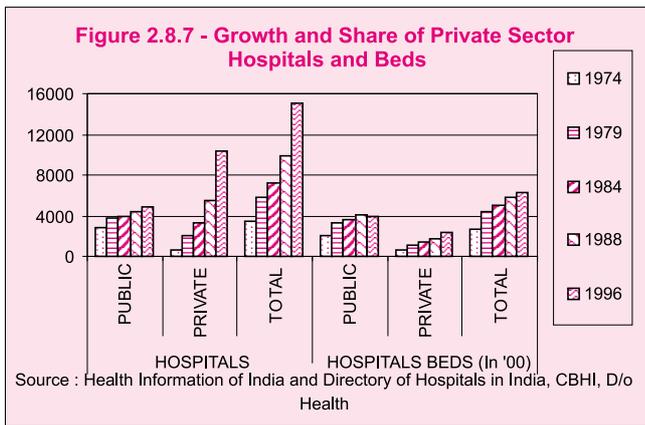


be taken up and completed on a priority basis during the Tenth Plan.

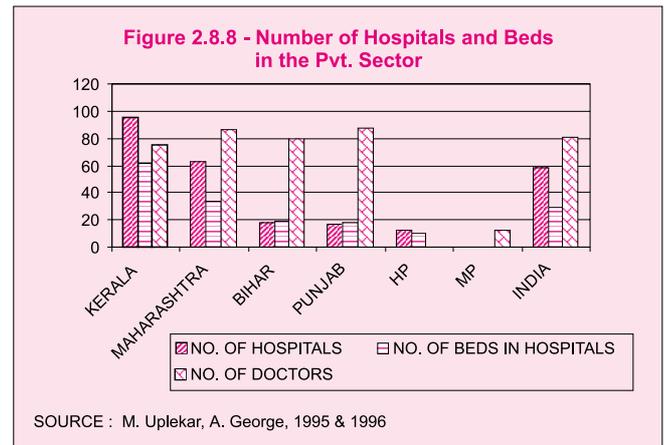
2.8.45 Available data on infrastructure and manpower in the hospitals and dispensaries (excluding PHCs and CHCs) in private and public sector from both rural and urban area computed from CBHI reports is shown in Figure 2.8.4 & 2.8.5. While information on the government sector institutions is reliable, data on the private sector is incomplete and is based on information provided by the state medical councils and state governments. Data from Andhra Pradesh indicate that there may be massive differences between the data reported by CBHI and the actual census conducted by the state government (Figure 2.8.6).



2.8.46 Available data from National Sample Survey Organisation (NSSO) carried out by independent investigators and studies funded by the Department of Health suggest that a majority of the physicians in both the modern system of medicine and ISM&H work in the private sector. The growth and share of private sector hospitals and beds over the years is shown in Figure 2.8.7. The growth and share of government sector hospitals and beds appear low because the CBHI does not include the PHCs (there are 22975 PHCs; majority have six beds) and CHCs (2985 each with atleast 30 beds) under hospitals and dispensaries. While there has been a substantial increase in the number of hospitals under the private sector during the 1990s, the rise in the number of beds has been modest. (Figure 2.8.7)

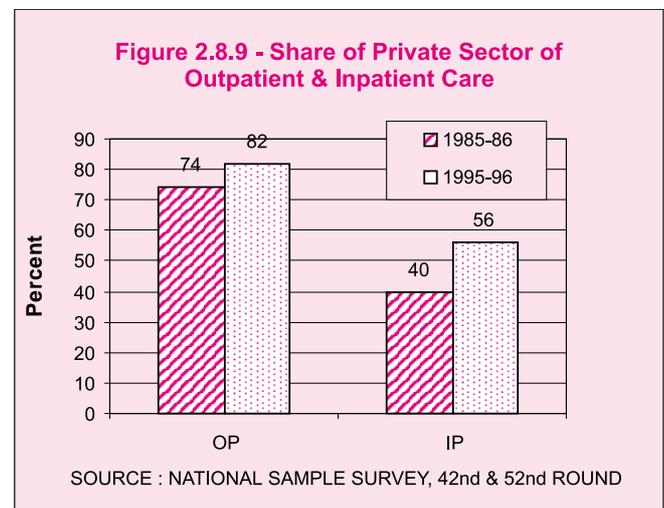


2.8.47 Currently private sector health services range from those provided by large corporate hospitals, smaller hospitals/nursing homes to clinics/ dispensaries run by qualified personnel and services provided by unqualified practitioners. A majority of the private sector hospitals are small establishments with 85 per cent of them having less than 25 beds with an average bed strength of 10 beds. Private tertiary care institutions providing specialty and super-specialty care account for only 1 to 2 per cent of the total number of institutions while corporate hospitals constitute less than 1 per cent. There are wide inter-state differences in the distribution of private sector hospitals and beds. The private sector prefers to set up facilities in the more prosperous districts/ states (Figure 2.8.8). The private sector accounts for 82 per cent of all



outpatient visits and 52 per cent of hospitalisation at the all-India level (Figure 2.8.9), with no significant variations across income group.

2.8.48 A majority of government and private sector hospitals and beds are located in urban areas. Qualified and registered private sector doctors or private sector institutions are not readily available in remote rural and tribal areas because people do not have ability to pay and there is a lack of social infrastructure. Thus, the population in these areas where health care needs are the greatest have very poor access to functioning government health services or private facilities. In spite of the abundant supply of registered physicians in modern system of medicine and ISM&H, unqualified persons still provide health care especially to the poorer segments of the population living in urban slums, remote rural and tribal areas.



2.8.49 Majority of private sector institutions are single doctor dispensaries with very little infrastructure or paramedical support. They provide symptomatic treatment for common ailments and because they are conveniently located and easily accessible, patients from even below the poverty line utilize them and pay for their services. These private practitioners do not have access to updated standard protocols for the management of common ailments; hence the quality of care they provide is often sub-optimal. Some private hospitals have also been found to be using inappropriate, unnecessary and expensive diagnostic tests and therapeutic procedures as well as inappropriate and unethical treatment practices. Other problems reported in private sector include use of unqualified service providers, overuse of diagnostic and therapeutic measures leading to exorbitant costs. There is no attempt to screen patients for complications and refer them to the appropriate level of care, rationalise drug use or contain the costs of treatment. These problems have to be addressed through appropriate interventions, including CME to update the knowledge and skills of practitioners, evolving and implementing standards for quality of care and operationalisation of an appropriate grievance redressal mechanism.

Figure 2.8.10 - Public and Private Sector Shares In Service Delivery For Those Above and Below Poverty Line. All India, 1995-96

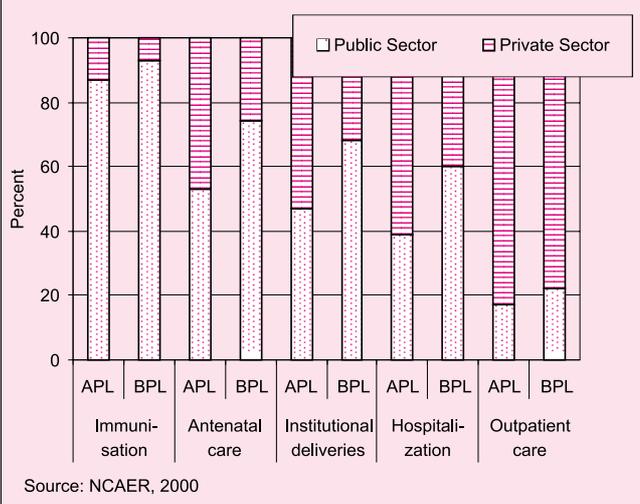
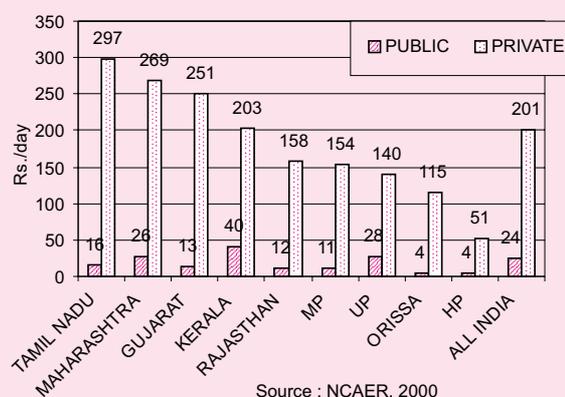
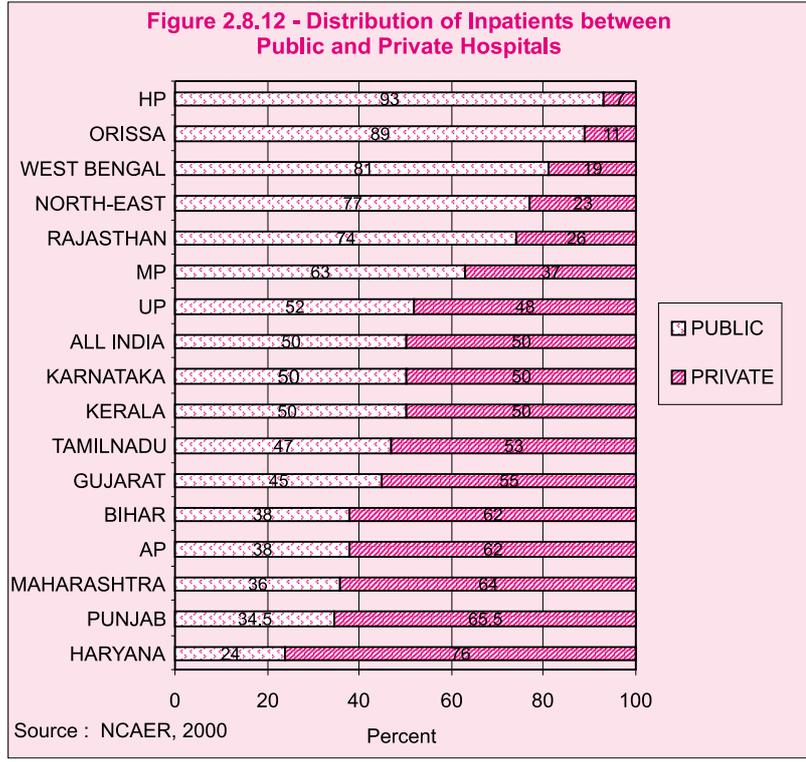


Figure 2.8.11 - Average Hospital Charge per Inpatient Day by Public and Private Hospitals



2.8.50 Data from 52nd round of NSSO 1995-96, National Family Health Survey (NFHS-2) and a National Council of Applied Economic Research (NCAER) study shows that there were distinct patterns for the utilisation of out patient and inpatient services. A majority of the population both from below and from above the poverty line, approached the private sector for outpatient curative care for minor ailments. However, when it came to obtaining immunization or antenatal care, most people, irrespective of their income status went to government institutions. For inpatient care for all ailments 60 per cent of the below poverty line (BPL) families tend to use government hospitals and while an equal proportion of above poverty line (APL) families prefer private hospitals (Figure 2.8.10).

2.8.51 The average cost of hospital stay per day in government hospitals is low and there are no significant inter-state variations in this respect. The cost of inpatient treatment in the private sector is much higher (Figure 2.8.11). This has been cited as the major reason for poorer sections seeking inpatient care in government institutions. There are wide inter-state variations in the cost of private sector inpatient care, ranging from Rs.51 per day in Himachal Pradesh to Rs. 297 in Tamil Nadu. Part of the difference might be due to differences in diagnostic and therapeutic services available in these hospitals.



2.8.52 The state-wise distribution of in-patients in public and private hospitals is given in Figure 2.8.12. In spite of good government sector infra-structure, a majority of patients in Punjab, Haryana, and Maharashtra went to private hospitals. In Himachal Pradesh, Rajasthan, West Bengal and the north eastern states a majority of the patients seek admission in government hospitals in spite of inadequacies in infra-structure. In Bihar, poor government infrastructure might be responsible for over 60 per cent of patients seeking admission in private hospitals. Obviously the choice between public and private sector facilities depends on several factors including the functional status of government infrastructure, the price differential between the public and private sector, the person's ability to pay and the preferences of the community.

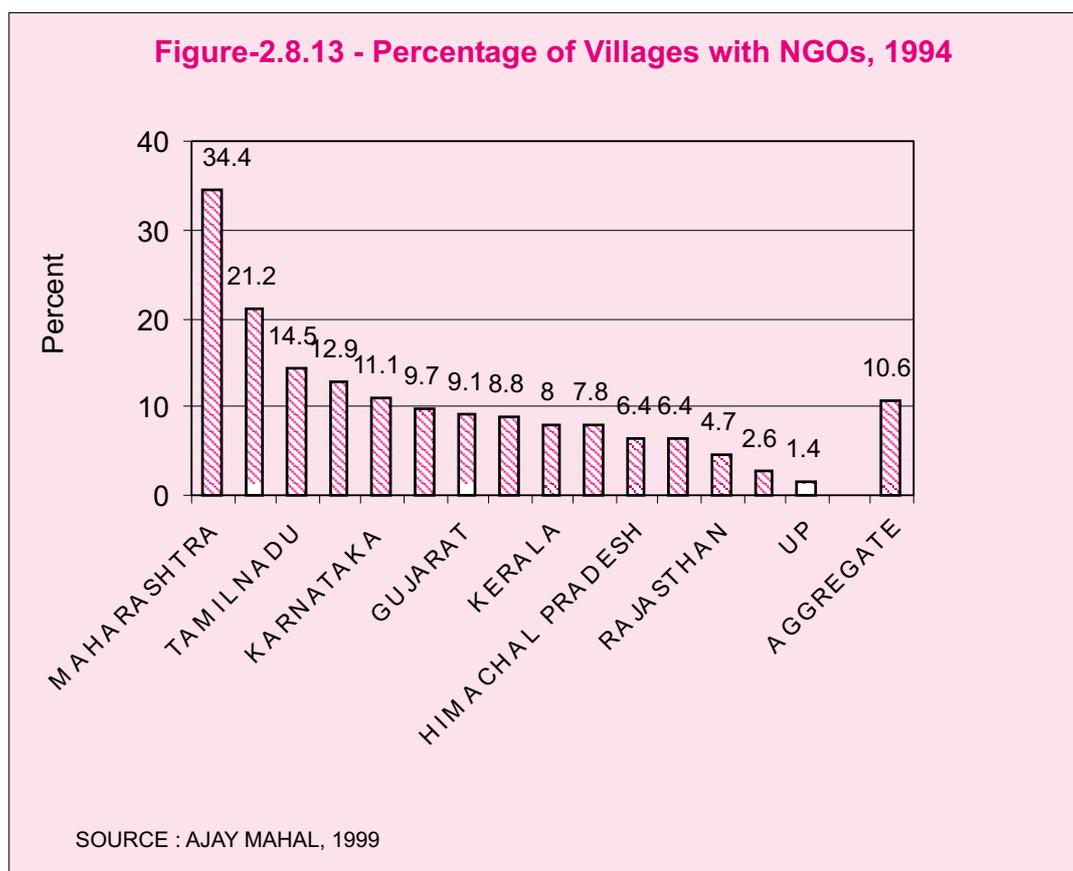
NGO and Voluntary Sector

2.8.53 Apart from purely private providers of health care, the NGOs and the voluntary sector have been providing health care services to the community. It is estimated that more than 7000 voluntary agencies are involved in health-related activities. Wide inter-state differentials exists in

the coverage of villages by NGOs (Figure-2.8.13). NGOs providing a variety of services are relatively few, unevenly distributed across and within states and have limited area of operation. Some implement government programmes of the departments of family welfare and health. Others run integrated or basic health services programme or provide special care/ rehabilitation to people suffering from some specific diseases e.g., leprosy patients. Health care activities are also carried out by agencies like the Red Cross, industrial establishments, Lion's Club, Helpage India etc.

2.8.54 Some of the problems faced by NGOs in delivery of health care include:

- ☒ limited interaction between the government and NGOs;
- ☒ limited financial management, technical and managerial capacity of the NGO;
- ☒ paucity of funds; and
- ☒ delays in transfer of funds from the government.

Figure-2.8.13 - Percentage of Villages with NGOs, 1994

Ongoing Efforts in Public - Private Collaboration in Health Care

2.8.55 There have been very few studies documenting the geographic distribution of outpatient/inpatient facilities, existing collaborations between private sector and public sector institutions and the role each of them play in outpatient/ inpatient health care in different districts/states. The Ninth Plan had recommended that these will be documented and the information utilised for decentralized district -based planning. This has not yet been done and may have to be taken up on a priority basis during the Tenth Plan. During the Ninth Plan period, the Centre as well as the states initiated a wide variety of public-private collaborations. Some of the ongoing collaborations include:

- ☒ in most of the states government doctors are allowed private practice. The doctor benefits monetarily; patients also gain because they are being treated by doctors who had updated their

knowledge and skills through in-service training;

- ☒ contractual appointment of the health care personnel and hiring of private practitioners for providing services in the PHCs have been attempted in order to fill the gaps. However, the response has been poor; these practitioners need orientation training to fulfill the role expected of PHC doctors;
- ☒ part time hiring of general practitioners and specialists to visit and provide health care in PHCs/CHCs in under-served areas. Limited success has been reported in this experiment;
- ☒ state and central governments, PSUs reimburse cost of medical care provided by recognized private health care providers/institutions;
- ☒ involving NGOs/private sector practitioners in the national programmes e.g. utilizing the services of NGOs, and not for profit institutions in the leprosy eradication programme,

involvement of private practitioners/institutions in the blindness control programme and the NGOs in HIV/AIDS control programme;

- ☒ private sector individuals/institutions/industry e.g. Tata Steel Company provide health care to the population living in a defined area;
- ☒ private super-specialty, tertiary/secondary care hospitals are given land, water and electricity etc. at a concessional rate and permission for duty-free import of equipment with the understanding that they will provide in-patient/out-patient services to poor patients free of charge. The experience in this has been varied; several problems being reported;
- ☒ private practitioners provide information for disease surveillance in some districts in Kerala.

2.8.56 The impact of all these on improving access to and affordability of health care and on the coverage under disease control programmes have not yet been evaluated. However, available information suggest that these schemes succeeded in places where there were well-defined committed groups and clear-cut memorandums of understanding (MOUs) and the MOUs were implemented properly. During the Tenth Plan attempts will be made to improve area-specific public-private collaborations, taking into account the health care needs of the population, the presence of each of these sectors, their strengths and weaknesses. Feasibility of GIS mapping to identify under-served areas and providing suitable incentives to encourage private sector to set up health facilities in such areas will be explored. Monitoring the implementation of these programmes along with the PRIs and local leaders will go a long way in ensuring accountability.

2.8.57 Since private practitioners provide most of the curative care in the country, it is important that they are given ready access to updated protocols for the management of common illnesses and current regimens used in the national disease control programmes and family welfare programme. They must be allowed to have easy access to drugs, devices, and vaccines provided through the national programmes. If this

is done, private practitioners can play an important role in increasing the coverage as well as containing the cost of care.

2.8.58 One essential pre-requisite for improving the quality of care will be the development of standard treatment protocols appropriate for each level of care. The medical colleges and research institutions should play a key role in preparing these documents quickly. The existing government institutions at each level will have to take up the responsibility of testing these management protocols and suggest necessary modifications. These protocols will be made available to all practitioners through CME programme for skill upgradation and training. Available IT tools have to be fully utilised by CME programmes to ensure easy access to the materials for updating skills and knowledge. Online consultation services between paraprofessionals and doctors and among doctors may improve the quality of services and reduce the problem of transporting patients to hospitals for diagnosis and advice regarding management. Government institutions in the states, which will be 'model institutions', will evolve appropriate norms for the cost of care at different levels of institutions and monitor both the cost and the quality of care in their own institutions. The district health officials will monitor the performance of both public and the private sector institutions in the district and assist them in improving the quality of care and containing cost of care.

2.8.59 During the Tenth Plan appropriate policy initiatives will be taken to define the role of government, private and voluntary sectors in meeting the growing health care needs of the population at an affordable cost. The public sector will develop institutional capability at the central, state and local levels to:

- ☒ evolve policies and strategies for providing healthcare and monitor their implementation;
- ☒ increase public-private-voluntary sector collaborations to meet the health care needs of the poor and vulnerable segments of population;

- ☒ draw up standards for appropriate quality and cost of care and establish accreditation systems for individuals/institutions;
- ☒ monitor and enforce regulations and contractual obligations;
- ☒ promote excellence and ethics among professionals, identify and punish professional misconduct;
- ☒ set up an appropriate and speedy grievance redressal mechanism.

Quality and Accountability in Health Care

2.8.60 Assessment of the quality of health care is often thought to be a value judgement but there are determinants and ingredients of quality, which can be measured. These include assessment of infrastructure and manpower, processes such as diagnosis and treatment or outcome such as case fatality, disability and patient satisfaction. Health care quality evaluation includes safety, effectiveness and timeliness of interventions. It must also include assessment of the performance of the system in terms of meeting the changing needs of the population to stay healthy and learn to live with illness and disability. In recent years, there has been increasing public concern over the quality of health care both because of increasing awareness of the population and the

Introduction of Quality Control System in India will:

- ☒ prevent overuse, under-use, abuse and misuse of facilities;
- ☒ improve effectiveness and efficiency;
- ☒ help to make positive outcomes more likely;
- ☒ help in effective and responsible use of resources;
- ☒ minimise barriers to appropriate care at different levels by matching the levels of care to the level of need;
- ☒ bring accountability into the health system; and
- ☒ ensure that optimum use is made of every rupee invested.

mushrooming of health care institutions particularly in the private sector.

2.8.61 During 1990s, some initiatives were taken to address issues relating to quality of care e.g. inclusion of health sector under the Consumer Protection Act. Some states have attempted to provide a legal framework for the functioning of private health care institutions on the lines of the Bombay Nursing Home Registration Act 1949. These legislative measures have so far not been effectively implemented partly because of the lack of objective criteria for defining 'quality of care' and the fear that enforcing such regulations may increase the cost of care.

2.8.62 During the Tenth Plan quality control concepts and tools will be introduced into every aspect of health care in order to ensure that:

- ☒ the population and the system benefit from defined and institutionalised norms, accountability and responsibility;
- ☒ the Tenth Plan goals are achieved and health indices of the population improve; and
- ☒ health care is made affordable for individuals and the country as a whole.

HUMAN RESOURCE DEVELOPMENT FOR HEALTH

2.8.63 The outcome and impact of any health programme depends on the competencies and skills of the personnel who implement it. At the time of Independence, the country had a population of 300 million. Famine, starvation and epidemics took a massive toll of human life; infant and maternal mortality rates were among the highest in the world and life expectancy was about 33 years. There were about 50,000 medical graduates and 25,000 nurses in the modern system of medicine to provide health care to the population.

2.8.64 The country then embarked on a massive expansion of medical and para-professional training so that the manpower needs for the proposed expansion of the health system are met . Five

Ninth Plan Priorities for Human Resources Development for Health

- ⊗ creation of a district data base on requirement, demand and availability for health manpower in the government, private and voluntary sectors;
- ⊗ periodic updating of information on :
 - ↳ requirement and availability and of different categories of health manpower;
 - ↳ health manpower production based on the needs;
- ⊗ improvement in quality of undergraduate/postgraduate education;
- ⊗ promotion of equitable and appropriate distribution of health manpower;
- ⊗ continuing medical education for knowledge and skill upgradation;
- ⊗ appropriate people and programme orientation; and
- ⊗ continuing multiprofessional education for promoting team work & intersectoral co-ordination.

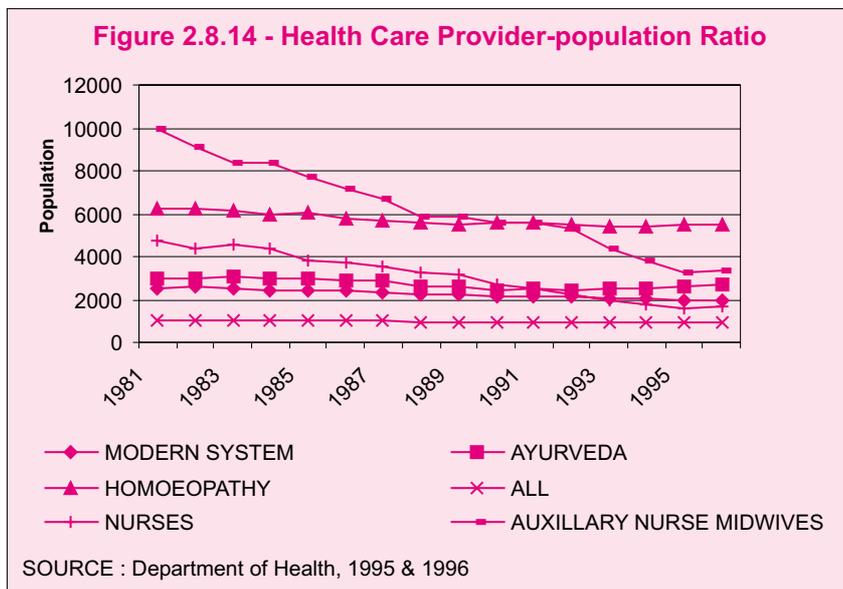
have made rural service compulsory for health professionals and preference is given for those opting for rural services in post-graduate courses. The sustainability and impact of these measures are yet to be evaluated.

2.8.65 During the Tenth Plan medical education will have newer opportunities and challenges. The country has to train adequate number of health professionals with appropriate knowledge, skill and attitude to meet the health care needs of the growing population and dual disease burden. In this era of globalization, India with its excellent teachers and abundant clinical material can become a key player in medical education. The health care institutions can transform India into a major medical tourism destination. Appropriate investment in research and development and quality control can result in a massive expansion of the pharmaceutical sector. The next two decades will show whether the country has successfully used these opportunities to train and provide gainful employment to the highly skilled medical manpower.

decades later there are 181 medical colleges in the modern system of medicine and over 400 ISM&H colleges. The country produces over 17,000 doctors in modern system of medicine annually and a similar number of ISM&H practitioners, nurses/ANMs as well as para professionals. A vast health care infrastructure in the government, voluntary and private sector has been created and is manned by people trained in the country. Personnel costs form a major portion of the investment in health service delivery. In spite of several constraints, Indian health professionals and paraprofessionals have migrated to other countries and have gained global recognition for their knowledge, skills and commitment. However, it is a matter of concern that there are huge gaps in critical health manpower in government institutions that provide health care to the poorer segments of population living in urban slums, remote rural and tribal areas. To address this problem, some states

Health Manpower Planning

2.8.66 Unlike health services planning, health manpower planning in India has not received adequate attention. Sir Joseph Bhore Committee, 1946 recommended a population-based norm for medical (one doctor/population of 1500) and nursing personnel (one nurse/ population of 500). This was



subsequently modified taking into account the changes over the last five decades. The Bajaj Committee suggested that assessment of health manpower requirement should be based on multiple parameters including functionary to population ratio, inter-professional ratio and manpower-mix. Health manpower requirements vary from region to region depending upon stage of epidemiological transition, the availability of institutions, income-elasticity and public and private expenditure on health. Available information on the health care provider-population ratio over the last two decades is given in Figure 2.8.14.

2.8.67 The Ninth Plan envisaged that health manpower planning will be based on the district-specific assessment of available manpower and facilities and the needs and demands of health services. Fine tuning will be done taking into account the manpower needed for implementing national programmes and the manpower requirements in the voluntary and private sector. In order to realistically assess the health manpower availability, the CBHI initiated efforts to obtain reliable and accurate district-wise data on the number of medical, dental, ISM&H professionals, nursing and para professionals and institutions (centre, state, defence services, railways, private sector or voluntary sector). There has been very little progress in this effort; attempts to match the supply of health manpower with the requirement have not even begun. During the Tenth Plan, this database will be created so that decentralised district-based health manpower planning to meet the needs would become possible.

Health Manpower Production

2.8.68 As on June 2001, there were 181 medical colleges out of which 155 (46 of them private) were recognised and 26 (19 of them private) were permitted under section 10A of the Indian Medical Council Act, 1956. A total of 5,39,00 MBBS doctors were registered with the Medical Council of India (MCI) till 2000. At the national level, the number of physicians and specialists available is more than the estimated requirements. The current doctor population ratio is 1:1800 if only the modern system

is considered and 1:800 if ISM&H doctors are also taken into account.

2.8.69 There are massive interstate differences in health indices, health care institutions and health manpower production. Just four states (Karnataka, Andhra Pradesh, Tamil Nadu and Maharashtra) have 81 out of 181 medical colleges. On the other hand populous states like Bihar and Uttar Pradesh with poor health indices and large gaps in health manpower have very few medical colleges. The medical education curricula have not kept pace with the changing requirements of the population or skills required for implementing health and family welfare programmes. The current system of medical education does not appear to enable the students to develop clinical and analytical skills required for functioning effectively in the primary health care settings. The number of family physicians with clinical skills, appropriate people orientation and commitment to improvement of the health status of the community appears to be dwindling. There has been a decline in candidates opting for public health and paraclinical subjects and increasing competition for potentially lucrative clinical and diagnostic specialties. These trends which may have an adverse impact on public health programmes have to be reversed.

2.8.70 During the Tenth Plan under graduate and post graduate training will have to be reoriented to enable students to become competent professionals who can effectively implement programmes aimed at improving the health status of the population. The curriculum may be periodically reviewed and revised in keeping with changing health care needs. Several states have established University of Health Sciences (UHS) to which all medical colleges, dental colleges, para professional and nursing colleges are affiliated. The University ensures uniformity in admission criteria, curriculum and evaluation system and co-ordinates activities aimed at improving the quality of education. During the Tenth Plan all states will be encouraged to establish a UHS.

2.8.71 Initially, most medical colleges were funded either by the central or state government. Over the last two decades, several private medical

colleges have been set up. There have been wide disparities among medical colleges regarding the adequacy of infrastructure, quality of teaching, criteria for admission and fee structure. Concerned about the mushrooming growth and poor quality of medical colleges, the Indian Medical Council Act was amended in 1993 making the permission of the central government mandatory for establishing a medical college, starting a new or higher course of study or training and increase in admission capacity. However, this did not stop the increase in the number of medical colleges. Judicial intervention has to some extent, moderated the differences in the criteria for admission and fee structure between private and government funded institutions.

2.8.72 Medical educationists feel that over years there has been a decline in quality of medical education. This might partly be due to the problems both teachers and students have in coping with the explosive expansion in medical knowledge and technology during the last two decades. The mushrooming of medical colleges and para-professional institutes with inadequate staff and infrastructural facilities has also undoubtedly contributed to the decline in the quality of teaching and training. Implementation of the of the Ninth Plan recommendation regarding setting up a commission on the pattern of University Grants Commission (UGC) to provide financial assistance to medical colleges to improve quality of education may help in arresting the deterioration in quality of medical education. Implementation of another Ninth Plan recommendation that inspections by MCI would be necessary not only for initial recognition but also for continued recognition as medical colleges and admission of students, may go a long way in improving the quality of medical education.

Dental Manpower

2.8.73 At present, there are 142 (113 private) recognised/approved dental colleges in the country with 8900 BDS admissions a year. There are 48 institutions with 869 seats providing postgraduate training. As in the case of medical colleges, there are regional imbalances in the distribution of dental

colleges. The needs of dental paraprofessionals has not been assessed and met. During the Tenth Plan efforts will be made to assess state-wise demand for dental professionals and district-wise need for dental paraprofessionals and take steps to meet the requirements.

Nursing Manpower

2.8.74 Around 7.37 lakh nurses have been registered in the various state nursing councils in the country; it is estimated that only about 40% are in active service. About 1.5 lakh nurses are employed in the government sector. Out of the 654 general nursing-midwives training schools in the country, 465 are run by private/voluntary organizations / missionary institutions. Around 20,000 trained nurses become available annually; the current production capacity is sufficient for filling up vacancies in the Government sector. There is a growing demand for nurses with specialized training, which has to be met. There are over 4 lakh ANMs of whom nearly 1.5 lakh work in the government sector. In some states where there is a shortfall in required number of ANMs, the ANM training schools are being reopened in the government sector.

Paramedical Staff

2.8.75 Adequate paraprofessional support is essential for an efficient and effective functioning health system. Lack of critical para-professional manpower, especially laboratory technicians and male multipurpose workers has been cited as a major factor responsible for poor performance of the tuberculosis and malaria control programmes. The need for different categories of para-medical persons vary between districts and over time. The current needs have to be assessed at district level, and critical gaps filled by skill upgradation and training of unipurpose workers and laboratory technicians working under the disease control programmes.

2.8.76 During the Tenth Plan the changing requirements for para-professionals will be assessed preferably at the district level and necessary steps

taken to meet the requirement through all available training channels. Preference should be given to the 10+2 vocational training courses because

- ☒ it would improve career prospects of the persons trained;
- ☒ the problem of trained para professionals not staying in the place of posting will be reduced if training is done in the districts after assessing the need.

2.8.77 The UHS will ensure that appropriate curricula are evolved and followed. The state governments will amend the recruitment rules for these posts so that those who qualify through vocational courses and open university system become eligible for the jobs in the government, voluntary and private sectors. Efforts to set up paraprofessional council and utilise the UHS to improve the standard of education and training of paraprofessionals will continue during the Tenth Plan period

Continuing Medical Education (CME)

2.8.78 Continuing education and skill upgradation are essential for all health professionals. Currently, in-service training courses are being carried out as a part of all national programmes. CME programmes are being carried out in various institutions, such as the National Academy of Medical Sciences, National Board of Examinations, and various professional bodies and associations. However their outreach, quality and content are sub-optimal. CME efforts will receive greater impetus if the proposal that all medical practitioners have to undergo knowledge and skill up gradation and re-certification every five years is implemented. Critical thrust areas such as the ongoing and new national programmes, rational use of drugs, protocol for management of common ailments, quality control in clinical practice, infection control and waste management in health care settings require focused attention. The National Academy of Medical Sciences has proposed that they will hold intramural CME in these topics where eminent professionals will participate and the proceedings will be put on the website and made accessible to all. These efforts will continue to

receive support during the Tenth Plan. Open Universities will be expected to play a major role in periodically updating the knowledge of various categories of health personnel in a cost effective and efficient manner.

Bio-informatics, Telematics and Distance Education

2.8.79 Information Technology is now one of the major components of the technological infrastructure for health management. All sub-sectors dealing with the generation, transmission and utilisation of demographic and epidemiological data such as bio-informatics, bio-statistics, HMIS and the decision support systems (DSS) are finding increasing use in health planning and management. The nationwide network of NICNET provides rapid reporting mechanism for health information, MEDLARS Biomedical Informatics Programmes provides ready access to medical databases to post graduates and research workers as well as practising physicians. Planning Commission has provided additional central assistance to the UHSs in Karnataka, Andhra Pradesh, Tamil Nadu, Punjab and Maharashtra for strengthening of libraries and networking them through IT. This effort has to be augmented and all medical colleges need to be brought into the network.

2.8.80 Telemedicine programmes bring experts together to assist local doctors in the management of complicated cases. A pilot project on telemedicine in primary health care is currently ongoing in Maharashtra. Some of the major hospitals have taken up online consultation service with other specialists within the country as well as abroad. Efforts are underway to link tertiary care institutions especially in the north-eastern states with major super-speciality institutions in other regions so that patients could benefit from tele-consultations.

PREVENTION AND MANAGEMENT OF COMMUNICABLE DISEASES

2.8.81 The control of communicable diseases has received priority attention right from independence. Effective antibiotic therapy for infections and

Ninth Plan strategies for improving communicable disease control programmes

- ☒ Rectification of identified defects in design and delivery of diseases control programme.
- ☒ Filling critical gaps in infrastructure and manpower.
- ☒ Making service delivery responsive to user's needs.
- ☒ Ensuring that health care providers have the necessary skills and support, including referral facilities and supplies.
- ☒ Improving community awareness, participation and effective utilisation of available services.
- ☒ Use of PRIs in improving community participation and monitoring implementation of programmes.

vaccines for the prevention of infections were the major factors responsible for the steep decline in crude death rate from 25.1 in 1951 to 8.7 in 1999. However, morbidity due to communicable diseases continues to be high. Deteriorating urban and rural sanitation, poor liquid and solid waste management and overcrowding have contributed to the increasing prevalence of communicable diseases. Treatment of infections has become more difficult and expensive because of the emergence of antibiotic resistance; increasing attention is urgently needed for prevention of hospital acquired infections through effective implementation of infection control measures. Even though health is a state subject, the central government has provided additional funds through centrally sponsored schemes for disease control and this has paid rich dividends. Smallpox and guinea worm infections have been eradicated. There has been a substantial reduction in leprosy and polio cases and elimination of these two disease is likely to be achieved in the next few years. However malaria, tuberculosis and HIV infection have not shown any reduction and require continued vigorous attempts at containment and control.

2.8.82 The strategies and programmes initiated in the Ninth Plan for control of communicable

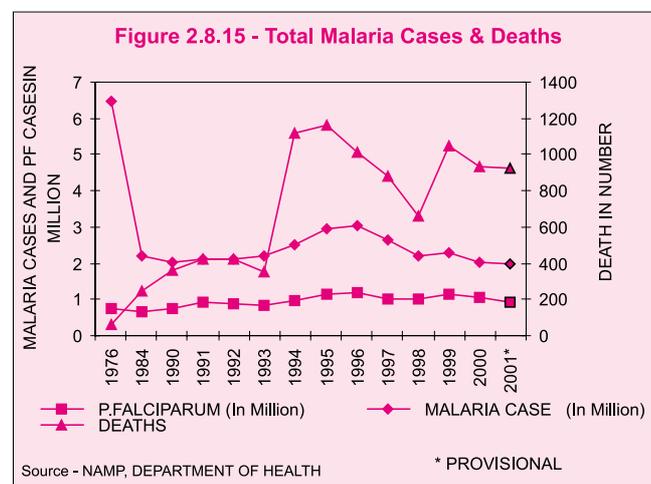
diseases, will continue in the Tenth Plan. Modalities to improve delivery of services pertaining to these programmes through the existing health services will be worked out. Efforts will be made to improve states ownership of the programmes, participation of the community, private sector and NGOs. Local accountability and intersectoral co-ordination will be improved through the involvement of PRIs. Evaluation and operational research to rectify problems in implementation and improving efficiency will receive attention.

National Vector Borne Disease Control Programme

2.8.83 The National Malaria Control Programme, the first centrally sponsored programme, was initiated in 1953. The National Anti Malaria Programme currently deals with malaria, filaria, kala-azar, japanese encephalitis and dengue. During the Tenth Plan the programme will be implemented as National Vector Borne Disease Control Programme.

Malaria

2.8.84 In the early 1950s, malaria was not only a major cause of morbidity and mortality but also one of the major constraints in the ongoing developmental efforts. The National Malaria Control Programme had spectacular success initially in bringing down incidence of malaria from 75 million cases with 0.8 million deaths to 0.1 million cases



with no death by 1965 even though there was no well-established health care infrastructure in the rural areas. However, there was a resurgence of malaria subsequently. In 1976, over 6.7 million cases were reported. From 1977, the National Malaria Eradication Programme started implementing a modified plan of operation for control of malaria. In spite of these efforts, the number of reported cases of malaria have remained around two million in the 1990s (Figure 2.8.15).

2.8.85 In view of the high incidence of malaria (particularly of falciparum malaria) and high mortality, 100 per cent central assistance under the

Ninth Plan strategy

- ☒ early diagnosis and prompt treatment
- ☒ selective vector control and personal protection
- ☒ prediction, early detection and effective response to outbreaks
- ☒ IEC

Target for 2002

- ☒ ABER of over 10 per cent
- ☒ API of less than 0.5 per cent
- ☒ 25 per cent reduction in morbidity and mortality due to malaria

NAMP is being provided to the north-eastern states since 1994. Financial assistance was also obtained from the World Bank for the Enhanced Malaria Control Programme (EMCP) to cover 100 predominantly *P. falciparum* malaria endemic and tribal-dominated districts in Andhra Pradesh, Bihar/Jharkhand, Gujarat, Madhya Pradesh/Chattisgarh, Maharashtra, Orissa and Rajasthan and 19 cities. The project also has the flexibility to divert resources to any area in case of malaria outbreak. In other areas, the NAMP continues to be implemented as a centrally sponsored scheme on a 50:50 cost-sharing basis between the Centre and states in urban and rural areas. The central government provides drugs, insecticides and larvicides and also technical assistance/guidance as and when the

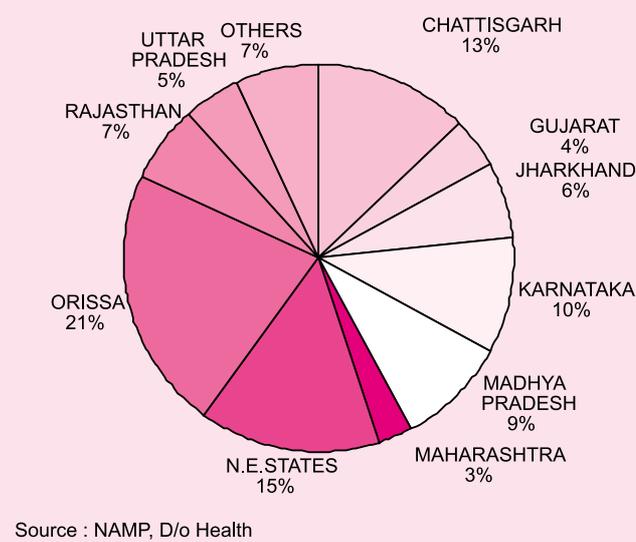
Strategies for vector control include:

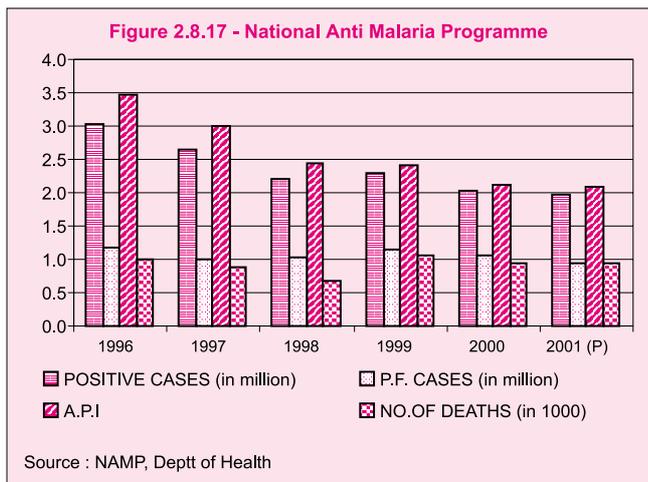
- ☛ Indoor spraying with appropriate insecticide in areas where API is over 2
- ☛ Anti-larval measures Strategies for vector control in urban areas include:
 - ☛ Introduction of medicated mosquito nets
 - ☛ Use of larvivorous fishes and biolarvicides

state governments require. The state governments meet the operational cost, including the salaries.

2.8.86 The percentage distribution of malaria cases in various states is given in Figure 2.8.16. The performance during the Ninth Plan period is shown in Figure 2.8.17. The decline in cases was not commensurate with the substantial increase in the funding for the activities. The rising proportion of *P. falciparum* malaria, increasing vector resistance to insecticides and the growing parasite resistance to chloroquin will render malaria containment and control more difficult in the Tenth Plan period. The Ninth Plan goal for reduction in API and morbidity has not been achieved (Figure 2.8.17). The programme review by the Government of India and the World Bank showed that progress

Figure 2.8.16 - Percentage Distribution of Malaria Cases - 2001





in capability building for malaria surveillance and response at the district level, early detection and treatment of cases, monitoring drug and insecticide resistance and insecticide spraying was slow. The utilisation of funds under the programme has been sub-optimal (Table 2.8. 4)

Table 2.8.4
NAMP-Outlays and Expenditure

Rs. Lakhs

YEAR	OUTLAY	EXPD./RE
9TH PLAN	103000.00	
1997-98	20000.00	14276.00
1998-99	29700.00	16371.00
1999-00	25000.00	17601.00
2000-01	25500.00	18832.00
2001-02	22500.00	23400.00*

Source : Department of Health

* Anticipated Expd.

Table 2.8.5
Cases and Deaths due to Kala-Azar

Year	Bihar		West Bengal		Country	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
1996	25056	674	NA	NA	27049	687
1997	15948	251	1450	3	17429	255
1998	12229	211	1113	6	13577	226
1999	11627	277	1091	6	12869	297
2000 (P)	12039	124	950	8	14239	132

Source: Report of the Working Group on Communicable Diseases for the Tenth Plan. P-Provisional

Kala Azar

2.8.87 Kala azar is endemic in 33 districts of Bihar, 11 districts of West Bengal and three districts in Jharkand and sporadic cases have been reported in Uttar Pradesh. After a reported increase in the number of cases and deaths due to kala-azar between 1989-91 period, an intensive programme for containment of kala azar was launched in 1992.

2.8.88 The strategy for control of infection includes interruption of transmission through insecticidal spraying with DDT and early diagnosis and treatment of kala azar cases. The Central Government provides the insecticides and anti kala azar drugs while the state governments meet the expenses involved in the diagnosis and treatment of cases and insecticide spraying operations. The number of reported cases and deaths (Table 2.8.5) have not shown significant decline during the Ninth Plan period. This is due to inadequate insecticide spraying operations and poor outreach of diagnostic and curative services. Increase in drug resistance to sodium stibogluconate has been reported in the Muzffarpur and Darbhanga districts of Bihar. Though sand fly is usually sensitive to DDT, pockets of insecticide resistance have been reported from Bihar.

Dengue/Japanese Encephalitis (JE)

2.8.89 Periodic dengue outbreaks occur in many parts of India, in both rural and urban areas. Mortality is usually low but may be high in cases of dengue

shock syndrome and dengue haemorrhagic fever (DHF). Diagnostic tests for dengue are not readily available. Japanese encephalitis outbreaks have been reported mainly in Andhra Pradesh, Karnataka, Uttar Pradesh and West Bengal. Diagnostic tests and case management facilities for Japanese encephalitis are not readily available in many parts of the country. In endemic states, efforts are being made to improve early diagnosis, proper management and rehabilitation of those with residual disabilities. Innovative strategies for vector control are being investigated. The reported total cases and deaths due to dengue/Japanese encephalitis during the Ninth Plan are given in Table 2.8.6.

Table 2.8.6
Cases and Deaths due to Japanese Encephalitis and Dengue/DHF

Year	JE		DENGUE/DHF	
	Cases	Deaths	Cases	Deaths
1997	2516	632	1177	36
1998	2120	507	707	18
1999	3428	680	944	17
2000 (P)	2313	535	605	7

Source : Department of Health, 2001.

Filariasis

2.8.90 Filariasis is endemic in 19 states/union territories. Estimates based on surveys by Filariasis Survey Units suggested that:

- ☒ about 454 million people (120 million in urban areas) are living in known endemic areas.
- ☒ there are 29 million filariasis cases in the country and 22 million micro-filaria carriers.

2.8.91 Currently there are 206 filaria control units; 199 filaria clinics; and 27 filaria survey units. A total of 48 million people in urban areas are being protected through anti-larval measures. The Indian Council for Medical Research (ICMR) is conducting

a feasibility and efficacy study on a mass annual single dose administration of DEC and albendazole drugs for the control of filariasis. Kerala has initiated a pilot project for monitoring and management of mosquitoes, in three filariasis endemic districts (Kottayam, Alappuzha and Ernakulam) for the control of vector-borne diseases. The progress of such innovative initiatives will be evaluated and, if found feasible, they will be replicated. The Government of India is a signatory to the UN resolution to eliminate lymphatic filariasis by 2020. The National Health Policy (NHP), 2002 envisages the elimination of lymphatic filariasis by 2015.

Tenth Plan Initiatives

2.8.92 During the Tenth Plan, the National Vector-Borne Disease Control Programme will be implemented through the existing health care infrastructure. The programme will focus on:

- ☒ training of health personnel in the diagnosis of vector-borne diseases and appropriate treatment including referral;
- ☒ improving reporting, recording and monitoring of vector-borne diseases, including cases treated in the private sector, so that reliable estimates of the prevalence of vector borne disease is available;
- ☒ monitoring drug and insecticide resistance;
- ☒ using standardised protocol for the diagnosis and management of these diseases;
- ☒ involvement of PRIs to:
 - ↻ chalk out the malaria worker's schedule;
 - ↻ inform the community and the gram sabha of the spraying operations and seek their cooperation;
 - ↻ ensure that insecticide spraying is started well in advance;
 - ↻ identify villages, which are at the risk of epidemic outbreak;

- ↪ ensure the availability of staff as well as consumables for diagnosis and drugs for treatment;
- ↪ ensure that the malaria worker/male multi-purpose worker identify fever cases, take blood smears and ensure that the community follows treatment advice.
- ↪ ensure that smear positive cases are given radical treatment and monitor implementation of the programme;
- ☒ improvement in IEC at patient, family and community levels;
- ☒ involvement of NGOs and the private sector in diagnosis and treatment of malaria cases;
- ☒ encourage the pharmaceutical industry, manufacturers of insecticides and bednets to produce low cost products for local use; back up these efforts through IEC and social marketing.
- ☒ evaluate community acceptance of insecticide-treated bed nets/curtains for personal protection;
- ☒ research studies on
 - ↪ vector bionomics and behaviour
 - ↪ bio-environmental methods of vector control;
 - ↪ screening and development of new anti-malarial drugs especially herbal products;
 - ↪ evaluation of new drugs and insecticides;
- ☒ include malariagenic potential as a parameter for health impact assessment of developmental projects.
- ☒ exploring the cost effectiveness of the use of remote sensing for mapping the breeding habitats of mosquitoes and prediction of densities of vector species, especially in remote hilly and tribal areas.

Goals for Tenth Plan

Malaria:

- ↪ ABER over 10 per cent
- ↪ API 1.3 or less
- ↪ 25 per cent reduction in morbidity and mortality due to malaria by 2007 and 50 per cent by 2010 (NHP 2002)

Kala azar

- ↪ Prevention of deaths due to kala azar by 2004 with annual reduction of at least 25 per cent
- ↪ Zero level incidence by 2007 with annual reduction of at least 20 per cent using 2001 as the base year
- ↪ Elimination of kala azar by 2010 (NHP 2002)

Revised National Tuberculosis Control Programme (RNTCP)

2.8.93 Tuberculosis (TB) is a major public health problem in India, with an estimated 40 per cent of the population suffering from the infection. India accounts for nearly one-third of the global incidence of tuberculosis. The estimated prevalence of tuberculosis is 1.4 per cent, and sputum positive TB prevalence is estimated to be in the range of 4/1000 to 5/1000. A national sample survey to assess the current epidemiological situation of tuberculosis in different zones is currently under way. Some studies indicate that since 1980s there has been a progressive increase in primary and acquired multi-drug resistant cases of tuberculosis.

2.8.94 The aim of the fight against tuberculosis at the individual level is to cure the disease, to preserve and quickly restore the individual's work capacity, allow the person to be with the family and maintain their socio-economic status. At the community level, the aim is to reduce the risk of infection through effective case finding and appropriate management of sputum positive

case. The National Tuberculosis Control Programme was initiated in 1962 as a centrally sponsored scheme. The programme was aimed at early case detection in symptomatic patients seeking health care, through sputum microscopy and X-ray and effective domiciliary treatment with chemotherapy. BCG vaccination at birth for protection against tuberculosis infection was incorporated into the immunisation programme. Introduction of the short course chemotherapy, which shortened the duration of treatment to nine months, was begun in selected districts in 1983. In spite of the availability of effective chemotherapy, there has not been any decline in the morbidity or mortality due to TB because of low case detection, case holding and cure rates. The programme was reviewed in 1992 and a Revised National Tuberculosis Control Programme (RNTCP) was drawn up with emphasis on:

- ☒ diagnosis through sputum microscopy;
- ☒ uninterrupted supply of drugs for short course chemotherapy;
- ☒ direct observation of treatment with short course chemotherapy (DOTS) to improve compliance; and
- ☒ systematic monitoring, evaluation and supervision at all levels.

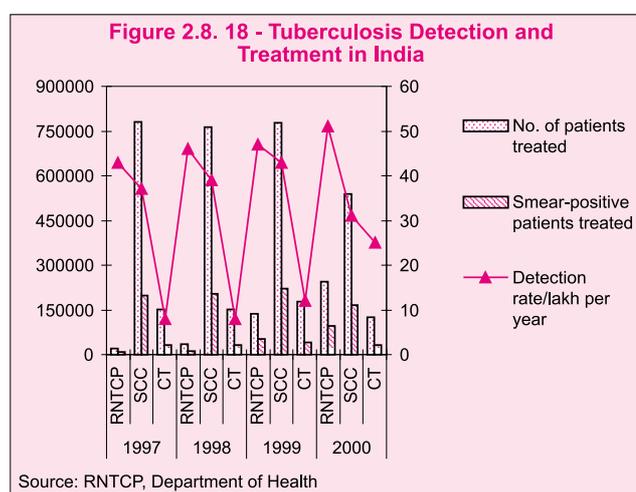
2.8.95 There were delays in the initiation of the RNTCP but a rapid scale-up of the programme began in late 1998. According to programme reports:

- ☒ state and district societies have been formed and provided with funds.
- ☒ more than 1,50,000 health workers and 1,400 supervisors have been trained.
- ☒ diagnostic facilities have been established in more than 3,000 laboratories.
- ☒ the coverage of population under the programme increased from 89 million in 1998-99 to around 365 million in 2000-01.

- ☒ in the DOTS districts, the proportion of TB sputum positive cases detected and treatment completion rates have improved.

an attempt to improve coverage, increased participation of NGOs and private practitioners is envisaged. The programme is being closely monitored.

2.8.96 The performance under RNTCP during the Ninth Plan is given in Figure 2.8.18. A joint programme review by the Government of India and the World Bank in February 2000 showed that there was improvement in diagnosis, drug supply and proportion of patients cured in DOTS districts. The major problems in RNTCP continued to be:



- ☒ poor coverage due to gaps in primary health care infrastructure and manpower;
- ☒ poor quality of sputum examination;
- ☒ diagnosis not based on evolved criteria;
- ☒ use of non standard treatment regimens, especially by private practitioners;
- ☒ poor record keeping, lack of follow up care;
- ☒ lack of involvement of health care providers;
- ☒ poor coordination; and
- ☒ patient's difficulties in compliance with DOTS regimen.

2.8.97 It is now recognized that there are inherent problems in ensuring compliance with long-term drug therapy for any chronic disease. It is essential that the utility, acceptability and sustainability of the DOTS strategy is evaluated and if necessary mid-course corrections carried out. Utilisation of funds has been sub-optimal in the first three years of the Ninth Plan (Table-2.8.7).

Table 2.8.7
RNTCP- Outlays/Expenditure

(Rs. in Lakhs)

YEAR	OUTLAY	Expd./RE
9TH PLAN	45000.00	
1997-98	9000.00	3131.00
1998-99	12500.00	6888.00
1999-00	10500.00	8754.00
2000-01	12500.00	10875.00
2001-02	13600.00	13200.00*

Source: Department of Health

* Anticipated Expd.

During the Tenth Plan, the Focus will be on:

- ☒ expansion of the RNTCP to cover population of over 800 million by 2004 and the entire country by the end of the Tenth Plan;

- ☒ involvement of medical colleges, TB hospitals, hospitals run by the armed forces, railways, corporate sector, NGOs and private practitioners in the pro-gramme;
- ☒ involvement of PRIs to ensure the availability of requisite staff;
- ☒ quality assurance of sputum microscopy and quality control of drugs;
- ☒ provision of sufficient stock of drugs and consumables in the PHCs/CHCs;
- ☒ facilitate referral;
- ☒ inform the community of time schedule for availing treatment;
- ☒ evaluation of RNTCP and operational research to improve performance; and
- ☒ research and development efforts to develop newer drugs to tackle drug resistance, testing of new generation of TB vaccines;

2.8.98 The NHP envisages a 50 per cent reduction in mortality due to tuberculosis by 2010. Goals for the tenth plan are indicated in Table 2.8.8.

Table 2.8.8
Goals for the Tenth Plan

INDICATOR	2002	2003	2004	2005	2006	2007
Coverage under RNTCP (Population in Million)	550	650	800	900	1000	1070
Number of patients to be examined (Million)	2.08	2.50	3.04	3.42	3.80	4.07
Total Number of patients to be put on treatment under RNTCP (Million)	0.52	0.61	0.75	0.85	0.94	1.00
New smear positive patients to be put on treatment under RNTCP (Million)	0.21	0.24	0.29	0.33	0.37	0.40
Cure rate in new smear positive patients in RNTCP (%)	83	84	>85	>85	>85	>85

Source : Department of Health

National Leprosy Eradication Programme (NLEP)

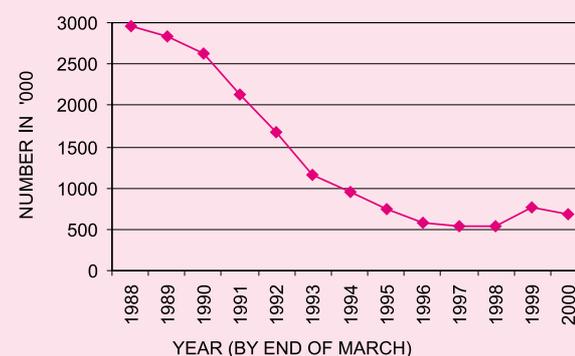
2.8.99 Leprosy has been a major public health problem in India. In 1984 it was estimated that there were nearly four million cases of leprosy in the country, 15 per cent of whom were children. Recognising that leprosy is a major cause of disability and the infected persons face social ostracism, several NGOs and social service/voluntary agencies had taken up treatment and rehabilitation of leprosy patients in the pre-Independence period itself. However, the outreach of these services was very limited. With the availability of multi-drug therapy (MDT), it became possible to cure leprosy cases within a relatively short period of six to 24 months. The NLEP was launched in 1983 as a 100 per cent funded centrally sponsored scheme with the goal of arresting disease transmission and bringing down the prevalence of leprosy to one in 10,000 by 2000. The strategy adopted to achieve this was:

- ☒ early detection of leprosy cases through active community based case detection by trained health workers;
- ☒ regular treatment of cases with MDT administered by leprosy workers in endemic districts and mobile leprosy treatment units and primary health care workers in moderate to low endemic areas/districts;
- ☒ intensified health education and public awareness campaigns to remove the social stigma attached to the disease; and
- ☒ appropriate medical rehabilitation and ulcer care services.

2.8.100 Over the years there has been a substantial decline in the prevalence of leprosy from 57/10,000 in 1981 to 5/10,000 in the year 2000 (Figure 2.8.19). The focus during the Ninth Plan was on:

- ☒ intensifying case detection and MDT coverage in states with a high prevalence of leprosy and areas that are difficult to access;

Figure 2.8.19 - Prevalence of Leprosy Cases (1988-2000)

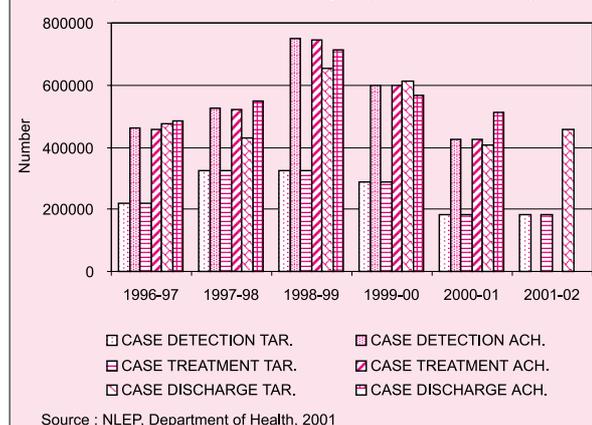


Source: NLEP, Department of Health, 2001

- ☒ preparing for and initiating horizontal integration of the leprosy programme into primary health care;
- ☒ strengthening laboratory services in PHCs/CHCs for detection of leprosy cases;
- ☒ establishing a surveillance system for monitoring time trends in prevalence of leprosy;
- ☒ providing greater emphasis on disability prevention and treatment; and
- ☒ implementation of the Modified Leprosy Elimination Campaign (launched in 1997).

2.8.101 The performance of the NLEP during the Ninth Plan is shown in Figure 2.8.20. The department of health has initiated steps for the phased integration of the vertical programme within the general health services by training health care personnel in the detection and management of leprosy cases, making MDT available at all health facilities, improving disability and ulcer care and strengthening of monitoring and supervision.

Figure 2.8.20 - National Leprosy Eradication Programme



Source: NLEP, Department of Health, 2001

Outlays and utilisation of funds during the Ninth Plan period is shown in Table 2.8.9.

Table 2.8.9
NLEP – Outlays and expenditure

(Rs in crore)

YEAR	OUTLAY	EXPD./RE
9TH PLAN	301.00	
1997-98	75.00	79.56
1998-99	79.00	78.03
1999-00	85.00	82.05
2000-01	74.00	73.86
2001-02	75.00	75.00*

Source: Department of Health, 2001

* Anticipated Expd.

2.8.102 During 1997-98, the duration of treatment with MDT was reduced from 24 months to 12 months for multi-bacillary patients and from 12 months to six months for pauci-bacillary patients. Single dose rifampicin, ofloxacin and minocycline (ROM) treatment for single lesion patients was introduced. Prior to the initiation of the fixed dose treatment, treatment was continued until clinical inactivity. With fixed dose treatment, patients are released from treatment once the duration of treatment is completed. Under the programme, smear examination is optional, it is, therefore, difficult to determine cure rates and relapse rates. It is important that surveillance is strengthened so that relapses are detected early.

2.8.103 As of 2001, the estimated prevalence rate of leprosy is 4.3 in 10,000. Elimination level (PR < 1/10,000) has been achieved in Nagaland, Haryana, Punjab, Mizoram, Tripura, Himachal

Pradesh, Meghalaya, Sikkim, Jammu and Kashmir, Rajasthan, Manipur and Assam. States that are close to achieving elimination (1-2/ 10,000) include Gujarat, Kerala, Arunachal Pradesh, Lakshadweep. Leprosy is now endemic mainly in the states of Bihar, Uttar Pradesh, Orissa, West Bengal, Madhya Pradesh, Jharkhand and Chattisgarh. These states account for 64 per cent of the country's case load, with Bihar alone contributing 24 per cent.

2.8.104 The Modified Leprosy Elimination Campaign (MLEC), aimed at the detection of unidentified cases, was taken up first in Tamil Nadu in 1997 and then extended to Maharashtra, Orissa, Gujarat, the Jammu division of Jammu and Kashmir and Daman and Diu during 1997-98. It was subsequently extended to all districts during 1998-99. Performance under MLEC is shown in Table 2.8.10.

2.8.105 Some of the evaluation studies indicate that during the MLEC there was both over diagnosis and under diagnosis in some districts as the detection was done by a large number of newly-trained persons. However, this campaign provided a mechanism for involving the entire health services and paved the way for the progressive integration of leprosy care within the health service infrastructure.

2.8.106 The NLEP has been successful in reducing the number of leprosy cases. However, this will not result in any immediate decline in the number of patients who have deformities. There is a need to give a major thrust to surgical correction of deformities so that the functional status of individuals can improve. So far 210 district leprosy societies were provided funds for conducting disability/ulcer care management training. Gujarat

Table – 2.8.10
Performance under MLEC

Population In Lakhs		No. of suspected cases	No. of confirmed cases	No. of single lesion	PR before MLEC	PR after MLEC	% increase in PR
Enumerated	Examined						
8209.67	6448.71	2858267.00	454290.00	53115.00	4.75	10.02	110.95

Source : MLEC 1998-99PR – Prevalence rate/10,000.

mobilised experienced surgeons from all over the country to undertake reconstructive surgery in different district hospitals so that patients get treatment near their residence. The impact and cost effectiveness of these initiatives need to be assessed.

2.8.107 The Tenth Plan goal is to eliminate leprosy as a public health problem by bringing prevalence to less than 1/10,000. The strategy to achieve this will focus on:

- ☒ completing horizontal integration of the programme into the general health care system by 2007. The personnel employed under the NLEP will be transferred to the states during the Tenth Plan;
- ☒ skill upgradation and redeployment of the over 30,000 leprosy workers and laboratory technicians so that existing gaps in male multi-purpose workers and laboratory technicians in PHC/CHS are filled and these workers get integrated into the primary health care system. This will result in improvement in all health programmes, including the leprosy programme;
- ☒ training of the existing personnel in primary health care institutions in the early detection and management of leprosy patient; identification and referral of those with complications;
- ☒ re-constructive surgery to improve functional status of individuals;
- ☒ inter-sectoral collaboration for rehabilitation of leprosy patients;
- ☒ increased involvement of PRIs/NGOs in the detection and management of leprosy patients; gram sabhas can facilitate house-to-house surveys by leprosy workers; and
- ☒ the panchayats can inform the community about institutions where facilities for treatment are available and facilitate referral.

National AIDS Control Programme

2.8.108 Sexually transmitted diseases (STD) have been a global problem since time

immemorial. In India, a National STD Control Programme has been in operation since 1967 but its outreach and coverage have been poor. There is no nation-wide surveillance system for STD. Available data from small-scale studies indicate that the annual incidence of STD may be about 5 per cent (40 million new cases every year). Small scale studies have suggested that over the last three decades, there has been some increase in sexual promiscuity and perhaps also in prevalence of STD. However, because of the availability of effective treatment, the increase, if any, in the incidence of STD has not resulted in rising morbidity or mortality rates.

2.8.109 With the advent of HIV infection, in the late 1970s and early 1980s, there has been a dramatic change in the situation because there is no effective drug for the treatment, or vaccine for protection against, HIV infection. In the early 1980s, the Acquired Immuno-Deficiency Syndrome (AIDS) was perceived as a rapidly fatal disease affecting young persons; health sector took up the challenge of combating and containing the infection. Over the last two decades the natural history of the disease has been documented and it is now realised that HIV infection has a long, silent phase, and that AIDS represents the pre-terminal phase of the infection. Sustained multi-sectoral efforts are needed to contain the infection, and combat the adverse consequences on the affected person, family, community and the country.

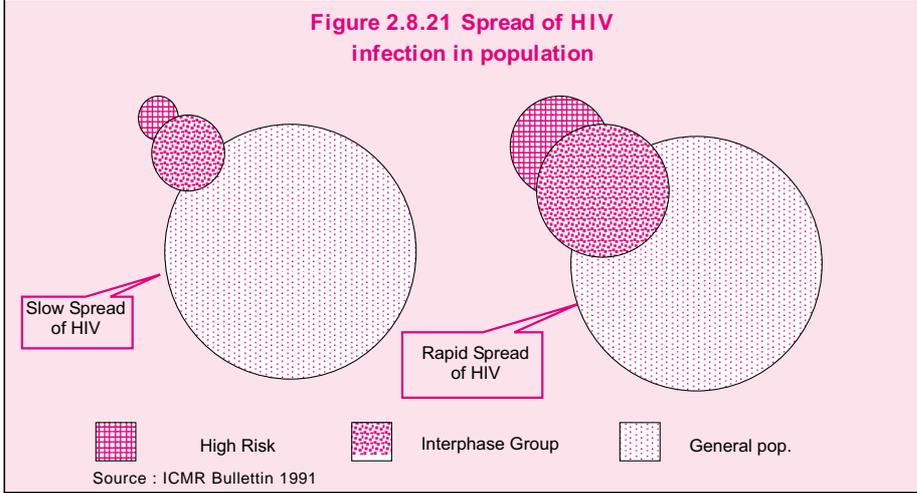
2.8.110 The load of HIV infection in the community depends upon the prevalence of infection in three groups of population – the high-risk group, the interphase group and the low risk group. The high risk group (HRG) is a relatively small group e. g. commercial sex workers, intravenous (IV) drug users. Soon after the introduction of infection in the community, there is a steep rise in prevalence of infection in this group because they are frequently exposed to the risk of infection. The inter-phase group consists mainly of men and women who have multiple sex partners. They form the link through

which infection spreads to the numerically vast low risk group of the general population. The general population (low risk group) acquires HIV infection mainly from spouses who have multiple sex partners. The size of the three groups and the extent of the interphase between them determines magnitude of the HIV infection in any country or community; these factors account for most of the observed differences between countries in the prevalence of HIV infection (Figure 2.8.21). Global epidemiological data on HIV infection indicate that soon after the introduction of the infection in the community seropositivity rates are low. In the next phase the infection spreads to susceptible persons in vulnerable groups resulting in steep rise in seropositivity rates. Finally in the third phase the sero positivity rates plateau when the number of persons who get infected is similar to the number who die of HIV infection. The steepness of the slope and the rapidity with which plateau is reached are determined by the proportion of susceptible at-risk persons in the community and the effective use of prophylactic measures by the risk groups.

2.8.111 India has the distinction of initiating a national sero surveillance in 1986 to define the magnitude and dimension of HIV infection in the silent phase of the HIV epidemic long before AIDS cases were reported. Currently, HIV infection in the general population is seen in all states both in the urban and rural areas. The apparent

differences between and within states in the prevalence of HIV infection may, to a large extent, be due to differences in the type and number of persons screened. Available data from sentinel surveillance suggests that over the last two decades, there has been a slow but progressive rise in the prevalence of infection in all groups in all states. The estimated number of HIV infected person rose from one to two million in 1991, to 3.5 million in 1998 and 3.9 million in 2000. More than 50 per cent of infected persons are women and children. Every year, approximately 30,000 deliveries in India occur among sero-positive women and between 6,000 to 8,000 infants are peri-natally infected with HIV. At present, the number of AIDS patients in the country is small. However, over the next decade, persons who got infected in the 1980s and 1990s will develop AIDS, resulting in a steep increase in the number of AIDS patients.

2.8.112 In spite of the relatively low investment in and low profile of the National AIDS Control Programme, the prevalence of HIV infection in India is relatively low. Some of the projections made by the National AIDS Control Organisation (NACO) suggest that HIV infection in India may reach the plateau by 2010. The UN Population Division had computed the impact of HIV infection on longevity in different countries/regions. There has been a steep fall in longevity in sub Saharan Africa. In India there has been only a small reduction in expected improvement in longevity



(Figure 2.8.22). The initiation of sero-surveillance during the silent phase, implementation of a multi-pronged strategy for HIV infection containment and control, the cultural ethos, relatively low IV drug use and dedicated work done by committed professionals are some of the factors responsible for this. However, because of the one billion plus population, India is likely to have the largest number of cases of and deaths due to AIDS.

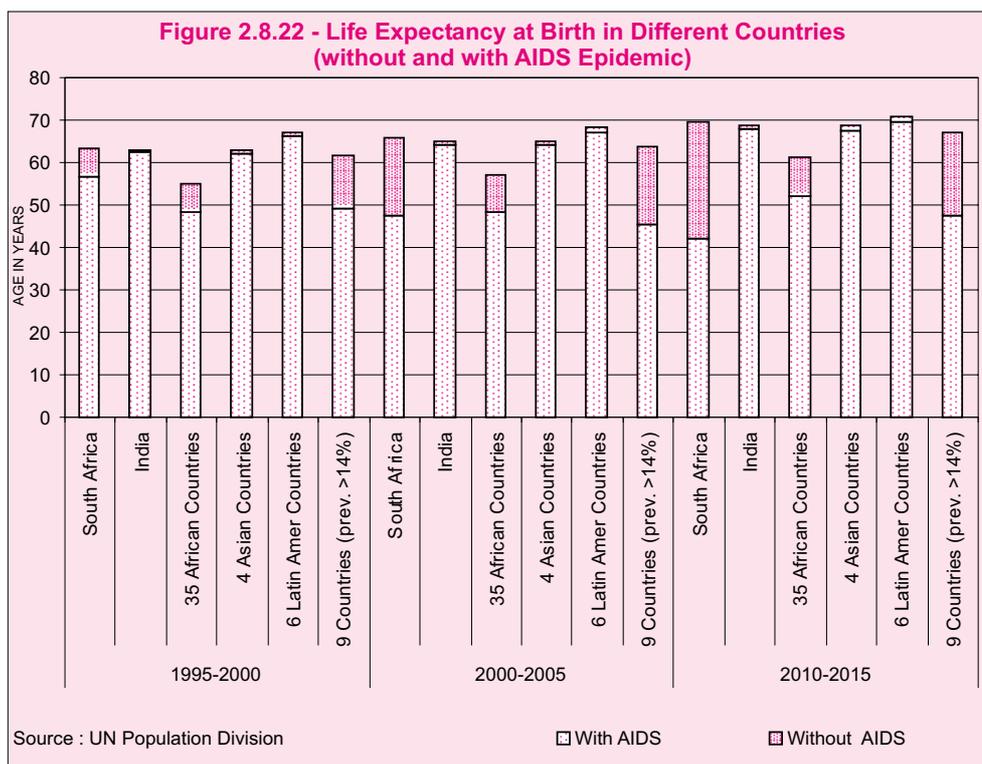
2.8.113 A National AIDS Control Programme (NACP) Phase I was launched in 1992 with World Bank assistance and was completed in 1999. Phase II of the programme, with funding from World Bank, Department for International Development (DFID) and United States Agency for International Development (USAID) is currently under way. AIDS Phase II programme focuses on:

- ☒ reducing HIV transmission among the poor and marginalised high risk group population by targeted intervention, STD control and condom promotion;
- ☒ reducing the spread of HIV among the general population by reducing blood-borne transmission;

Capacity building

- ☛ Awareness generation among all segments of population through Family Health Awareness campaigns;
- ☛ Focused attention and counselling to adolescents, sex workers, drug users, migrant labourers;
- ☛ Improvement in the quality of and access to condoms including social marketing;
- ☛ Hospital infection control and waste management to reduce accidental spread of infection in health care settings;
- ☛ Clinical trials on chemotherapy to prevent mother to child transmission;
- ☛ Establishment of behavioural surveillance.

- ☒ promotion of IEC, voluntary testing and counselling;
- ☒ developing capacity for community-based low cost care for people living with HIV/AIDs;



Infrastructure set up by NACO

Modernisation and strengthening of :

- ☒ 815 blood banks;
- ☒ 504 STD clinics in district hospitals;

Establishment of :

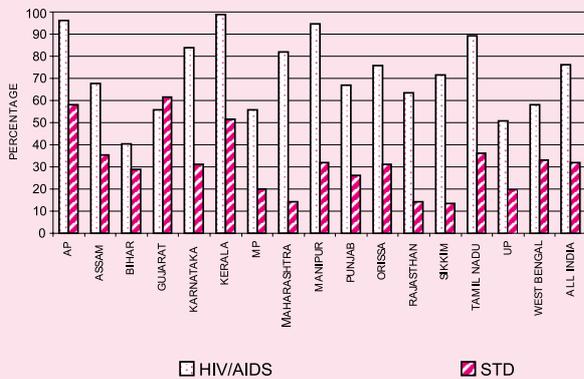
- ☒ 40 blood component separation facilities;
- ☒ 142 voluntary blood testing centers;
- ☒ 320 sentinel sites for monitoring the time trends in prevalence of HIV infection;
- ☒ 570 targeted intervention for prevention and management of HIV infection in high risk groups;
- ☒ low cost community based care for people living with HIV/AIDS.

- ☒ strengthening implementation capacity at the national, state and panchayat level through appropriate arrangements and increasing timely access to reliable information;
- ☒ forging inter-sectoral linkages between public, private and voluntary sectors.

All these efforts are being monitored.

2.8.114 The recently concluded behavioural survey and the NFHS-2 (1998-99) have shown that over two-third of the population knows about HIV infection. There are considerable urban-rural and inter-state differences. Awareness about STD was much lower than that about HIV infection (Figure-2.8.23). The outlay and expenditure on National

Figure 2.8.23 - Proportion Of Respondent Who Had Ever Heard of HIV/AIDS and STD



SOURCE : NACO, Department of Health

AIDS Control Programme during the Ninth Plan is given in Table 2.8.11.

**Table 2.8.11
AIDS Control Programme - Outlays & Expenditure (Rs lakh)**

YEAR	OUTLAY	EXPENDITURE
9TH PLAN	76000.00	
1997-98	10000.00	12100.00
1998-99	11100.00	9936.00
1999-00	14000.00	13525.00
2000-01	14500.00	17330.00
2001-02	21000.00	23500.00*

Source: Department of Health

* Anticipated Expd.

2.8.115 During the Tenth Plan, the programme will be continued with emphasis on:

- ☒ prevention of mother-to-child trans-mission;
- ☒ reduction in blood-borne trans-mission and accidental infection in health care settings;
- ☒ care of HIV-infected persons/AIDS cases;
- ☒ prevention and management of STD; and
- ☒ improved surveillance to obtain epidemiological data on time trends in HIV infection.

2.8.116 Monitoring of processes and the impact of ongoing intervention programmes and sentinel surveillance (serological, STD/behavioural) to monitor time trends in the HIV epidemic will receive adequate attention.

2.8.117 HIV is a multifaceted problem affecting all segments of society. Until now the department of health has been the nodal point of interventions not only for traditional activities of the health sector such as prevention, detection, counselling and management, but also for other areas such as legislation, rehabilitation of infected persons and their families. During the Tenth Plan it is expected that each Department will handle HIV infection related issues in their respective sectors. For instance, the Ministry of Labour will look after area of prevention of discrimination at the work place. Voluntary

organisations may be best suited for providing hospices for AIDS patients who do not have anyone to look after them and orphanages to take care of children who have lost their parents due to AIDS. If each sector takes up the tasks pertaining to that, the country will be able to look after the needs of HIV infected persons and their families without any adverse effect on other programmes.

2.8.118 The Tenth Plan goals for HIV/AIDS programme are:

- ☒ 80 per cent coverage of high risk groups through targeted interventions;
- ☒ 90 per cent coverage of schools and colleges through education programmes;
- ☒ 80 per cent awareness among the general population in rural areas;
- ☒ reducing transmission through blood to less than 1 per cent;
- ☒ establishing of at least one voluntary testing and counselling centre in every district;
- ☒ scaling up of prevention of mother-to-child transmission activities up to the district level;
- ☒ achieving zero level increase of HIV /AIDS prevalence by 2007.

Water Borne Diseases

2.8.119 In the pre-independent era and in the first decade after independence water supply and sanitation were two important schemes funded by the Public Health Department. In view of the importance of both these components in preventing water borne and vector borne diseases, allocation for the two components was nearly 50:50. Subsequently water supply and sanitation programmes become the responsibility of rural and urban development departments. While water supply received most of the funds, sanitation and sewage were under-funded and neglected. This resulted in environmental deterioration and increase in both water and vector borne diseases.

2.8.120 The contamination of drinking water with human or animal faeces leads to the spread of water-borne diseases. The risk of infection is higher in areas with poor sanitation, poor sewage handling,

inadequate water supply and poor quality of water. Water borne diseases occur throughout the year with a seasonal increase in summer, monsoon and post-monsoon period. Common water-borne diseases that are of public health importance include diarrhoeal diseases, cholera, bacillary dysentery, typhoid fever and viral hepatitis. In children the prevalence of diarrhoeal disease is higher; severity and chronicity is also more in children. Over the last few decades there has been no decline in the prevalence of water borne diseases though there has been some decline in mortality associated with them.

2.8.121 During the Tenth Plan, efforts will be made to:

- ☒ improve coverage under rational case management for diarrhoea/dysentery;
- ☒ explore the feasibility of monitoring the quality of water through public health engineering department and the PRIs;
- ☒ strengthen the diarrhoeal disease surveillance programme at the district level to detect and contain outbreaks;
- ☒ coordinate the efforts of the departments dealing with urban and rural water supply and sanitation, municipal corporations and PRIs for the prevention of water-borne diseases.

Ninth Plan Initiatives

Disease surveillance

2.8.122 Surveillance is the continuing scrutiny of all aspects of occurrence and spread of diseases that are pertinent to effective control. So far in India disease surveillance has been predominantly focused on communicable diseases. There has been some small scale research efforts for establishment of comprehensive communicable and non communicable disease surveillance but these have not been operationalised even on a pilot basis.

2.8.123 Given the poor environmental sanitation and the problems in the public health system, it will not be possible to completely prevent outbreaks of communicable diseases in the near future. Delays in recognition and reporting of focal outbreaks and

absence of a functioning HMIS and disease surveillance system has been responsible for delayed recognition and responses resulting in high morbidity and even mortality in communicable disease out breaks. In order to prevent these the Ninth Plan envisaged the establishment of a district-based system for early detection of disease outbreaks and prompt response for rapid containment and control through the existing infrastructure. The necessary back-up laboratory and epidemiological support was to be provided by strengthening and optimally utilising the facilities and expertise available in the national institutions/ medical colleges.

2.8.124 The Department of Health initiated a pilot project on disease surveillance coordinated by the National Institute of Communicable Diseases in 1997. Initially the project involved strengthening laboratories and setting up a disease surveillance system in 20 districts, and was expanded to cover 100 districts by 2002. Many states have not been able to utilise the funds released or carry out the programme as envisaged. The major disease control programmes continue to have their own vertical surveillance system; of these, only the polio surveillance has a good track record. There is as yet no organised effort to integrate all the ongoing surveillance under various disease control programmes into a single programme for disease surveillance. Common epidemic-prone diseases are still not being monitored locally and reported to district officers for analysis and response.

2.8.125 Private sector provides over 75 per cent of curative care for common illnesses. However, data from private health providers is not yet included in any disease surveillance system. In the eighties ICMR funded a research project in North Arcot District (NADHI) in Tamil Nadu which private and government sector practitioners participated. The Kerala government has replicated this model in three districts. Kerala has reported that the system has enabled early detection and containment of outbreaks of communicable diseases; the state government proposes to expand this programme to other districts in the Tenth Plan.

2.8.126 During the Tenth Plan, a comprehensive review of:

- ☒ disease surveillance programmes currently being implemented in different states, under different disease control programmes and under the CSS project on disease surveillance;
- ☒ laboratory facilities available for investigation of epidemic prone diseases;
- ☒ reporting systems currently in use.

will be carried out. Efforts will be made to integrate the ongoing programmes for disease surveillance and develop a comprehensive disease surveillance programme at the district level. The programme will:

- ☒ strengthen routine data collection at the village level for selected diseases; monthly reports will be prepared so that deviation from the normal pattern could be recognised early;
- ☒ Compile information pertaining to epidemic prone diseases which are prevalent throughout the country e.g. diarrhoea, tetanus, diphtheria will be reported by all; region specific problem such as malaria, filaria, leptospirosis will be reported from the endemic areas;
- ☒ ensure regular compilation and critical analysis of data generated at the district level so that outbreaks are recognised early and investigated by district health officers and appropriate timely response is initiated;
- ☒ use modern IT tools to communicate data on disease incidence on a real time basis, complete analysis at the state, regional and national levels and build up a mechanism for rapid and appropriate response.

Health Management Information System (HMIS)

2.8.127 HMIS is an essential management tool for effective functioning of the health system. During the Eighth Plan the Central Bureau of Health Intelligence and the state Bureaus of Health Intelligence developed a HMIS system for sending district-level information on morbidity reported by the government primary health care institutions through National Informatics district computer net work. Though some states responded initially the system was never fully operationalised in any state. As a result there is no system through which reliable data on morbidity in different districts/ states could

be collected and analysed and used for decentralized district based planning. So far there has not been any effort to use the currently available IT tools to build up a comprehensive HMIS and use it to improve efficiency and functional status of the health system. During the Tenth Plan efforts will be made to ensure that effective two way management information system is built up through out the country; all the data pertaining to health and family welfare programmes will be collected, collated and reported from all districts and utilised to improve functional status and efficiency of the health system. Efforts will also be made to build up a fully functional, accurate HMIS utilizing currently available IT tools; this real time communication link will send data on births, deaths, diseases, request for drugs, diagnostics and equipment and status of ongoing programmes through service channels within existing infrastructure and manpower and funding. It will also facilitate decentralized district based planning, implementation and monitoring.

Disease Burden Estimates

2.8.128 Traditionally policy makers have used mortality statistics for identifying major public health problems. In India, reliable age specific mortality data is available through SRS ; though there are lacunae in the system for ascertainment of causes of death, fairly reliable data is available on major causes of death. In addition to these data, the country has under taken surveys for estimating the prevalence of major public health problems such as morbidity in women and children, nutritional deficiencies and major communicable diseases. The estimated share of India in some of the global health problems is shown in the Text Box . In India reliable information on overall morbidity is not available. In the absence of reliable morbidity data, mortality statistics and available survey data have formed the basis on which health policy makers and programme managers evolved public health programmes and allocated funds. While this might have been the appropriate option in a situation where communicable diseases and maternal and child health problems predominate, appropriate modification will be required as the country undergoes demographic and epidemiological transition and non communicable diseases emerge as major public health problems. In view of this,

India's share in global health problems

- ☒ 17 per cent of the population
- ☒ 17 per cent of the total deaths
- ☒ 23 per cent of child deaths
- ☒ 26 per cent of the childhood vaccine preventable deaths
- ☒ 20 per cent of maternal deaths
- ☒ 68 per cent of leprosy cases
- ☒ 30 per cent of tuberculosis cases
- ☒ 10 per cent of HIV infected persons

there is a need to obtain data on not only mortality but morbidity due to chronic illnesses and disabilities and take them account while formulating public health programmes. For instance, morbidity due to mental illnesses is estimated to account for about 15 per cent of the total morbidity but deaths due to psychiatric illnesses are usually less than 1 per cent of total deaths even in developed countries.

2.8.129 The disease burden estimates measured in terms of Disability Adjusted Life Years (DALY) which takes into account both morbidity and mortality as well as the age at which the problem occurred has been used by World Health Organisation in making global comparisons with respect to public health problems and investment in health care. The estimated disease burden in 1990 due to major categories of public health problems in the world and India is shown in Figure 2.8.24. Disease burden due to four major diseases in different

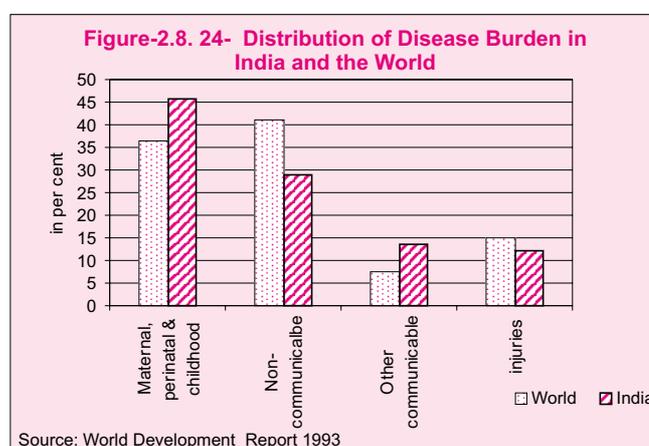


Table 2.8.12
Burden for four major diseases (millions of DALYs)

Disease and sex	Age (years)					Total
	0-4	5-14	15-44	45-59	60+	
Diarrhea						
Male	42.1	4.6	2.8	0.4	0.2	50.2
Female	40.7	4.8	2.8	0.4	0.3	48.9
Worm infection						
Male	0.2	10.6	1.6	0.5	0.1	13.1
Female	0.1	9.2	0.9	0.5	0.1	10.9
Tuberculosis						
Male	1.2	3.1	13.4	6.2	2.6	26.5
Female	1.3	3.8	10.9	2.8	1.2	20
Ischemic heart disease						
Male	0.1	0.1	3.6	8.1	13.1	25
Female	**	**	1.2	3.2	13	17.5

** Less than 0.05 million

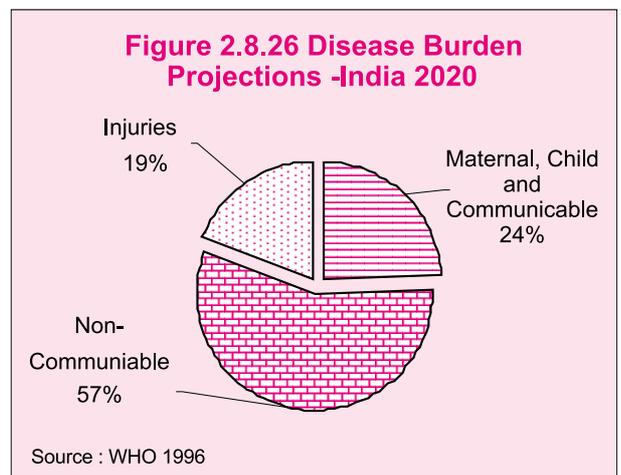
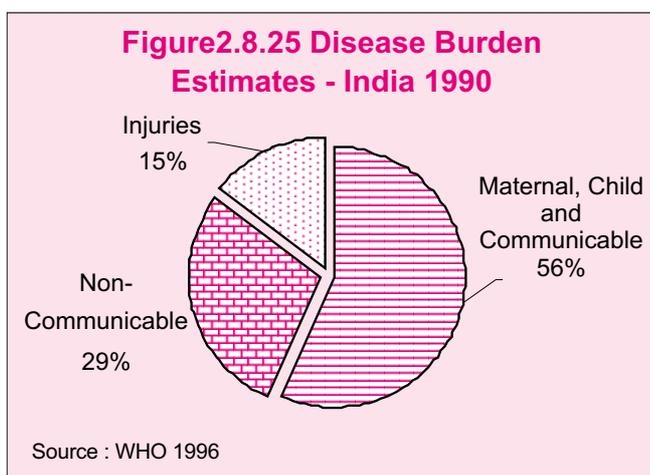
Note : DALY, disability-adjusted life year.

Source : World Development Report 1993

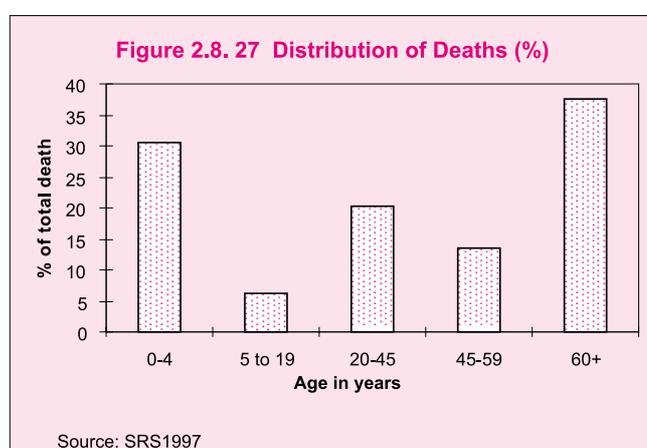
age and sex population computed by WHO is in Table 2.8.12. The fact that while estimates regarding mortality are reasonably adequate, the estimates of morbidity based on the available data from the developing countries are often inadequate has to be kept in mind while interpreting these global data.

2.8.130 Using the 1990 database (Figure 2.8.25) and assuming that the trends in

epidemiological transition achieved by other countries during the previous two decades will occur in India, the changing pattern of disease burden for 2020 was also computed by WHO (Figures 2.8.26). However, data from National Family Health Survey (NFHS) suggest that during the 1990s, there has not been any significant decline in the infant mortality rate and the maternal mortality rate. Data from SRS does not show any major change in the age specific



mortality rate (Figure 2.8.27) or cause of death. It would appear that the epidemiological transition is occurring at the slower pace than projected for the country. This is perhaps due to persistent maternal and child health problems and advent of HIV infection. However, there has been some increase in the mortality and morbidity due to non-communicable diseases, accidents and trauma. There are wide inter-state differences in health indices, morbidity rates, magnitude and rate of demographic and epidemiological transition. Under these conditions, it is important to :



- ☒ ascertain and document morbidity and mortality due to major health problems in different states/districts;
- ☒ evolve appropriate intervention programmes;
- ☒ invest adequately in well targeted interventions;
- ☒ implement them effectively by modifying the health care system, and;
- ☒ monitor the impact on the morbidity and mortality.

2.8.131 Such an effort would require a reliable sustainable database for mortality and morbidity. While mortality data can be obtained through strengthening of CRS/SRS and ascertainment of the cause of death, the data base for morbidity can come only through a strengthened HMIS supplemented by the data from disease surveillance. When sustained, these three systems will, over the next two decades, provide valuable insights regarding time trends in morbidity and mortality in different states/ districts. Development of this data

base is critical for evolving appropriate health policies and strategies, identifying priority areas for investment of available funds and bringing about modifications in the existing health system to ensure equitable, efficient and effective implementation of the programmes to tackle dual disease burden.

Infection Control and Waste Management in Health Care Settings

2.8.132 There has been increasing concern over the incidence of hospital-acquired infections and accidental infection in health care providers and waste disposers. One of the major new initiatives during the Ninth Plan was improvement of infection control and waste management through appropriate, affordable technology at all levels of health care. In November 1998, the Department of Health has constituted National Hospital Waste Management Committee under the chairmanship of the Secretary Health, to coordinate and guide policy and programme initiatives in the field. A pilot project was initiated in 11 institutions with assistance from the department. Hospital infection control and waste management is also being taken up as a component of all World Bank-assisted secondary health system projects. Guidelines on hospital waste management were prepared and circulated to states and union territories in November 2000 for their comments. Some states are providing funds under the PMGY for infection control and waste management in primary health care institutions. During the Tenth Plan, hospital infection control and waste management will be incorporated as an essential routine activity in all health care institutions at all levels of care.

Horizontal Integration of Vertical Programmes

2.8.133 Initially, when sufficient infrastructure and manpower were not available for the management of major health problems, several vertical programmes like the NMEP and NLEP were initiated. Over the years, the three-tier health care infrastructure has been established. The Ninth Plan envisaged that efforts will be made to integrate the existing vertical programmes at the district level and ensure that primary health care institutions provide compre-

hensive health and family welfare services. The pace of horizontal integration has been very slow and uneven. During the Ninth Plan, attempts were made to:

- ☒ integrate the activities related to training and IEC under different vertical programmes;
- ☒ coordinate the activities for prevention and management of STD/reproductive tract infections (RTI) under the RCH and AIDS control programmes;
- ☒ improve coordination between ongoing HIV and TB control programmes; and
- ☒ provide leprosy services through the primary health care infrastructure.

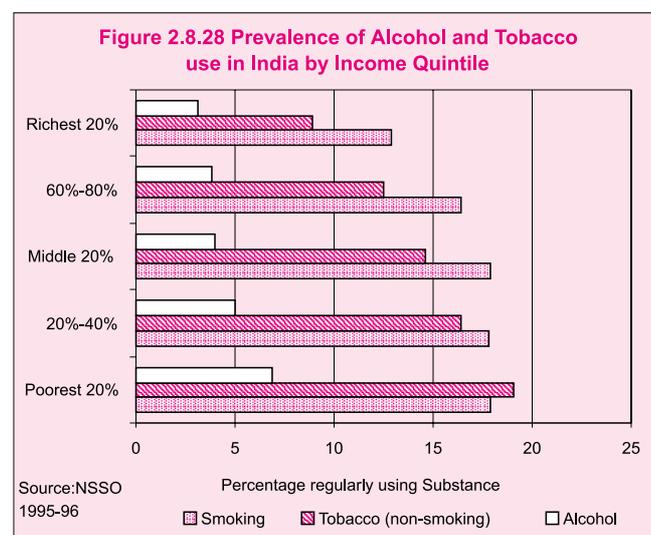
2.8.134 Some states like Orissa and Himachal Pradesh have formed a single health and family welfare society at the state and district level for implementing all health and family welfare programmes. In some states, middle-level public health programme managers, who are currently heading the vertical programmes at the district-level, are being given the additional task of ensuring coordination and implementation of the integrated health and family welfare programme at primary health care institutions in defined blocks. Their involvement is also expected to improve data collection, reporting, strengthen HMIS, improve the supply of essential drugs and devices at PHCs/CHCs and enable the operationalisation of disease surveillance and response mechanism at the district level. The National Health Policy 2002(NHP2002) envisages a progressive convergence of all health and family welfare programmes under a single field of administration beginning at the district and below-district levels for funding, implementation and monitoring. During the Tenth Plan, efforts will be mainly directed to improving the pace and coverage of this convergence. The NHP 2002 envisages manpower in rural/urban health system should be available for the entire gamut of public health activities at the decentralised level, irrespective of whether these activities relate to national programmes or public health activities initiated by state/PRI.

PREVENTION AND MANAGEMENT OF NON-COMMUNICABLE DISEASES (NCD)

2.8.135 Non-communicable diseases cover a wide range of heterogeneous conditions affecting different organs and systems in different age and socio-economic groups. Over the last two decades, morbidity and mortality due to cardio-vascular diseases, mental disorders, cancers and trauma have been rising due to an increase in:

- ☒ the number of senior citizens with higher prevalence of non-communicable diseases;
- ☒ prevalence of non-communicable diseases in younger people due to life-style changes, obesity and stress; and
- ☒ exposure to environmental risk factors and use of tobacco.

2.8.136 Data from the 52nd round of NSSO showed that tobacco intake (smoking and non-smoking) and alcohol use are higher in the poorest 20 per cent of the income quintile (Figure 2.8.28) and hence the prevalence of tobacco-related non-communicable diseases is likely to be high in this group. In view of the chronic morbidity and high cost involved in the management of non-communicable diseases, attention need be focused on prevention, early detection and appropriate management. It is estimated that currently there are 2.5 million cases of cancer in the country and this



will double over the next two decades. Data on the prevalence of cardiovascular disease are insufficient for national level projections. The reported prevalence of Coronary Heart Disease (CHD) in urban Kerala is 14 per cent (17 per cent in men and 10 per cent in women), 7 per cent in rural Thiruvananthapuram and 3 per cent in rural parts of North India. Ten per cent of the urban and 5 per cent of the rural adult population suffer from hypertension. The estimated prevalence of rheumatic heart disease (which constitutes 20 to 30 per cent of hospital admissions due to all cardio vascular disease (CVD) in India) is five to seven in 1,000 in the 5-15 year age group. A recent study carried out in six cities in India showed an age standardized prevalence of diabetes and impaired glucose tolerance in 12.1 per cent and 14.0 per cent respectively, with no gender difference.

2.8.137 During the Ninth Plan, ongoing programmes for control of non-communicable diseases included two centrally-sponsored schemes (National Iodine Deficiency Disorders Control Programme, discussed in the Chapter on Nutrition, and the National Programme for the Control of Blindness discussed in this section) and one central sector scheme (the National Cancer Control Programme). During the 1990s, several pilot projects such as the national mental health programme, the diabetes control programme, cardiovascular disease control programme, prevention of deafness and hearing impairment, oral health programme and medical rehabilitation were initiated as central sector pilot projects. After completion of the pilot phase, these programmes have been merged with the Central Institutes dealing with these problems.

2.8.138 The Ninth Plan envisaged the provision of integrated non-communicable diseases prevention and control services through the existing infrastructure. However, the progress on this front has been very slow. In some states like Kerala efforts are being made to implement an integrated non-communicable disease control program at the primary and secondary care level with emphasis on prevention, early diagnosis, management and building up of a suitable referral system. Tertiary

care centres are being strengthened to provide treatment facilities for the management of complications.

2.8.139 During the Tenth Plan, efforts will be made to improve preventive, promotive, curative and rehabilitative services for non-communicable diseases throughout the country at all levels of care so as to reduce morbidity and mortality. The major thrust will be on:

- ☒ a well-structured IEC&M for primary and secondary prevention of non-communicable diseases;
- ☒ re-orientation and skill upgradation of health care providers in diagnosis and management of non-communicable diseases at different levels of care;
- ☒ establishment of referral linkages between primary, secondary and tertiary institutions;
- ☒ production and provision of drugs for treatment of non-communicable diseases at affordable costs;
- ☒ development of institutions for rehabilitation of disabled persons, teaching persons to live with their disability;
- ☒ development of hospices for care of terminally ill people who cannot have home-based care; and
- ☒ creation of an epidemiological database on non-communicable diseases especially CVDs, stroke and diabetes.

National Cancer Control Programme (NCCP)

2.8.140 India has one of the lowest rates of cancer in the world. It is estimated that there are two to 2.5 million cases of cancer in India, with 700,000 new cases being detected every year. About two-thirds of the cases are in an advanced stage at the time of detection and 300,000 to 350,000 cancer patients die each year. Current projections suggest that the total cancer burden in India for all sites will double by 2026 because of increasing longevity, greater exposure to environmental carcinogens due to industrialisation, use of fossil fuels, the use of a wide variety of chemical agents in industry and agriculture, and the continued use of tobacco.

2.8.141 The most frequent cancers among Indian males are those of the mouth/oropharynx, oesophagus, stomach and the lower respiratory tract. In women, cancers of the cervix, breast, mouth/oropharynx and oesophagus are common. About one-third of cancers are easy to detect and can readily be cured. Tobacco-related cancers (especially cancer of oral cavity, lung and cancer cervix) form more than 50 per cent of the overall cancer burden in the country. An increase in tobacco smoking instead of chewing might lead to a rise in the incidence of lung cancer, which is more difficult to detect and treat. Changing dietary patterns (high calorie, high fat intake) and lower parity may result in increasing incidence of breast cancer.

The objectives of the National Cancer Control Programme are:

- ☒ primary prevention of cancers by health education through the government and NGOs;
- ☒ early detection and diagnosis of cancers especially cancer cervix, breast and oropharyngeal cancers;
- ☒ developing and strengthening of existing cancer treatment facilities;
- ☒ increasing access to palliative care in the terminal stage of cancer.

2.8.142 The Cancer Control Programme was initiated in 1975-76 as a central sector project. It was renamed as the National Cancer Control Programme (NCCP) in 1985. The programme provides funds to 17 Regional Cancer Centres (RCCs). The RCCs are regional centres for diagnosis, treatment and follow up of cancer patients; they undertake surveys of mortality and morbidity due to cancer, training of medical and paramedical personnel in cancer care and preventive measures with emphasis on health education and research. NCCP provided funds for the purchase of equipment (cobalt unit, mammography unit) and for development of oncology wings in Government Medical Colleges/voluntary organisations. The District Cancer Control Programme aimed at promoting health education,

early detection of cancer and pain relief was initiated in 1990-91. The progress in ongoing efforts for cancer prevention, early detection and management has been very slow.

2.8.143 The ICMR established a National Cancer Registry Programme (NCRP) in 1981-82, there are five population-based urban cancer registries in Mumbai, Bangalore, Chennai, Bhopal, Delhi and a rural registry at Barsi in Maharashtra and six hospital-based registries at Chandigarh, Dibrugarh, Thiruvananthapuram, Bangalore, Mumbai and Chennai. The NCRP provides data on regional difference and time trends in cancer prevalence so that appropriate modifications in the ongoing programmes could be made.

2.8.144 During the Tenth Plan, a major effort will be made to sensitise and upgrade the skills of health care providers in the primary, secondary and tertiary institutions so that they can take up the responsibility of:

- ☒ health education for cancer prevention;
- ☒ early diagnosis and management according to standard treatment protocols at appropriate institutions; and
- ☒ referral of cancer patients with complications.

National Programme for Control of Blindness (NPCB)

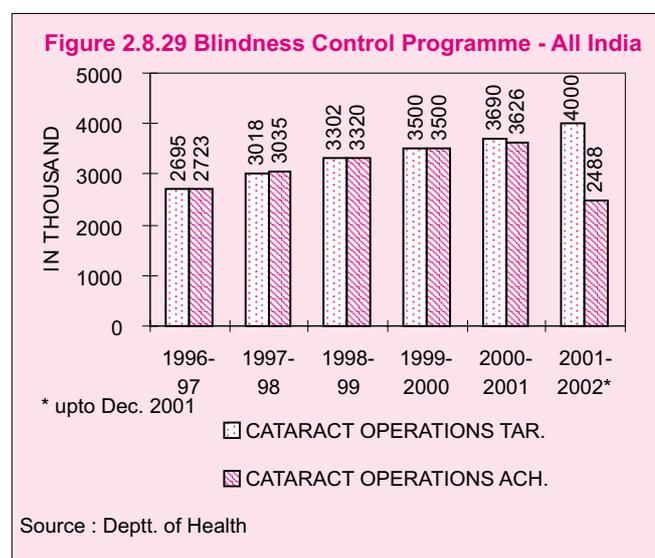
2.8.145 Surveys carried out by the ICMR in the 1970s indicated that the prevalence of blindness is about 1.4 per cent, with cataract accounting for over 80 per cent of the cases. Most of cataract blind individuals are in their 60s. They may not be able to afford surgery and have difficulty in accessing services, unless these are available close to their residence. The National Programme for Control of Blindness was initiated in 1976 with the objective of providing comprehensive eye care services at the primary, secondary and tertiary level and achieving a substantial reduction in the prevalence of eye disease in general, and cataract blindness in particular. The progress of the programme was very slow. A Government of

India-WHO survey in 1986-89 showed that prevalence of blindness remained unaltered. Prevalence of blindness was higher than the national average of 1.4 per cent in eight states (Andhra Pradesh, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and Jammu and Kashmir).

2.8.146 In 1994, World Bank assistance was obtained for NPCB in seven of the eight states. Domestic budgetary support was provided to implement the project in Jammu and Kashmir. The major objectives of the programme were:

- ☒ to improve the quality of cataract surgery and clear the backlog of cataract by performing 11 million operations over a seven-year period;
- ☒ to strengthen the country's capacity to provide high volume, high-quality, low-cost eye care by upgrading the knowledge and skills of eye care personnel and improving access to service delivery through government, voluntary and private sector collaboration; and
- ☒ to increase eye care coverage among the underprivileged section of the population including women, urban slum dwellers and tribals.

2.8.147 During the Ninth Plan, the programme was revised to cover the entire country. The performance during the Ninth Plan is given in Fig. 2.8.29. Outlays



and expenditure under the NPCB is shown in Table 2.8.13.

Table 2.8.13
NPCB- Outlays and Expenditures

(Rs. In Lakhs)

YEAR	OUTLAY	EXPENDITURE
9TH PLAN	44800.00	
1997-98	7000.00	5806.00
1998-99	7500.00	7285.00
1999-00	8500.00	8373.00
2000-01	11000.00	10941.00
2001-02	14000.00	14000.00*

Source : Department of Health

* Anticipated Expd.

2.8.148 The review of the World Bank assisted project in 2000 showed that even though infrastructure and manpower has been provided, performance both in fixed facilities and in camps have been far below the norms. Most of the district hospitals did not achieve the goal of 700 cataract surgeries/surgeon/year; many mobile units did not achieve the goal of 1500 cataract surgery per year. As a result only 8.15 million cataract surgeries (the target was 11 million) could be done and cataract prevalence could not be reduced to 0.3 per cent

2.8.149 The need to restore vision by operating on one eye in economically blind people has not been given conscious priority over operating on the cataract in the second eye. A comparative assessment of extra capsular cataract extract vs. intra ocular lens insertion in terms of logistics of implementation, cost of care and complication rate, when surgery was done at tertiary hospital/district hospital vs. those done in camps is yet to be carried out. The quality of care in institutions and more so in camps had been sub-optimal. Infections resulting in permanent blindness have been reported. In view of this NPCB has revised its strategy, emphasis is now on surgery in fixed facilities; mobile units will take up only screening of cases and provide follow up care.

2.8.150 A pilot survey carried out in 1999 in two districts showed that there has been a shift in the

causes of blindness (Table 2.8.14). The NPCB will have to be geared up to tackle the backlog of cataract surgery, glaucoma, corneal blindness as well as other emerging problems including diabetic retinopathy (estimated prevalence 20 per cent among diabetic).

Table 2.8.14
Pilot Survey on causes of blindness (1999)

	Percent
Cataract	55.0
Refractive errors	9.8
Corneal blindness	8.0
Glaucoma	3.5
Surgical complication	3.0
Other causes	10.7

2.8.151 During the Tenth Plan, attempts will made to:

- ☒ clear the backlog of blindness due to cataract by performing 4.5 million cataract operations per year. A majority of these will be done in fixed institutions; and wherever adequate facilities are available, Intra-Ocular Lens (IOL) will be used;
- ☒ improve the utilisation of facilities created in the government, private and voluntary sector to cope with the broader spectrum of eye care, including screening of children for refractive errors, diabetics for retinopathy and all persons beyond 35 years for glaucoma;
- ☒ develop a system for accreditation of centres providing eye care;
- ☒ improve the quality of care before, during and after surgery through operationalisation of standard protocols for management;
- ☒ monitor quality of care;
- ☒ modify the ophthalmology curriculum in both the undergraduate and postgraduate stages so that the students have the necessary skills to deal with common ocular problems at all levels of health care;
- ☒ develop an appropriate continuing medical education programme to enable practitioners to deal with emerging ophthalmic problems effectively.

Mental Health

2.8.152 Mental health care has three aspects - restoration of health in mentally ill persons, early identification of persons who are at risk and appropriate protection and promotion of mental health in normal persons. It is estimated that 10 to 15 per cent of the population suffers from mental health problem and the stress of modern life is resulting in an increasing prevalence of mental illness. Till about three decades ago, mental health services consisted mainly of large, centralised mental hospitals. At the time of independence, there were 17 mental hospitals accommodating over 8,000 patients. Most of these hospitals had poor infrastructure and manpower and did not provide good quality mental health care. A majority of mentally ill patients did not have access to good quality psychiatric care and there was no home-based care available for them.

Magnitude of Mental Health Problems

It is estimated that :

- ☒ ten million people are affected by serious mental disorders.
- ☒ 20-30 million people have neurosis or psychosomatic disorders.
- ☒ 0.5 and 1 per cent of all children have mental retardation.

2.8.153 Soon after Independence, efforts were made to improve the access to mental health services by increasing the number of mental hospitals and opening psychiatric units in general hospitals. Providing psychiatric care through general hospitals and bringing mental health care out of the confines of mental hospitals reduced the stigma associated with treatment of mental illness, removed legal restrictions on admission and treatment and facilitated the early detection of associated physical problems. Most importantly, it ensured that the family was involved in the care and that on being discharged the patient went back to the family. Encouraged by the success in this effort, many states embarked on the development of district psychiatric units. Some states like Kerala and Tamil

Nadu have a district psychiatric unit in all districts. Though others lag behind in this respect, the concept of mental health care provided as an integral part of health care system has been accepted and implemented by all states. Ambulatory treatment for psychiatric illnesses became accepted as a norm and effective, relatively inexpensive drugs for common mental disorders were made available in tertiary and secondary care institutions.

2.8.154 Currently, 50 per cent of the medical colleges have a psychiatry department. It is estimated that there is one psychiatry bed per 30,000 population. There are 20,000 beds in mental hospitals and 2,000 to 3,000 psychiatric beds in general and teaching hospitals. Fifty per cent of the psychiatric beds are occupied by patients undergoing long term treatment. However, in spite of all these facilities, even now less than 10 per cent of the mentally ill persons have access to appropriate care; prevention of mental illness and promotion of mental health remain of distant dreams.

2.8.155 The national mental health programme was initiated in 1982 with the objective of improving mental health services at all levels of health care through early recognition, adequate treatment and rehabilitation of patients. The programme also envisaged improvement in the conditions in existing mental hospitals, effective implementation of the Mental Health Act, 1987 and adequate manpower development to meet the growing needs for mental health care. The Programme did not make much headway in the Seventh Plan.

2.8.156 During the Eighth Plan, the National Institute of Mental Health and Neuro Sciences (NIMHANS) developed and implemented a district mental health care model in the Bellary district of Karnataka with the objective of:

- ☒ providing sustainable basic mental health services to the community and to integrate these services with health services;
- ☒ early detection and prompt treatment of patients with mental illness;

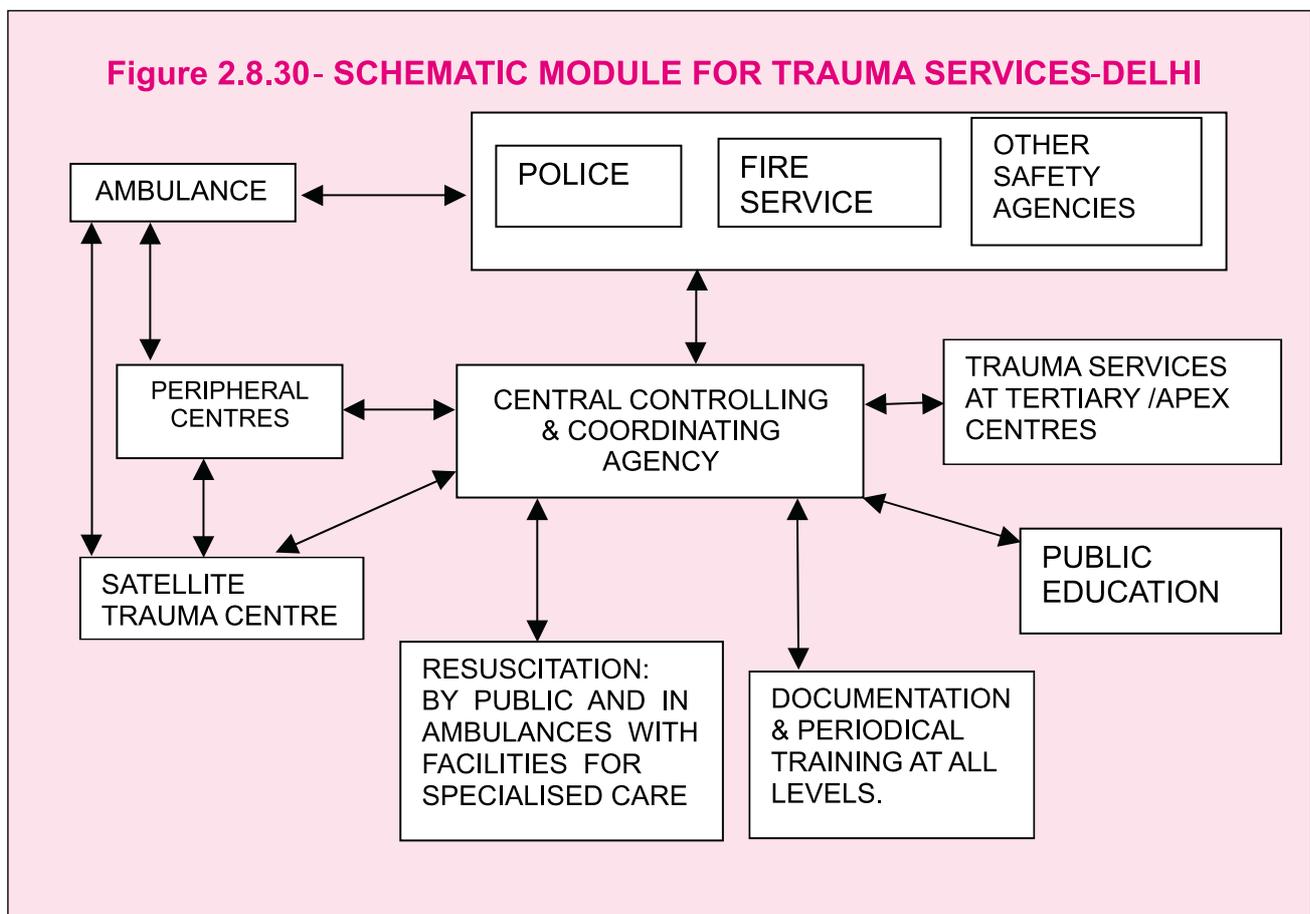
- ☒ providing domiciliary mental health care and reducing patient load in mental hospitals;
- ☒ community education to reduce the stigma attached to mental illness; and
- ☒ treatment and rehabilitation of patients with mental illnesses within their family setting.

2.8.157 Following encouraging results, the programme was expanded during the Ninth Plan to 22 districts in 20 states. It was envisaged that decentralised district-based training in essential mental health care will be provided to all health professionals so that psychiatric care will be provided in all health care facilities. Attempts were made to improve early detection of mental illness in the community, provide ambulatory care at home and follow up discharged cases. A district mental health team was to provide referral support and supervision of the mental health programme. Simple, accurate records of work done maintained by the health care providers was to be monitored by the district team. The progress in these districts has not yet been evaluated.

2.8.158 During the Tenth Plan, it is expected that states will progressively improve access to mental health care services at the primary and secondary care levels to cover all the districts in a phased manner. Psychiatry departments in medical colleges will play a pivotal role in the operationalisation and monitoring of the programme in the district in which they are located and synergistic links will be formed with other ongoing related programmes.

Accident and Trauma Services

2.8.159 Increasing mechanisation in agriculture and industry, induction of semi-skilled and unskilled workers in various operations, and rapid increase in vehicular traffic have resulted in an increase in morbidity, mortality and disability due to accident and trauma. Overcrowding, lack of awareness and poor implementation of essential safety precautions result in an increasing number of accidents. The consumption of poisonous substances accidentally or intentionally is also on the rise. Technological advances in the last two decades have made it possible to



substantially reduce mortality, morbidity and disability due to accidents, trauma and poisoning. At present there is no organized comprehensive trauma care service either at the centre or in the state. People are unable to benefit from these advances because of limited access to these services. During the Ninth Plan facilities for the management of accident and trauma care have been strengthened in several hospitals but these have not been linked into an effective multi-disciplinary trauma care system. A conceptual model (Figure 2.8.30) of such a system for Delhi has been prepared which optimises utilisation of available facilities and prevents wastage of scarce resources due to duplication of efforts. The model includes arrangements for:

- ☒ for on-site resuscitation of trauma victims;
- ☒ first aid and transport to the nearest tertiary care hospital by ambulances with essential equipment and trained paramedical staff;

- ☒ networking among and within institutions for manpower, materials, communication, training and research; and
- ☒ other allied trauma care activities.

2.8.160 Apart from communication networking, the apex centre would be utilized for human resource development and creation of a comprehensive computerized information database on trauma cases.

2.8.161 **During the Tenth Plan** efforts will be made to strengthen primary, secondary and tertiary care institutions for trauma care through:

- ☒ adequate training to medical and paramedical personnel;
- ☒ provision of facilities for transport of patients;
- ☒ suitable strengthening of existing emergency and casualty services; and
- ☒ improving referral linkages.

Environment and Health

2.8.162 Environment can affect human health in many ways. Deficiency of iodine in soil and food items is the cause of iodine deficiency disorder. Excessive fluoride in water causes fluorosis. Environmental degradation may affect air, land and water. Pollutants may enter the food chain and, hence, the human body. Rapidly growing population, urbanization, changing agricultural, industrial and water resource management, increasing use of pesticides and fossil fuels have all resulted in a perceptible deterioration in the quality of environment and all these have adverse health consequences. Environmental health would have to address

- ☒ the prevention, detection and management of the existing deficiencies or excess of certain elements in the environment;
- ☒ macro environmental contamination of air, land, water, and food; and
- ☒ disaster management.

2.8.163 So far, the major focus of environmental health has been on the communicable disease burden due to poor environmental sanitation in urban and rural areas and methods to tackle these. These efforts will be intensified during the Tenth Plan. Emphasis will be laid on

- ☒ establishing cost-effective and environment friendly technologies for safe, sanitary disposal of solid waste and waste water;
- ☒ improvement in access to potable drinking water, especially in urban slums and remote rural areas;
- ☒ prevention and management of health consequences of environmental deterioration.

2.8.164 Major developmental activities in any field such as agriculture, industries, urban and rural development can result in environment changes which could have adverse health implications. In the Tenth Plan period, efforts will be made to fully operationalise the Ninth Plan recommendations that:

- ☒ health impact assessment should become a part of environmental impact assessment of all large developmental projects; and
- ☒ health care of people involved in these projects and the prevention and management of health consequences of the population living in the vicinity of the project should be met from the project budget.

2.8.165 The rapid growth of industry especially in the small-scale and unorganised sectors is central to economic development but in the absence of appropriate technology and environmental safeguards, these become a major source of air, water ground and noise pollution. The Central Pollution Control Board (CPCB) under the Ministry of Environment and Forests regularly monitors pollution levels in all major cities and initiates appropriate remedial measures. In India, the problem of indoor air pollution due to the combustion of unprocessed biomass fuels by the urban and rural poor has to be reduced by providing appropriate fuel for cooking. Noise pollution is another area of increasing concern. During the Ninth Plan, the Biomedical Waste Management and Handling Rules (1998) and the Municipal Waste Management and Handling Rules (2000) were notified. A manual on Municipal Solid Waste Management was published in May 2000 by the Ministry of Urban Development. The CPCB has evolved a code of practice for controlling noise pollution in public places. Efforts to reduce air pollution, ground water as well as river water pollution have been taken up.

2.8.166 During the Tenth Plan priority will be accorded to :

- ☒ monitoring, detection and alleviation of the macro environmental pollution;
- ☒ creation of national data base on environmental pollution and related health problems by linking the existing area specific environmental monitoring data with data on health status of the population living in these areas;
- ☒ epidemiological studies on the impact of the biomass fuel on the health status;
- ☒ health consequences of noise pollution;

- ☒ R&D efforts for producing cleaner fuels from traditional material;
- ☒ development of biomarkers for long term bio-monitoring designed to detect changes in aquatic eco systems due to water pollution.

Occupational Health

2.8.167 A healthy workforce is an essential prerequisite for agricultural and industrial development. Over the last five decades, efforts have been made to provide health care to workers through schemes such as ESIS, creation of health care facilities in industrial towns and arrangement for health care for workers and their families through existing public and private health care services. However, both coverage and quality of care have not been adequate. There is no attempt to link existing data from ongoing environmental monitoring at the work place with the health status of workers and initiate appropriate interventions. Workers in the agricultural and unorganised sectors have not been covered under specific health care programmes. The increasing use of mechanisation, induction of poorly trained workers who operate machines with which they are not familiar, use of insecticides, pesticides and chemicals by persons who are ignorant of the precautions to be taken are resulting in increasing health hazards to workers in these sectors. The Ninth Plan had recommended

- ☒ continuous monitoring of the safety of the work environment and workers' health status in industry and agriculture;
- ☒ special attention to the health problems of vulnerable groups such as women and children with a focus on the prevention, early detection and prompt treatment.

2.8.168 Not much progress was achieved during the Ninth Plan. During the Tenth Plan the focus will be on:

- ☒ establishment of norms for work environment in organized, unorganized and agricultural sectors;

- ☒ monitoring the work environment for detection and correction of micro environmental pollution;
- ☒ monitoring of health status of workers;
- ☒ interventions aimed at prevention, early detection and effective management of health problems of workers, including occupational health problems, with special attention to health problems in women and children.

Drugs – Production, Quality and Supply

2.8.169 Nearly one-third of the health budget at the centre and in the states is spent on providing drugs free of cost in all public health facilities. However, adequate stock of good quality drugs are not available in many of these institutions, and health benefit from treatment are sub optimal. Some of the factors responsible for this include :

- ☒ lack of a uniform essential drug list;
- ☒ poor quality control;
- ☒ problems in the procurement and supply of drugs;
- ☒ the absence of treatment protocols for common diseases leading to unnecessary and irrational drug prescriptions; and
- ☒ poor compliance with the prescribed regimen due to lack of awareness and counselling.

2.8.170 During the Ninth Plan, several state governments (e.g. Tamil Nadu, Delhi and Orissa) have introduced an essential drug programme with the following components:

- ☒ development of a drug policy;
- ☒ preparation of an essential drug list;
- ☒ establishing a quality control and assurance system;
- ☒ pooled procurement system and improvement in logistics of drug supply;
- ☒ improvement in the availability of safe and effective drugs;
- ☒ preparation of standard treatment guidelines and dissemination of information; and

- ☒ providing information about treatment to patients to improve compliance.

2.8.171 Research and monitoring of all aspects of drug use including adverse drug reaction were attempted.

2.8.172 During the Tenth Plan efforts will be made to:

- ☒ cover all states with expanded and strengthened essential drug programmes;
- ☒ adopt an online computer inventory control programme for the procurement and supply of drugs; and
- ☒ establish a system to monitor cost, quality, availability and use of drugs.

2.8.173 India has a large pool of technically skilled manpower and research infrastructure in both government and private sector laboratories. The Indian pharmaceutical industry has the ability to develop and commercialise chemical processes for manufacturing of a variety of drugs at low cost. However, financial problems and fragmentation of capacities makes production of some bulk drugs uneconomical; this has prevented Indian industry from achieving its full potential, both in the domestic and international market. The existence of nearly 20,000 manufacturing units and poor quality control have led to spurious and poor quality drugs reaching the market. The revised National Drug Policy 2001 had reviewed the situation and suggested remedial measures. The limit for the situatory foreign direct investment in the pharmaceutical sector was increased from 51 per cent to 74 per cent. Several products reserved for production in the public sector were de-reserved. Industrial licensing for all bulk drugs has been abolished except in the case of those produced by the use of recombinant DNA technology and bulk drugs requiring in-vivo use of nucleic acids as the active principles.

2.8.174 The Central Drugs Standard Control Organisation (CDSCO) under the Drug Controller General of India is responsible for ensuring the safety, efficacy and quality of drugs. The provisions

under the Drugs and Cosmetics Act (1940) provide for good manufacturing practices. During the Tenth Plan, the regulatory requirements pertaining to safety, efficacy and quality have to be effectively implemented by:

- ☒ strengthening the drug control machinery at the centre and in the states;
- ☒ strengthening quality assurance systems;
- ☒ making good manufacturing practices (GMP) mandatory for pharmaceutical houses; and
- ☒ enforcing stringent quality regulatory processes for the import of drugs.

2.8.175 Post-marketing surveillance, development of a self-sustaining and viable adverse drug reaction (ADR) monitoring and response at the national level will receive due attention.

2.8.176 Currently, Indian industry is investing about 5 per cent of turnover on research and development. These investments may have to be augmented so that the Indian pharmaceutical industry achieves its full potential. Parallel efforts to improve public sector-funded research are also essential for the development of drugs for the treatment of public health problems such as emerging drug resistance, development of newer contraceptives and vaccines. The private sector may not be willing to make requisite investments in these areas because of very low profit margins.

Information, Education, Communication and Motivation (IEC&M)

2.8.177 An aware and informed population, actively participating in programmes aimed at promoting health, preventing illness, accessing health care at appropriate level is an essential prerequisite for improvement in health status of the country. Health education, which is the major tool for achieving this objective had received a lot of attention in the 1950s and 1960s. During the development of various centrally sponsored vertical programmes for disease control, family welfare programme and state's efforts to build up state specific programme, health education efforts got fragmented. Currently, health education efforts are mostly limited to information being provided through

mass media and health functionaries regarding Family Welfare services and disease control programmes. These efforts have resulted in improved awareness of the population who accessed these programmes. However, active participatory health education aimed at motivating the population on life style changes and preventive and promotive health care programmes have not received due attention. Lack of readily available information at household and community level on where to go and whom to access for various health problems continue to remain a major barrier for seeking appropriate care.

2.8.178 During the Tenth Plan, attempts will be made to:

- ☒ review existing training programmes on health promotion/health education and make them more relevant;
- ☒ integrate the various health education programmes under different vertical programmes so that health personnel at each level of care provide comprehensive IEC to the population;
- ☒ involve PRIs and NGOs in health promotion/education and IEC&M; and
- ☒ ensure the involvement of non-formal leaders in the community in order to make health promotion/ education/ IEC&M a people's movement; and

Public Health

2.8.179 In the pre-Independence era, India's health services had two distinct components:

- ☒ public health services manned mostly by non-health professionals implementing interventions aimed at preventing health hazards, improving environmental sanitation, monitoring water quality, and prevention of adulteration in food and drugs; and
- ☒ medical care services manned by health professionals and paraprofessionals providing

promotive, preventive, curative and rehabilitative care to individuals.

2.8.180 In the post-independence period, tasks relating to civic services infrastructure and environment got transferred to other departments dealing with urban and rural development, environment and forests. Medical care also underwent changes. Specialists in community medicine and public health focused on providing promotive and preventive care for major public health problems through outreach services. The clinicians provided institution-based preventive, promotive, curative and rehabilitative health care to individuals who came to the health care institutions.

2.8.181 With increasing knowledge and experience the earlier concept that prevention and curative care are two sides of the same coin, which mutually reinforce each other gained wider acceptance. This led to the re-emergence of the concept of public health providing comprehensive health care. This concept was initially developed and implemented in maternal and child health but soon all other disciplines including clinical specialities dealing with non-communicable diseases such as cardiology adopted this. As a result, public health is today defined as a discipline aimed at developing a health system to deliver equitable, appropriate and holistic care to improve the health status of the individual and health indices of the country at an affordable cost.

2.8.182 The newer concepts of public health were discussed in 1999 and the 'Calcutta Declaration 1999' redefined the role of public health. The declaration stated that as the countries in the Southeast Asian region are stepping into the new century with an unfinished agenda of existing health concerns, amidst new and complex emerging challenges, there is a need for innovative solutions. Public health should meet the health needs of the community and preserve, protect and promote the health of the people. The declaration emphasized the need for capacity building in public health as a multi-disciplinary endeavour to design, develop and provide health care to meet health needs of the population.

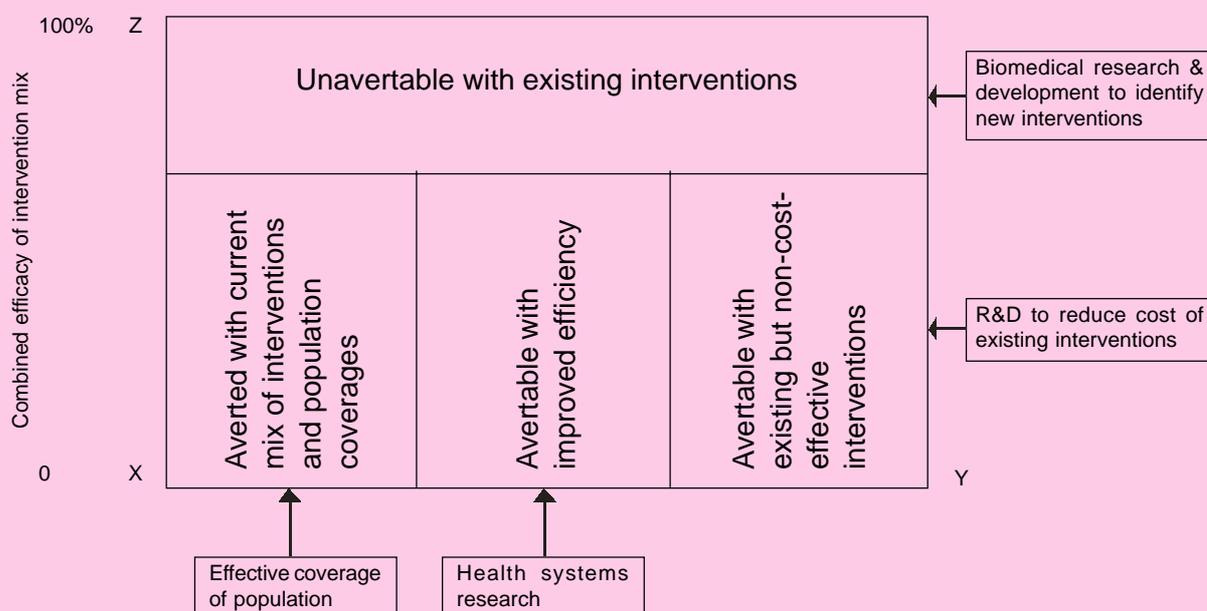
2.8.183 Taken in this broader perspective, public health deals with the formulation, implementation and monitoring of evidence-based health policies, strategies and programmes. It also attempts to create a supportive environment for the effective implementation of such programmes by addressing critical issues that affect health care including quality, equity, ethics, environment and globalisation. Every effort has to be made to ensure that policy makers, programme managers, health care providers and people themselves internalise and support this broad concept of public health and contribute towards attaining the public health goals.

Health Systems Research and Bio-medical Research

2.8.184 India had invested in health system and biomedical research from as early as 1911 so that appropriate policies, strategies and programmes to improve the health status of the population can be evolved on the basis of data from research studies. Bio-medical and health systems research is being

carried out by research institutions, universities, medical colleges and health service providers. Biomedical research is currently funded by several agencies including the ICMR, the Departments of Biotechnology, Department of Science and Technology, the Council of Scientific and Industrial Research (CSIR) and the concerned ministries. Basic, clinical and operational research studies relevant to major health problems have been the focus of research programmes. In addition, the private sector has been investing in research, mainly in the pharmaceutical sector. The national research efforts have laid the foundation of various health care programmes in the country and have gained global recognition. ICMR research studies have also led to the development of appropriate guidelines for the implementation of major programmes such as tubal sterilisation, medical termination of pregnancy and assisted reproduction. Data from ICMR surveys on HIV infection, cancer, under-nutrition and blindness have provided the database for the formulation of national programmes on these diseases and for monitoring their impact.

Figure 2.8.31 Research Needs



X = population coverage with current mix of interventions;

Y = maximum achievable coverage with a mix of available cost-effective interventions

Z = combined efficacy of a mix of all available interventions

Source : Investing in Health Research and Development, WHO, 1996

National Programmes formulated on the basis of ICMR's R&D efforts

- ☒ Domiciliary treatment for tuberculosis,
- ☒ Short course chemotherapy for tuberculosis,
- ☒ Multi drug therapy for leprosy,
- ☒ Oral rehydration therapy for treatment of diarrhoeal disease,
- ☒ Programme for prevention of blindness due to Vitamin A deficiency,
- ☒ Programmes for antenatal care,
- ☒ Management of anaemia in pregnancy.

2.8.185 In India, most of the morbidity and mortality is due to illnesses for which simple, inexpensive and effective preventive measures and time-tested cost-effective curative interventions are available. Therefore, priority has been given to health systems research for improving service delivery and coverage as well as operational research aimed at improving access to technological advances. Basic and clinical research leading to development of products, drugs, vaccines for prevention, diagnosis and management of illnesses especially major health problems for which currently there is no effective cure are encouraged (Figure 2.8.31).

2.8.186 During the Ninth Plan, the major focus of research efforts was on basic, applied and operational research for improving the quality, coverage, efficiency of health services. The thrust areas of research included communicable diseases, improvement of the health and nutritional status of women and children and improving contraceptive acceptance and continuation rates. In communicable diseases, research has focussed on development of indigenous immuno-diagnostics, improved drug regimens to combat emerging drug resistance among microbes, alternative strategies for vector control to combat increasing insecticide resistance and testing innovative disease control strategies through increased community partici-

pation. Studies on the health consequences of the Bhopal gas disaster (1984) and providing a database for planning the infrastructure needed to meet the health care requirements of the affected population continue. The major research areas relating to non-communicable diseases include early detection of cervical cancer in women and oral cancer in both sexes, anti-tobacco education, lifestyle modification to reduce the rising morbidity due to hypertension and cardiovascular diseases, documenting the health problems associated with lifestyle changes and increased longevity. Evaluation of the ongoing mid-day meal programmes in schools, assessment of changes in the dietary intake and nutritional status of urban and rural population over the last two decades, investigating the health effects of food contaminants and adulterants are some of the major areas of nutrition research.

2.8.187 During the Tenth Plan, efforts to generate data on the health impact of the socio-economic, demographic and epidemiological transition on the health and nutritional status of the population will continue. Health system research which will enable the existing systems to provide appropriate health care using effective, inexpensive technology for detection and management of health problems and ensure equitable, economical, and efficient service delivery will receive priority. Clinical, and operational research in both the modern system of medicine and ISM&H will continue. The major thrust areas of research in communicable, non-communicable diseases, nutrition and family welfare have been indicated in the respective sections. Other important areas include new drug development, improved drug delivery system and harnessing emerging technologies in genomics for diagnosis and management of diseases. Appropriate bio-safety containment facilities have to be set up in selected laboratories in order to facilitate basic research on pathogenic microbes, storage, handling, cultivation of virulent pathogens and in-vitro and in-vivo screening of anti-microbials. Inter-agency collaboration will ensure optimal utilisation of available resources and avoid unnecessary duplication of efforts.

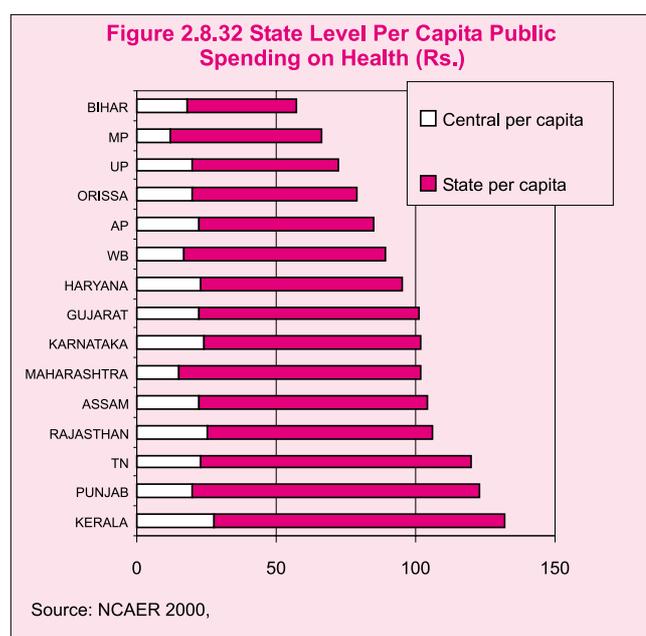
Health Care Financing

2.8.188 Since independence, health care has been recognized as an essential social sector investment. It was, therefore, initially envisaged that health services in government institutions will be provided free of cost to all. During the 1990s, it was recognized that, given the increasing awareness and expectations of the people, and the escalating costs of health care, this policy could not continue. The Ninth Plan envisaged that major public health priorities such as essential primary health care, emergency life saving services, services under the disease control and family welfare programmes will be provided free of cost for all. The Ninth Plan advocated that the Centre and the state governments should work out appropriate norms for levying user charges on people above the poverty line for other services and hospitalisation and evolve mechanisms for collection and utilisation of funds. The Planning Commission provided additional central assistance to the Kerala government for an experimental model in a district hospital where different segments of the APL population pay for health care and the hospital meets the costs of care of BPL (lowest 20 per cent) population through a system of cross-subsidisation.

2.8.189 The issue of how much the government sector, private individuals and the country as a whole is spending on health care and which segments of the population are benefiting has been debated widely during the last decade. As there is no National Health Accounting system, there is no information on total government expenditure on health and categories of people who benefit from this expenditure. The WHO has estimated that India, at present, is spending 4.5 per cent of gross domestic product (GDP) on health, of which 0.9 per cent is public expenditure. India ranks thirteenth from the bottom in terms of public spending on health (World Health Report 2000). The Central Statistical Organisation (CSO) reported that final government expenditure on health (which does not include expenditure on family welfare) for 1998-99 is Rs. 10,588 crore, accounting for 0.6 per cent of GDP. For the same year the plan and non-plan expenditure of 26 States and the Central Ministry of Health and Family Welfare alone comes to Rs.

16,771 crore or 0.95 per cent of the GDP. The Railways, Defence and the Department of Post and Telegraph have created health care infrastructure and spend substantial sums on the health care of their employees and their families. ESIS and PSUs spend large amounts of government funds on health care. The expenditure of PRIs and other local bodies on health is never accounted for as health expenditure nor is the reimbursement of health care costs by different departments at the Centre, in the States and PSUs taken into account while computing public expenditure on health. It is imperative that a system of National Health Accounting, reflecting total government expenditure on health is established. This will enable periodic review and appropriate policy decisions regarding modalities for ensuring optimal utilisation of the current government investment in the health sector and also future investments to meet public health needs.

2.8.190 Given India's size and the fact that health is a state subject, it is important to examine inter-state differences in spending patterns. While the central government provides funds to the states under centrally sponsored schemes based on uniform norms, per capita expenditure in states vary depending upon the prevalence of diseases and utilisation of funds allocated. If these are taken into account, the central government expenditure does not show much variation between states (Fig 2.8.32)



2.8.191 There are substantial variations in per capita expenditure on health by the states. At one end of the spectrum are states like Bihar, Madhya Pradesh, Uttar Pradesh and Orissa with low per capita expenditure, poor access to health care and poor health indices. At other end are Kerala, Punjab and Tamil Nadu with high expenditure and good health indices. However, Rajasthan and Assam continue to have poor health indices in spite of relatively higher expenditure (Figure 2.8.32). While funds are, no doubt, needed to improve health care and health indices, awareness, equitable distribution and utilisation of services is equally critical for the improvement of health indices. Kerala ranks high in two important dimensions-equitable spending between income groups and efficiency of the use of resources.

2.8.192 In all states, patients incur out-of-pocket expenses to meet the health care cost in public and privately-funded hospitals. There are massive differences in private spending on health care services in public and private facilities between states. Patients from Kerala and Punjab spend about four times more on health as compared to patients from Bihar. The high and low spending in private and public sector do not always go hand in hand with each other. In

Rajasthan out of pocket expenditure in private and government hospitals is almost equal, because the state has been levying user charges and providing drugs at cost price to persons admitted in government hospitals (Figure2.8.33). It is important that each state undertakes a detailed analysis of the current situation, identify critical points where appropriate interventions would enable the BPL population to utilise subsidised government health services while providing affordable health care to other segments of the population.

2.8.193 The poorer segments of population have less access to both public and private sector curative services than the better off sections. The out-of-pocket expense on both public and private facilities for the lowest income quintile is about one-fifth that of the highest quintile population (Figure2.8.34) suggesting thereby that the richest quintile utilise both private and public facilities more than the poorest quintile. The question whether the amount spent by different segments of the population results in their receiving the appropriate care remains unanswered as the country is yet to evolve and monitor appropriate treatment protocols and cost of care for specific illnesses in different settings.

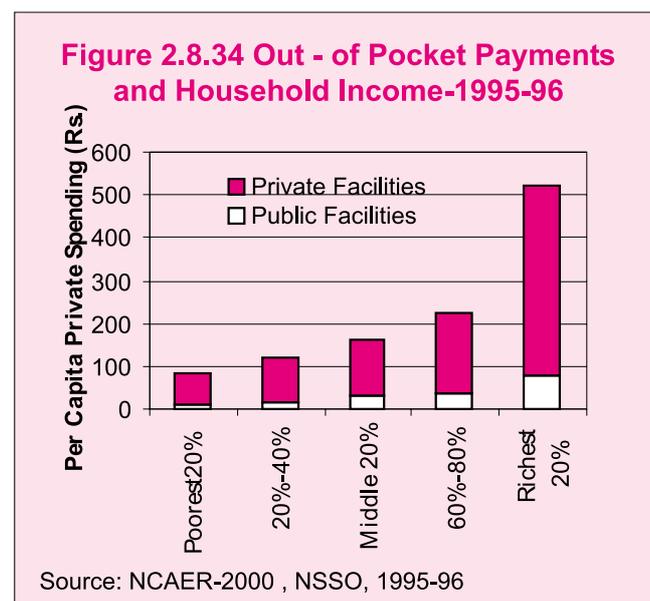
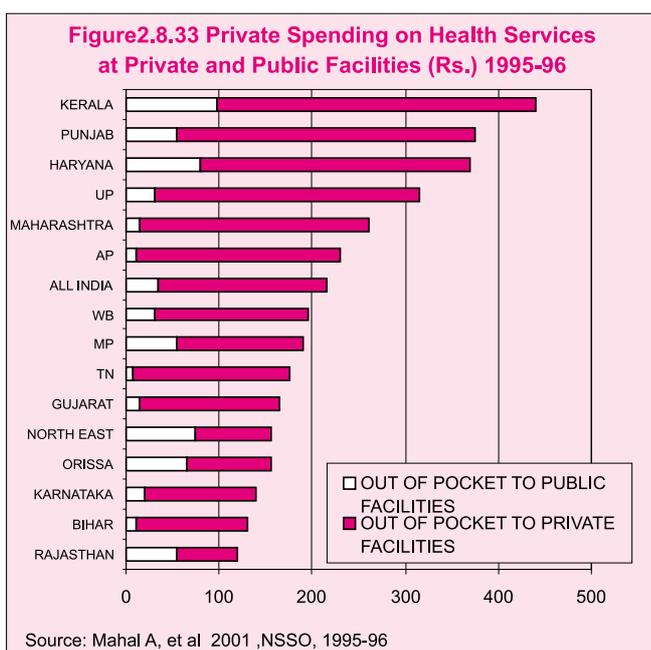


Figure 2.8.35 Distribution of Total out of Pocket Health Expenditures as A Proportion of Non-food Expenditures, All India, 1995-96



2.8.194 Out-of-pocket expenditure is the most common method of payment for private health care services. The poorest 20 per cent spent 12 per cent of the non-food expenditure on health care and the richest about 14 per cent. (Figure 2.8.35)

2.8.195 The out-of-pocket expenses of the SC/ST population is higher than the BPL families perhaps because they have greater problem in access to health care services (Figure 2.8.36). The urban population spent larger amount on health care as compared to their rural counterparts perhaps because they have ready access to high cost or hi-tech care.

2.8.196 Mechanisms by which different income groups meet the out-of-pocket expenses for hospitalisation is shown in

Figure 2.8.36 Out-of Pocket Payments by Socioeconomic Group, 1995-96

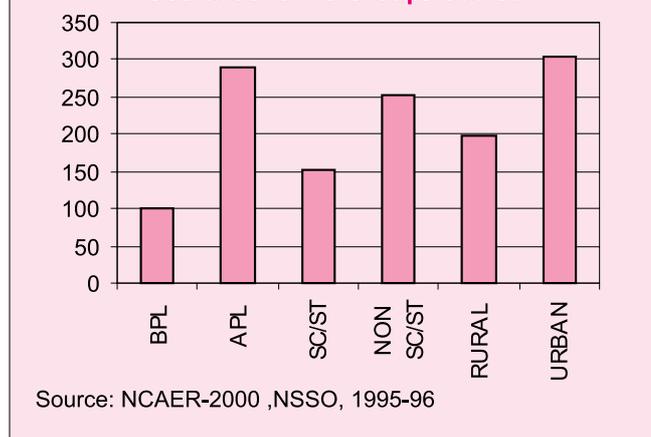
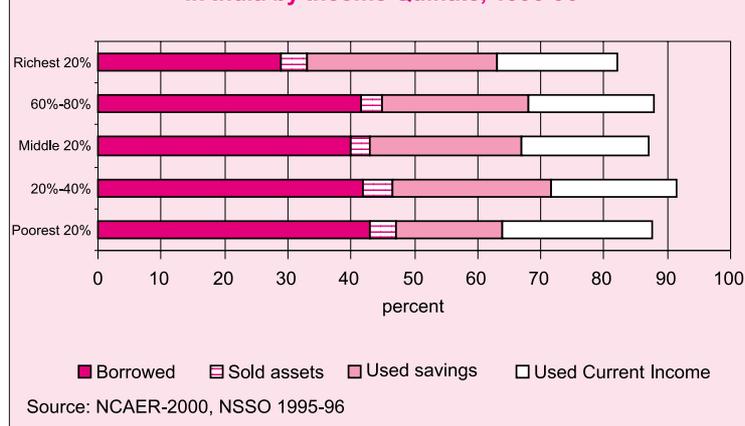


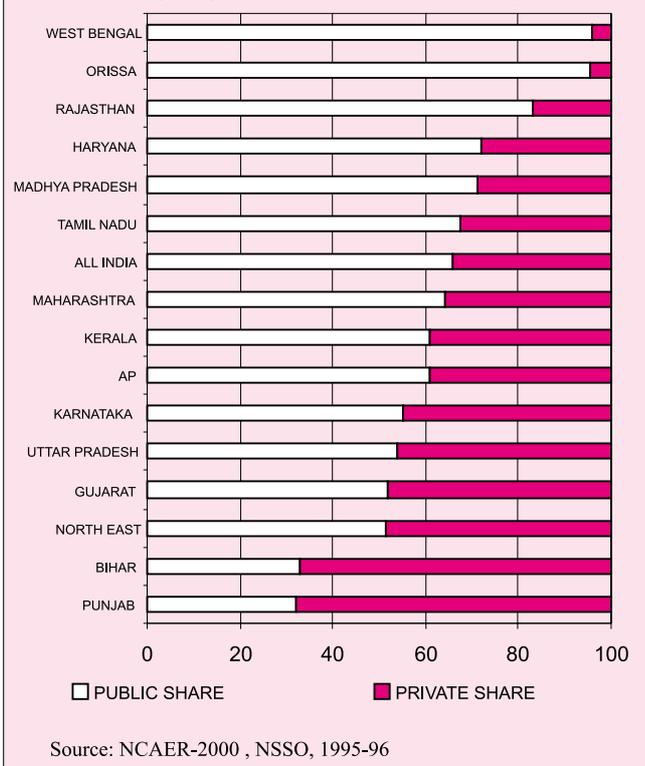
Figure 2.8.37. Hospitalisation for major illness is a cause of indebtedness in all income groups. With increasing awareness, people are willing to spend on health care. However, there is, at present, no mechanisms by which they can pay a part of their income, throughout their working life, so that the cost of health care or hospitalisation can be met without severe financial crisis. Health insurance in the government and private sector covers less than 10 per cent of the population, mostly from upper income group, government or industrial employees. There is need to explore mechanisms for providing near-universal coverage of the population for meeting the cost of hospitalisation and continuous care for chronic disease.

Figure 2.8.37 Sources of Financing for Private Expenditures on Hospitalisation in India by Income Quintile, 1995-96



2.8.197 There are substantial inter-state differences in the utilisation of public and private facilities by people below the poverty line. In Himachal Pradesh, West Bengal and Orissa the poor predominantly use public facilities. In contrast, the poor in Bihar and Punjab make very limited use of public sector in-patient facilities. The lack of functional government-funded hospitals in Bihar may be the reason for the poor going to private hospitals. In Punjab, the perception regarding convenience, comfort and quality of care may be the reason why private sector hospitals are preferred to functional public sector hospitals. In Orissa, the absence of private sector facilities in the remote rural and tribal

Figure 2.8.38 Public And Private Sector of Inpatient Bed Days by People Below the Pverty Line



areas might be the reason for the poor using public sector hospitals (Figure 2.8.38).

2.8.198 Health sector reforms during the Tenth Plan will focus on:

- ☒ addressing the issues of need and equity in access to health care;
- ☒ devising a targeting mechanism by which people below poverty line have ready access to subsidised health services to meet essential health care needs, while those from above the poverty line pay for the services both in government and private care facilities.

2.8.199 There is an urgent need to evolve, implement and evaluate an appropriate scheme for health financing for different income groups. Health finance options may include health insurance for individuals, institutions, industries and social insurance for BPL families. Health insurance has been suggested as a mechanism for reducing the adverse economic consequences of hospitalisation and treatment for chronic ailments requiring expensive and

continuous care. However, the experience in developed countries show that health insurance runs the risk of market failure and cost escalation because:

- ☒ disproportionately large number of individuals who get insured are those who expect significant health expenditure in the future;
- ☒ reduced incentives for individuals to take precautions against poor health;
- ☒ health care providers tend to give more care than medically appropriate; and
- ☒ insurance companies have low capital reserves and incomplete epidemiological information.

2.8.200 Attempts by insurance companies to prevent market failure may have serious health implications, if it is achieved either by exclusion of high risk individuals or by escalation of cost of insurance.

2.8.201 Health insurance can improve access to good quality health care only if it is able to provide for health care in institutions with adequate facilities and skilled personnel at affordable cost. Some states like Kerala and Delhi are conceptualising pilot projects where the government pays the social insurance premium to meet the hospitalization cost for the poor admitted in government institutions. During the Tenth Plan global and Indian experience with health insurance/health maintenance organisations will be reviewed and suitable models replicated. In order to encourage healthy lifestyles, a yearly 'no claim bonus'/adjustment of the premium could be made on the basis of previous year's hospitalisation cost reimbursed by the insurance scheme.

Financing Health Care in India

2.8.202 The importance of health as a determinant of human development is well accepted. Health is high on the agenda of the government and the people, both of whom are willing to invest for improving health status. Spiraling costs and rising demand are putting a severe strain on the health

system, whether government-funded or private. Health care can absorb a very large quantity of investments from the government and individuals and yet leave millions of people, especially the poor who suffer from a high disease burden, inadequately covered (Figure 2.8.39) It is also being

increasingly realized that merely investing more in health is unlikely to improve the health status of the population. It is essential that policies and strategies are developed to promote equitable access to preventive and curative services so that there is an improvement in health indices (Figure 2.8.40).

Figure 2.8.39 Unproductive Investment in Health : a Vicious Cycle

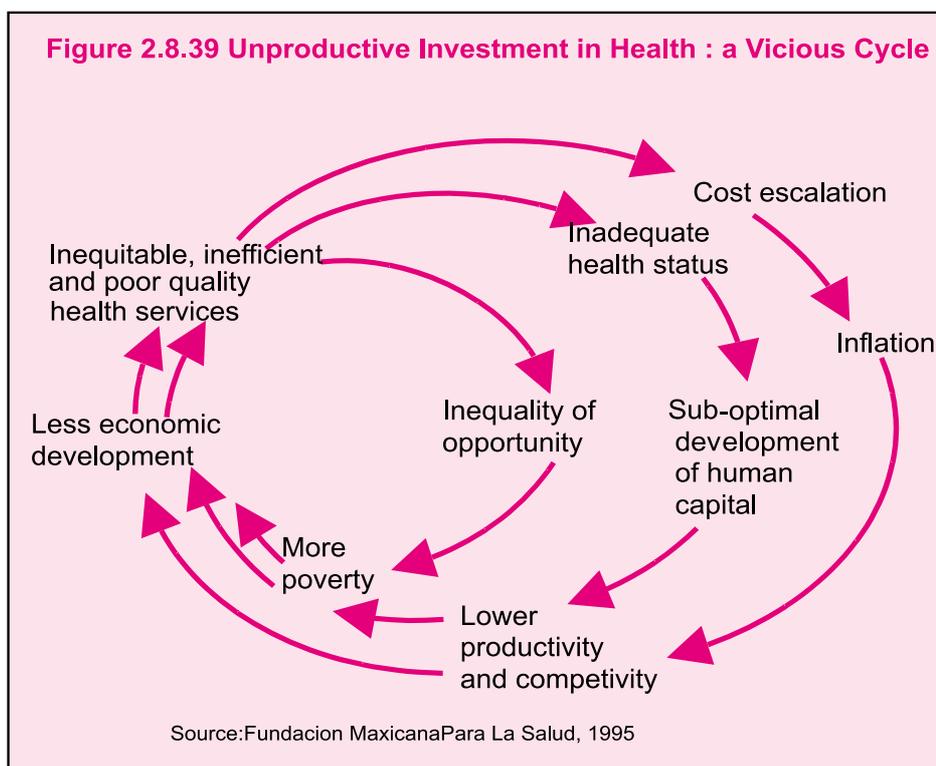
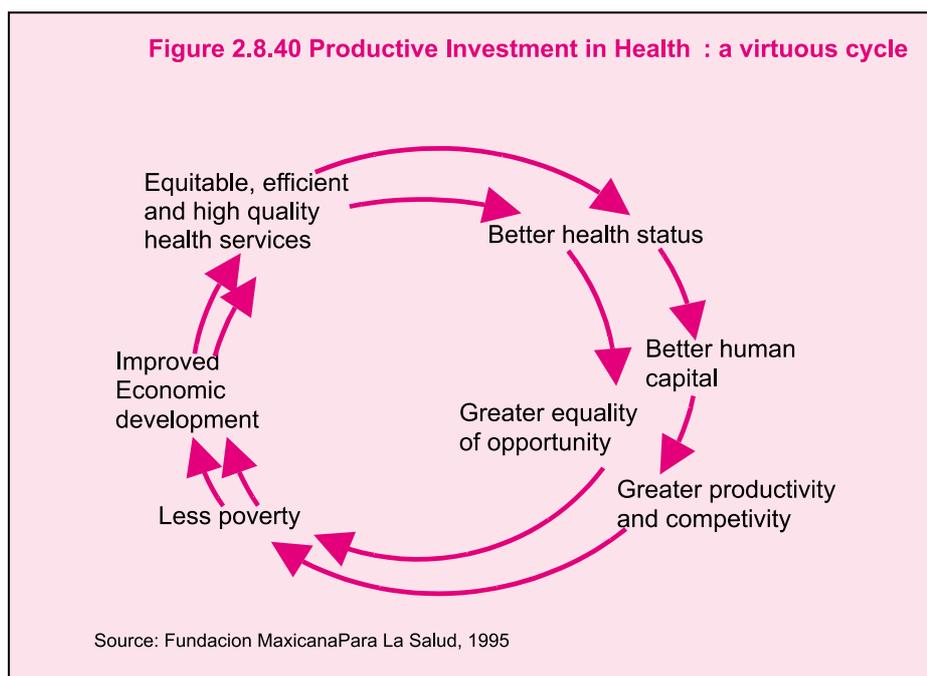


Figure 2.8.40 Productive Investment in Health : a virtuous cycle



2.8.203 It is essential to quantify the interactions between the health of the population and economy, gauge essential potential benefits of various interventions and ensure adequate investment in chosen priority sectors. Concurrently, every effort should be made to organise and deliver health services equitably and efficiently. It is important to get adequate data on disease burden and current modalities of funding health care in different states. These data should then be used for:

- ☒ making an enabling policy framework;
- ☒ selecting appropriate strategy;
- ☒ implementing and evaluating packages of health interventions; and
- ☒ assessing quality of care and its cost effectiveness.

2.8.204 Health policy research and health system research at the national level is essential and a reliable information base is a pre-condition for effective investment in health care and performance assessment of the health system.

Health Sector Outlay:

2.8.205 The health sector is funded by the central and state governments and externally assisted projects (in both the Centre and the states).

Externally Assisted Projects

2.8.206 Externally-assisted projects can be classified under the following:

- ☒ assistance to different components of the family welfare programme;
- ☒ assistance to centrally sponsored schemes of the disease control programmes;
- ☒ assistance to state governments to strengthen infrastructure and manpower through bilateral direct assistance to the states and from funding agencies like the World Bank routed through the central government.

2.8.207 Externally assisted projects initially focused on rural primary health care e.g. India Population Project (IPP I to IV, VI & VII) and later also covered urban primary health care (IPP V, VIII). During the 1990s, externally assisted projects for strengthening secondary care institutions were taken up in seven states. The tertiary care institutions have not received much funding from externally-assisted projects, except for individual institutions like Sanjay Gandhi Institute of Medical Education and Research (from Japan).

2.8.208 Investment from externally assisted projects was used for strengthening infrastructure, purchase/replacement of equipment, meeting the cost of drugs and consumables and for operationalising health sector reform. However, it has been reported that externally assisted projects introduce a project framework, management structures, parameters of expenditure, unit costs and institutional arrangements for monitoring which are very different from the ones already in place under national and state level programmes. This creates distortions and the performance in other programmes deteriorates. Also, service providers who have worked in the externally-assisted projects become de-motivated after the project is completed because similar parameters of expenditure may not be sustainable. It has also been reported that improvement in facilities and equipment through externally-assisted projects have not resulted in improved performance. For example, despite the construction of a large number of sub-centres and staff quarters, occupancy remained low and deliveries in these institutions did not go up. States have not been able to provide adequate funds for maintenance of these infrastructure and equipment procured under the EAPs, so that there has been a progressive deterioration of these. These aspects and the issue of sustainability of the projects after they are completed need be looked into at the time of deciding areas/schemes for external assistance in the health sector. The mechanisms for repayment of loans when the EAP is in the

form of loans is another aspect that has to be considered before EAPs in health sector are initiated.

State Government:

2.8.209 The state governments provide funds for primary, secondary, tertiary care institutions (including medical colleges and their associated hospitals). State governments also receive funds from centrally sponsored disease control programmes and family welfare programme. Health was one of the priority sectors for which funds were provided during the Ninth Plan as additional central assistance under PMGY. These funds were to be utilised for meeting the essential requirements for operationalising rural primary health care. The ongoing and proposed externally assisted projects provide additional resources. The major activities that received funds during the Ninth Plan were:

- ☒ restructuring of the health care infrastructure;
- ☒ re-deployment and skill up gradation of personnel;
- ☒ development of referral network;
- ☒ improvement in the HMIS;
- ☒ disease control programmes; and
- ☒ development of a disease surveillance and response system at the district level.

2.8.210 Funds provided during the Tenth Plan will be utilised to improve the existing health care infrastructure and manpower in the states so that quality and coverage improves. The state-wise outlay and expenditure in the Ninth Plan is shown in Annexure 2.8.5.

Central Sector

2.8.211 Funds from the central sector are being utilised for supporting:

- ☒ medical education institutions of excellence;

- ☒ training institution for nurses;
- ☒ vaccine production institutes and special centres for specific diseases;
- ☒ Central Government Health Schemes;
- ☒ emergency relief measures; and
- ☒ pilot central sector projects either to demonstrate the feasibility of disease control or for working out strategies for health care.

2.8.212 In addition to the domestic budgetary support, external funds have also been obtained for several centrally sponsored disease control programmes.

Zero Based Budgeting-2001

2.8.213 In November-December 2001 the Planning Commission and the Department of Health had reviewed all the ongoing Ninth Plan schemes/programmes and undertaken a zero-based budgeting exercise. In the Ninth Plan, there were a total of 91 schemes (22 centrally sponsored schemes and 69 central sector schemes). Of these 45 are being retained, one is being transferred to the states, 38 are being merged into 14 schemes and seven are being weeded out. A total of 59 schemes, with a Ninth Plan outlay of Rs. 5,088.19 crore are continuing during the Tenth Plan. The summary of the zero-based budgeting exercise is given in Table 2.8.15.

Path Ahead And Goals

2.8.214 Major focus in the Tenth Plan will be to fully operationalise the structural and functional health sector reforms initiated in the Ninth Plan and

- ☒ improve efficiency of the existing health care system – in government, private and voluntary sectors;
- ☒ improve quality of care at all levels;
- ☒ mainstream ISM&H practitioners so that in addition to practising their system of care, they

Table 2. 8.15
Zero Based Budgeting Exercise 2001–Centrally Sponsored Schemes & Central Sector Schemes

Rs. in Crore

Category	Central sector			Centrally sponsored		
	No. of Schemes	Ninth Plan Outlay	Ninth Plan Anticipated Expenditure	No. of Schemes	Ninth Plan Outlay	Ninth Plan Anticipated Expenditure
Schemes to be retained	39	995.24	968.39	6	1,984.00	2,055.94
Schemes to be merged	8/24	766.45	850.73	6/14	1,342.50	1,202.59
Schemes to be transferred to the states	1	4.00	1.88	NIL	NIL	NIL
Schemes to be weeded out/dropped	5	22.00	5.69	2	4.00	2.98
Total Ninth Plan schemes	69	1,787.69	1826.69	22	3,330.50	3,261.51
No. of ongoing schemes that will continue in Tenth Plan	47	1,761.69	1819.12	12	3,326.50	3,258.53

can help in improving coverage and utilization of national disease control programme and family welfare programme;

- develop efficient logistics of supplies of drugs and diagnostics and promote rational use of drugs;
- explore alternative systems of health care financing so that essential health care based on needs is available to all at affordable cost.

2.8.215 The National Health Policy (NHP) formulated in 1983 - after the Alma Ata declaration - articulated the ambition of the country to provide health care for all based on needs and to rapidly achieve all round improvement in the health indices

The Ninth Plan recommended a review of the National Health Policy in view of:

- ongoing demographic transition;
- ongoing epidemiological transition;
- expansion of health care infrastructure;
- changes in health care seeking behaviour;
- availability of newer technologies for diagnosis and treatment;
- rising expectations of the population, and escalating cost of health care.

of the population. The NHP (1983) provided a comprehensive framework for planning, implementation, monitoring of health services and goals to be achieved by 2000. The Department of Health has reviewed the performance since 1983 and formulated the NHP, 2002 so that it provides a reliable and relevant policy framework for improving health care and measuring and monitoring the health care delivery systems and health status of the population; NHP2002 has laid down the goals upto 2015.

2.8.216 The NHP 2002 emphasises that any significant improvement in the quality of health services and health status of the citizens, would depend on increased financial and material inputs, service providers treating their responsibility not as a commercial activity, but as a service (albeit a paid one), the citizens demanding improvement in the quality of services, a responsive health delivery system, particularly in the public sector, and improved governance. Recognising that the health needs of the country are enormous and dynamic and acknowledging the human and financial resource constraints, the NHP 2002, attempts to make choices between various priorities and focuses on:

- expanding and improving primary health care facilities;

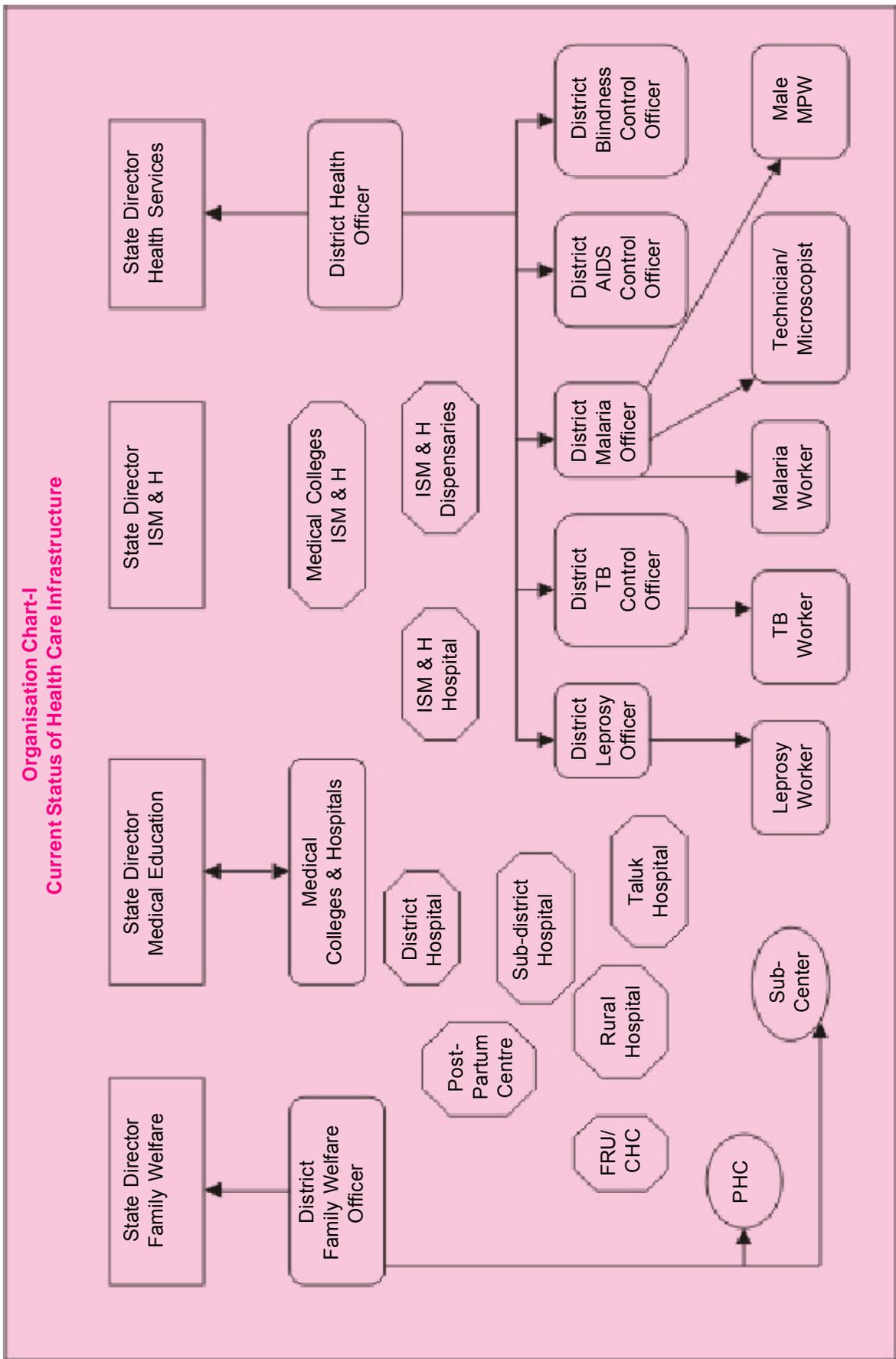
NHP2002- Goals to be achieved	
Eradicate polio and yaws	2005
Eliminate leprosy	2005
Eliminate kala azar	2010
Eliminate lymphatic filariasis	2015
Achieve zero level growth of HIV/AIDS	2007
Reduce mortality on account of TB, malaria and other vector and water- borne diseases by 50 per cent	2010
Reduce prevalence of blindness to 0.5 per cent	2010
Reduce IMR to 30/1000 and MMR to 100/100,000 live births	2010
Increase utilisation of public health facilities from the current level of <20 per cent to >75 per cent	2010
Establish an integrated system of surveillance, national health accounts and health statistics.	2005

Source : NHP 2002

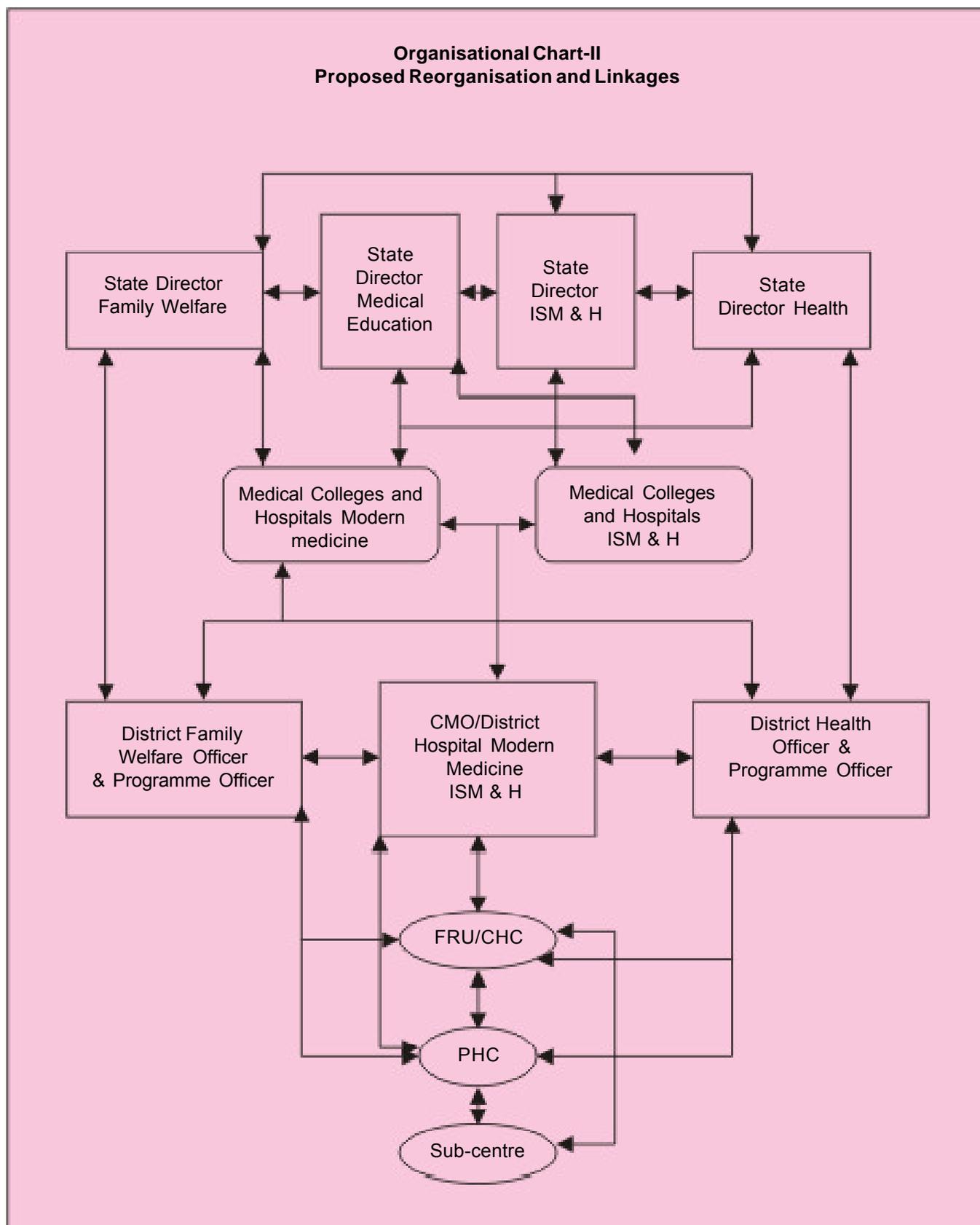
- ☒ organisational restructuring of the national public health systems to facilitate more equitable access to the health care;
- ☒ area-specific programmes to meet the health needs of women, children, elderly, tribals and socio-economically under-served sections;
- ☒ programmes for the control of diseases like TB, malaria, blindness and HIV/AIDS;
- ☒ disaster management plan to cope with natural and man-made calamities; and
- ☒ macro-policy prescriptions for coordination between government, voluntary, private sector, NGOs and other institutions of civil society.

2.8.217 It is expected that with effective implementation of the policies and strategies indicated in the Tenth Plan and NHP 2002 ,the country will achieve goals set and complete the health and demographic transition with in the set time frame. The schemewise outlays of Department of Health for the Tenth Plan is indicated in Annexure 2.8.6 and Appendix.

Organisation Chart-I
Current Status of Health Care Infrastructure



**Organisational Chart-II
Proposed Reorganisation and Linkages**



STATE WISE/SYSTEM WISE NUMBER OF HOSPITALS AND DISPENSARIES UNDER MODERN SYSTEM AND ISM & H

STATES/UTs	RURAL HEALTH CARE INFRASTRUCTURE						DISPENSARIES				HOSPITALS									
	Sub centres	Primary Health Centres	Community Health Centre	Modern System of Medicine @	ISM&H @	Urban Family Welfare Centres	PostPartum Centres	Reqd. 1991	In Position 1991	Goal For the 10th Plan	Reqd. 1991	In Position 1991	Goal For the 10th Plan	Dispensaries	Hospitals	Urban Family Welfare Centres	PostPartum Centres			
1 ANDHRA PRADESH	10242	10568	(326)	1707	1386	321	427	219	208	134	0	1930	3133	69778	22	1249	131	28	55	
2 ARUNACHAL PRADESH	220	273	(53)	37	65	(28)	9	20	(11)	11	0	46	-	-	1	15	6	-	1	
3 ASSAM	4356	5109	(753)	726	610	116	181	100	81	325	42	409	268	12661	6	260	10	-	11	30
4 BIHAR	11547	10332	1215	1961	1642	319	490	87	403	427	96	831	328	29090	14	1385	42	-	37	54
5 CHHATTISGARH	4692	3818	874	704	545	159	176	150	26											
6 GOA	138	172	(34)	23	19	4	6	5	1	33	0	115	105	3848	6	245	-	-	4	-
7 GUJARAT	6168	7274	(1106)	1028	1001	27	257	242	15	7255	9289	583	2528	63417	55	2476	113	28	33	55
8 HARYANA	2482	2299	183	414	401	13	103	64	39	130	126	454	80	7230	7	850	19	16	13	20
9 HIMACHAL	973	2069	(1096)	162	302	(140)	40	65	(25)	173	169	1081	63	5463	18	355	89	-	11	22
10 JAMMU & KASHMIR	1176	1700	(524)	196	337	(141)	49	53	(4)	610	0	445	67	8202	4	235	12	-	11	6
11 JHARKHAND	4278	4462	*	676	561	115	169	47	122											
12 KARNATAKA	6431	8143	(1712)	1072	1676	(604)	268	249	19	797	1163	642	293	38479	178	8400	87	-	39	64
13 KERALA	4325	5094	(769)	721	944	(223)	180	105	75	53	164	3523	2107	97840	182	4031	-	-	22	60
14 MADHYA PRADESH	7430	8835	*	1316	1193	123	329	229	100	256	2	2363	363	18141	47	1810	63	99	47	75
15 MAHARASHTRA#10533	9725	9725	808	1756	1768	(12)	439	351	88	8143	1622	486	3115	78920	160	18618	74	278	52	69
16 MANIPUR	344	420	(76)	57	69	(12)	14	16	(2)	42	0	10	17	1626	3	75	2	-	3	1
17 MEGHALAYA	464	413	51	77	85	(8)	19	13	6	21	0	5	9	1828	0	0	1	-	3	1
18 MIZORAM	122	346	(224)	20	58	(38)	5	9	(4)	13	130	2	12	1021	0	0	1	-	2	4
19 NAGALAND	325	302	23	54	46	8	14	9	5	17	68	2	29	1158	0	0	-	-	1	1
20 ORISSA	6374	5927	447	1062	1352	(290)	265	157	108	1197	282	1104	273	11980	13	473	10	8	19	60
21 PUNJAB#	2858	2852	6	476	484	(8)	119	105	14	1469	5503	629	220	14921	17	956	23	64	19	35
22 RAJASTHAN	7484	9926	(2442)	1247	1674	(427)	312	263	49	268	134	3689	219	21387	102	1631	61	90	35	100

STATE WISE/SYSTEM WISE NUMBER OF HOSPITALS AND DISPENSARIES UNDER MODERN SYSTEM AND ISM & H

STATES/UTs	RURAL HEALTH CARE INFRASTRUCTURE						DISPENSARIES				HOSPITALS									
	Sub centres	Primary Health Centres	Community Health Centre	Modern System of Medicine @	ISM&H @@	Modern System of Medicine @	Modern System of Medicine @	Dispensaries	ISM&H @@	Modern System of Medicine @	ISM&H@@	Urban Family Welfare Centres	PostPartum Centres							
	Reqd. 1991	In Position 1991	Goal For the 10th Plan	Reqd. 1991	In Position 1991	Goal For the 10th Plan	Reqd. 1991	In Position 1991	Goal For the 10th Plan	Reqd. 1991	In Position 1991	Goal For the 10th Plan	Reqd. 1991	In Position 1991	Goal For the 10th Plan					
23 SIKKIM	85	147	(62)	14	24	(10)	4	2	2	147	0	2	1	300	0	0	1	-	1	2
24 TAMILNADU	7424	8682	(1258)	1237	1436	(199)	309	72	237	512	278	396	408	48780	229	2187	65	100	32	87
25 TRIPURA	579	539	40	96	58	38	24	11	13	612	0	96	29	1866	2	30	9	-	1	3
26 UTARANCHAL	1764	1609	155	265	257	8	66	30	36											
27 UTTAR PRADESH	20573	18576	1997	3458	3551	*	865	280	585	1750	5729	2239	735	47278	1843	11496	81	150	72	147
28 WEST BENGAL#	10356	8126	2230	1726	1262	464	431	99	332	571	0	1153	399	53732	19	1007	111	-	27	55
29 ANDAMAN & NICOBAR ISLANDS	45	100	(55)	7	18	(11)	2	4	(2)	138	0	7	10	901	0	0	-	-	1	-
30 CHANDIGARH#	13	13	0	2	0	2	1	1	0	33	0	9	1	500	3	185	3	10	2	-
31 DADRA & NAGAR HAVELI	40	36	4	7	6	1	2	1	1	3	6	2	3	115	2	0	-	-	-	-
32 DAMAN & DIU	12	21	(9)	2	3	(1)	1	1	0	28	0	1	3	150	1	5	-	-	-	-
33 DELHI	190	42	148	32	8	24	8	8	8	490	0	236	77	19345	17	1322	69	28	9	5
34 LAKSHADWEEP	7	14	(7)	1	4	(3)	3	3	(3)	0	0	6	2	70	0	0	-	-	-	-
35 PONDICHERRY	58	80	(22)	10	39	(29)	3	4	(1)	12	0	21	29	3136	0	0	-	-	3	-
36 CGHS	-	-	-	-	-	-	-	-	-	241	-	79	-	-	1	25	-	-	-	-
37 CENTRAL RESEARCH COUNCILS	-	-	-	-	-	-	-	-	-	-	-	85	-	-	39	930	-	-	-	-
38 M/o RAILWAY	-	-	-	-	-	-	-	-	-	-	-	162	-	-	0	0	-	-	-	-
36 M/o LABOUR	-	-	-	-	-	-	-	-	-	-	-	157	-	-	0	0	-	-	-	-
40 M/o COAL	-	-	-	-	-	-	-	-	-	-	-	28	-	-	0	0	-	-	-	-
TOTAL	134108	138044	8181	22349	22928	1714	5587	3077	2562	25911	24803	23028	14926	663163	3005	60631	1083	871	538	1012

FIGURES IN BRACKET INDICATE THE SURPLUS INFRASTRUCTURE, SHORTFALL AS ON 31.3.2001;

@ FOR THE PERIOD 1.1.1998: @@ FOR 1.4.1999

NOTE:- = NIL INFORMATION. THE TOTAL NUMBER OF HOMOEOPATHIC HOSPITALS HAVE REDUCED AS UTTAR PRADESH HAS REPORTED REDUCED FIGURES.

= INFORMATION FOR THE CURRENT YEAR HAS NOT BEEN RECEIVED, HENCE REPEATED FOR THE LATEST AVAILABLE YEAR.

SOURCE: HEALTH INFORMATION OF INDIA, ISM&H IN INDIA AND D/O FAMILY WELFARE; FIGURES ARE PROVISIONAL

Manpower Requirement in Rural Primary Health Care Institutions

Category of manpower	Requirement for Census 1991	In position as on 30.06.2000	Number sanctioned	Gap (2-3)
1	2	3	4	5
Specialists (4/CHC)	22348	3741	6579	18607
Doctors at PHCs (1/PHC)	22349	25506	29702	3157*
Block Extension Educator/ Health Educator (1/PHC)	22349	5508	6534	16841
Pharmacist (1/CHC+1/PHC)	27936	21077	22871	6859
Lab. Technician (1/CHC+1/PHC)	27936	12709	15865	15227
X-ray Technician/ Radiographer (1/CHC)	5587	1768	2137	3819
Nurse Midwife (7/CHC+1/PHC)	61458	17673	22672	43785
Health Assistant (M) (1/PHC)	22349	22265	26427	84
Health Assistant (F) (1/PHC)	22349	19426	22479	2923
Health Worker (M) (1/SC)	134108	73327	87504	60781
Health Worker (F) (1/SC+1/PHC)	156457	134086	144012	22371
TOTAL	525226	337086	386782	191297

* indicates surplus and has not been added to Gap

Source :- RHS Bulletin, June, 2000 (Ministry of Health & FW)

Outlay for Health in the States & Union Territories

Rs. Lakhs

STATES	9th Plan	1997-98		1998-99		1999-2000	2000-01	2001-02
	OUTLAY HEALTH	OUTLAY HEALTH	Act. Expd. HEALTH	OUTLAY HEALTH	Act. Expd. HEALTH	OUTLAY HEALTH	OUTLAY HEALTH	OUTLAY HEALTH
1	2	3	4	5	6	7	8	9
ANDHRA PRADESH	63052.00	13937.00	12366.00	20046.00	19865.00	28033.00	27749.95	33223.02
ARUNACHAL PRADESH	33502.00	3149.00	1782.00	3520.00	1814.00	2947.00	2068.93	2476.01
ASSAM	38410.00	6561.00	6223.00	7191.00	6887.00	7741.00	7439.00	12580.00
BIHAR	83200.00	7245.00	4950.00	12177.00	6902.00	12768.00	9891.01	10078.21
GOA	8122.00	1082.00	1032.00	772.00	1069.00	1646.00	1423.00	1649.00
GUJARAT	83225.00	22093.00	17180.00	23550.00	17179.00	25100.00	26000.00	21000.00
HARYANA	35134.00	3882.00	4493.00	5946.00	4126.00	5327.00	5648.00	6595.00
HIMACHAL PRADESH	31765.00	5544.00	6535.00	8965.70	8164.00	10555.00	9685.09	12014.86
J & K	110029.00	7450.00	6989.00	11385.51	8244.00	11974.00	10595.17	11628.32
KARNATAKA	110000.00	18359.00	21914.00	19544.30	22909.00	22774.00	22558.11	26879.60
KERALA	30940.00	6096.00	5828.00	6200.00	7343.00	6400.00	6335.00	5553.00
MADHYAPRADESH	56787.00	9331.00	7031.00	17351.47	14524.00	13524.00	11217.62	13462.62
MAHARASHTRA	91823.00	17391.00	13811.00	22993.00	16224.00	27798.00	30485.85	39128.91
MANIPUR	3600.00	630.00	540.00	809.35	809.00	1080.00	1250.00	1486.00
MEGHALAYA	14000.00	2430.00	1790.00	2430.00	2360.00	3079.00	3300.00	3200.00
MIZORAM	11201.00	1651.00	1651.00	1816.00	1785.00	2286.00	2562.00	2542.00
NAGALAND	10631.00	2506.00	2480.00	2128.00	2022.00	2128.00	1577.00	1283.00
ORISSA	41606.00	4104.00	5198.00	7526.21	7042.00	13208.00	8405.05	14915.16
PUNJAB	51159.00	9938.00	3187.00	16352.00	8374.00	18319.00	19187.00	17465.57
RAJASTHAN	77060.00	13919.00	12339.00	15289.00	10991.00	17262.00	9914.94	12366.30
SIKKIM	8000.00	857.00	757.00	814.00	1914.00	1559.00	1200.00	1373.50
TAMILNADU	78052.00	8909.00	11005.00	11650.93	12843.00	12426.00	12724.42	18084.16
TRIPURA	8559.00	1371.00	1091.00	1407.92	1448.00	1355.00	1442.46	1879.18
UTTAR PRADESH	118500.00	17312.00	15609.00	40551.00	10862.00	42816.00	30200.00	37278.00
WEST BENGAL	97864.00	20633.00	3322.00	19286.00	7811.00	23502.00	32176.00	42931.24
TOTAL STATES	1296221.00	206380.00	169103.00	279702.39	203511.00	315607.00	295035.60	351072.66
U T s								
A & N ISLANDS	7741.00	1559.00	1831.59	1895.00	2055.29	2000.00	1900.00	1900.00
CHANDIGARH	17065.00	3617.00	3748.90	3548.30	3297.61	3483.00	3717.00	3947.25
D & N HAVELI	514.00	219.00	148.87	252.70	189.82	280.00	217.80	234.80
DAMAN & DIU	887.00	133.00	165.96	173.00	186.91	136.00	150.10	165.00
DELHI	110140.00	15240.50	12684.15	19700.00	13994.62	27345.00	26642.00	34121.00
LAKSHADWEEP	817.46	233.85	267.78	333.00	323.61	229.03	281.45	211.46
PONDICHERRY	10000.00	1630.00	1546.97	2370.00	1921.30	2720.00	2720.00	3160.54
TOTAL UTs	147164.46	22632.35	20394.22	28272.00	21969.16	36193.03	35628.35	43740.05
GRAND TOTAL (STATES & UTs)	1443385.46	229012.35	189497.22	307974.39	225480.16	351800.03	330663.95	394812.71
CHHATISGARH								6024.66
JHARKHAND								NA
UTTARANCHAL								5972.00
GRAND TOTAL (STATES & UTs) Incl 2 states								406809.37

Outlays for Department of Health

Rs crores

IX	X	Name of the Schemes / Institution	9th Plan Allocation	9th Plan Anticipated Expenditure	10th Plan Allocation Agreed by PC	2002-03 Outlay
CENTRALLY SPONSORED SCHEMES						
Control of communicable Diseases:						
1&2	1	National Vector Borne Diseases Control Programme (Malaria, Kala-Azar, Filariasis, Dengue and J.E.)	1000.00	954.95	1370.00	235.00
	3	National Leprosy Eradication Programme.	301.00	388.48	255.00	75.00
	4	National Tuberculosis Control Programme.	450.00	462.73	680.00	115.00
	5	National AIDS Control Programme including Blood Safety Measures and National S.T.D. Control Programme	760.00	745.26	1270.00	225.00
	6	National Guinea Worm Eradication Prog.	2.00	1.29		
	7	Disease Surveillance Programme	25.00	20.32	190.00	10.00
	8	Hospital Waste Management	2.00	1.79	10.00	5.00
Strengthening of Drug & Food Administration & Control Capacity Building						
	9	Assistance to States for Capacity Building (drug Quality)	20.00	29.00	60.00	20.00
10	8	Capacity Building for drug & PFA	20.00	1.00	97.00	1.30
11		Strengthening of State Drug Analytical Laboratories	5.00	5.10		
12		Strengthening of State Drug Control organisations including improvement of their information system and strengthening of enforcement and supporting staff	5.00			
13		Financial Assistance to the States for Strengthening their food testing laboratories	5.00	0.80		
14		Setting up of District Food Inspection Units in the States/ UTs including Management Information System	3.16			
Control/Containment of Non-communicable Diseases:						
	15	9 National Programme for Control of Blindness	448.00	464.79	445.00	86.00
16&17	10	National Cancer Control Programme and Anti-Tobacco Initiative	190.00	198.14	285.00	61.00
18&19	11	National Iodine Deficiency Disorders Control Programme and Pilot Project on Micronutrients	18.00	14.75	35.00	7.00
	20	12 National Mental Health Programme	28.00	20.39	190.00	30.00
	21	13 Drug De-addiction Programme including assistance to States	20.00	26.51	33.00	7.00
Other Programmes						
	22	14 UNDP Pilot Initiatives for Community Health		2.50	4.80	4.80
					4924.80	882.10
Central Sector Schemes:						
Control of Communicable Diseases:						
	1	1 National Institute of Communicable Diseases, Delhi (ongoing activities including Guineaworm & Yaws Eradication)	23.00	22.40	65.00	12.00
	2	Strengthening of Institute	3.70	3.69		
	3	2 National Institute of Tuberculosis, Bangalore	1.50	3.78	10.30	2.00
	4	3 Lala Ram Sarup Institute of T.B. and allied diseases, Mehrauli, Delhi	30.00	27.60	54.50	10.00
	5	4 Central Leprosy Training & Research Institute Chengalpattu (Tamil Nadu) Regional Institute of Training, Research & Treatment under Leprosy Control Programme:	5.00	3.57	5.50	1.00

Annexure 2.8.6 Contd.

Rs crores

IX Plan	X Plan	Name of the Schemes / Institution	9th Plan Allocation	9th Plan Anticipated Expenditure	10th Plan Allocation Agreed by PC	2002-03 Outlay
6	5	(a) R.L.T.R.I., Aska (Orissa)	2.00	0.56	2.00	0.40
7	6	(b) R.L.T.R.I., Raipur (M.P.)	2.50	0.71	1.00	0.20
8	7	(c) R.L.T.R.I., Gauripur (W.B.)	5.00	4.65	7.00	1.50
9	8	B.C.G. Vaccine Laboratory, Guindy, Chennai	5.00	5.80	19.50	5.00
10	9	Pasteur Institute of India, Coonoor	5.00	13.10	35.00	7.00
11	10	Central Research Institute, Kasauli	20.00	21.83	50.00	5.00
					249.80	44.10
Hospitals and Dispansaries:						
12	11	Central Government Health Scheme	40.00	47.66	80.00	20.00
13	12	Central Institute of Psychiatry, Ranchi	16.00	17.00	50.00	8.00
14&15	13	All India Institute of Speech & Hearing Mysore and Pilot Project	8.00	15.21	30.00	7.00
16&17	14	All India Institute of Physical Medicine & Rehabilitation, Mumbai and Pilot Project	15.00	6.71	20.00	2.70
18	15	Health Sector Disaster preparedness and Management	3.00	3.00	30.00	6.00
19	16	Safdarjung Hospital, New Delhi	103.00	96.36	230.00	65.00
20	17	Dr. R.M.L. Hospital, New Delhi	45.00	70.07	150.00	25.00
21	18	Institute for Human Behaviour & Allied Sciences, Shahdara, Delhi	10.00	3.00	7.00	1.00
					597.00	134.70
Medical Education, Training & Research:						
(a) Medical Education:						
22-25	19	All India Institute of Medical Sciences & Its Allied Departments, New Delhi and 3 Pilot Projects	340.00	382.47	675.00	105.00
26	20	P.G.I.M.E.R., Chandigarh	175.00	162.00	200.00	25.00
27	21	J.I.P.M.E.R., Pondicherry	70.00	52.05	150.00	15.00
28	22	Lady Harding Medical College & Smt. S.K. Hospital, New Delhi	65.00	30.59	200.00	10.00
29	23	Kalawati Saran Childrens Hospital, New Delhi	56.00	49.92	140.00	6.00
30	24	Indira Gandhi Institute of Health & Medical Sciences for North East Region at Shilong.	85.00	59.50	380.00	60.00
31	25	Kasturba Health Society, Wardha	25.00	38.28	50.00	10.00
32	26	V.P. Chest Institute, Delhi	5.00	11.28	23.00	8.00
33&34	27	All India Institute of Hygiene & Public Health, Calcutta and Pilot Project	15.00	6.82	20.00	3.00
35	28	Serologist & Chemical Examiner to the Government of India, Calcutta	1.25	1.23	2.50	0.50
36	29	National Medical Library, New Delhi	15.00	25.12	35.00	8.00
37	30	National Academy of Medical Sciences, New Delhi	1.60	1.55	2.50	0.50
38	31	National Board of Examinations, New Delhi	0.50	0.77	1.00	0.20
39	32	Medical Council of India, New Delhi	3.90	2.78	5.00	1.00
40	33	Education Commission of Health Sciences	2.00	0.00	10.00	5.00
41	34	N.I.M.H.A.N.S., Bangalore	60.00	80.40	120.00	24.00

IX Plan	X Plan	Name of the Schemes / Institution	9th Plan Allocation	9th Plan Anticipated Expenditure	10th Plan Allocation Agreed by PC	2002-03 Outlay
(b) Nursing Education:						
42	35	Indian Nursing Councils		0.50	2.10	0.40
43-47	36	Strengthening/adding seats to existing schools of Nursing	4.50	8.05	100.00	20.00
48	37	R.A.K. College of Nursing, New Delhi	3.50	1.53	11.00	3.00
49	38	Lady Reading Health School, New Delhi		0.25	2.00	0.30
(c) Research:						
50-55	39	Indian Council of Medical Research, New Delhi and 5 Pilot Projects	263.00	333.37	870.00	110.00
					2999.10	414.90
Other Programmes:						
56	40	National Institute of Biological, NOIDA (U.P.)	70.00	63.54	170.90	20.00
57	41	Health Education	6.00	3.97	12.60	2.20
58	42	Health Intelligence (& Health Accounts)	1.25	1.44	8.80	1.90
59	43	Port Health Authority (Including setting up of offices at 8 newly created international airport)	2.00	2.12	9.00	1.60
60	44	Strengthening of D.G.H.S.	3.99	7.87	8.00	2.00
61	45	Strengthening of (Deptt. under) Ministry			12.00	3.00
62	46	Prevention of Food Adulteration	20.00	12.63	83.00	8.00
63&64	47	Central Drug Standard & Control Orgn. and Medical Store Organisation	40.00	23.68	57.00	15.00
					361.30	53.70
NEW INITIATIVES DURING 10TH PLAN						
48	Centrally Sponsored Schemes				110.00	20.00
49	Central Sector Schemes:				11.00	0.50
					121.00	20.50
					9253.00	1550.00
SCHEMES THAT ARE EITHER TRANSFERRED OR DROPPED						
65	Rural Health Training Centre, Najafgarh		4.00	1.78		
66	Tejpur Mental Hospital					
67	Assistance to Voluntary Organisations					
	(a)	Improvement of Medical Services	10.00	1.08		
	(b)	Special Health Scheme for rural areas				
68	Continuing Education of Model Teachers		1.00	0.93		
69	Training of Medical Officers of C.H.S. Cadre		0.50	0.42		
Total			5118.19	5280.49		