Demography and Health

10.30 According to the Technical Group on Population Projections constituted by the National Commission on Population, May 2006, annual population growth is expected to gradually decelerate from 1.6 per cent in the five years ending in 2006 to 0.9 per cent in the five years ending in 2026 (Table 10.7). India's population, which is estimated to have gone up from the Census 2001 figure of 1029 million to 1112 million in 2006, is projected to increase to 1400 million by 2026.

10.31 The well-known 'demographic dividend' will manifest in the proportion of population in the working age group of 15-64 years increasing steadily from 62.9 per cent in 2006 to 68.4 per cent in 2026. The actual tapping of this demographic dividend will, however, depend a lot on ensuring proper healthcare and other human resource development such as education.

10.32 Healthcare is important not only for reaping the demographic dividend, having a

Table 10.7 : India : Population projections (in millions)

Year	2001	2006	2011	2016	2021	2026
Total	1,029	1,112	1,193	1,269	1,340	1,400
Below 15 years	365*(364)	357	347	340	337	327
15-64 years	619*(613)	699	780	851	908	957
Above 65 years	45*(49)	56	66	78	95	116

Notes: *Figures are as per smoothing of age-groups for working out population projections.

Figures in parenthesis are as per Census of India 2001. These figures will not tally with the total since 'age not stated' is excluded.

2001 figures exclude the population of Paomata, Mao-Maram and Purul sub-divisions of Senapati district of Manipur.

Source: Population Projections for India and States 2001-2026 – Census of India 2001: Report of the Technical Group on Population Projections constituted by the National Commission on Population, May 2006.

Table 10.8 : India — Selected health indicators

Sl. No.	Parameter	1951	1981	1991	Current level
1	Crude birth rate (CBR) (Per 1000 population)	40.8	33.9	29.5	23.8 (2005)
2	Crude death rate (CDR) (Per 1000 population)	25.1	12.5	9.8	7.6 (2005)
3	Total fertility rate (TFR) (Per woman)	6.0	4.5	3.6	2.9 (2005)
4	Maternal mortality ratio (MMR) (Per 100,000 live births)	NA	NA	437 (1992-93) NFHS	301 (2001-03)
5	Infant mortality rate (IMR) (Per 1000 live births)	146 (1951-61)	110	80	58 (2005)
6	Child (0-4) mortality rate (Per 1000 children)	57.3 (1972)	41.2	26.5	17.0 (2004)
7	Couple protection rate (per cent)	10.4 (1971)	22.8	44.1	48.2 (1998-99) NHFS
8	Life expectancy at birth				
	8.1 Male	37.2	54.1	59.7 (1991-95)	63.87 (2001-06)
	8.2 Female	36.2	54.7	60.9 (1991-95)	66.91 (2001-06)

Source : Office of Registrar General India; NFHS: National Family Health Survey; NA: Not Available.

healthy productive workforce and general welfare, but also for attaining the goal of population stabilization. Population stabilization is proposed to be achieved by addressing issues like child survival, safe motherhood and contraception. There has been some improvement in the quality of health care over the years (Table 10.8), but wide inter-State, male-female and rural-urban disparities in outcomes and impacts continue to persist. While population stabilization is in the Concurrent List, health is a State subject. The reproductive and child health services reach community and household levels through the primary health care infrastructure. Inadequacies in the existing health infrastructure have led to gaps in coverage and outreach services in rural areas. Empirical studies suggest that education, income and the overall quality of the State administration are often more important than specific public health interventions in explaining the differences in demographic and health indicators.

10.33 India's position on health parameters compared even to some of its neighbours continues to be unsatisfactory. India compares poorly not only with China and Sri Lanka, but also Bangladesh and Nepal with respect to some indicators (Table 10.9).

National Rural Health Mission (NRHM)

10.34 NRHM is the main vehicle for giving effect to the mandate of the NCMP. Operationalized throughout the country, its special focus is on 18 States with weaker health infrastructure and health status indicators. Provision of accessible, affordable, accountable, effective and reliable primary health care facilities especially to the poor and vulnerable sections of the population, bridging the gap in rural health care services through creation of a cadre of Accredited Social Health Activists (ASHA), improved hospital care, decentralized planning, ensuring population stabilization, intersectoral convergence and maintaining gender balance constitute the basic features of the NRHM.

10.35 The Mission envisaged selection of a trained female community health worker called ASHA in each village in the ratio of one per 1000 population in all 18 high-focus States and in tribal and under-served areas of other States. ASHA would reinforce community action for universal immunization, safe delivery, newborn care, prevention of water-borne and other communicable diseases, nutrition and sanitation. ASHAs would work in close coordination with the Anganwadi Workers (AWW). ASHAs would also provide immediate and easy access for the rural population to essential health supplies like Oral Rehydration Solution (ORS), contraceptives, a set of ten basic drugs, and a health communication kit developed for villages.

Strengthening of Primary Health Infrastructure & Improving Service delivery

10.36 Though there has been a steady increase in health care infrastructure available

Table 10.9 : Some health parameters: India and its Neighbours

Country	Life expectancy at birth (years)	Under-five mortality rate (per 1,000 live births)		Infant mortality rate (per 1,000 live births)		Maternal mortality ratio (per 100,000 live births)
	2000-05	1990	2004	1990	2004	2004
China	71	49	31	38	26	51
India	**63**	**123**	**85**	**80**	**62***	**540***
Nepal	61	145	76	100	59	740
Pakistan	63	128	101	96	80	530
Sri Lanka	74	23	14	19	12	92
Bangladesh	63	144	77	96	56	380
South Asia	63	126	84	84	62	NA

NA : Not available.

*** Figures shown for India are at variance with the official figures of the Office of Registrar General of India (RGI) for MMR and IMR. Data shown in the table are as per the methodology and adjustment made by UNDP.**

Source : UNDP, Human Development Report 2006.

Table 10.10 : Trends in health care infrastructure				
	1951	1991	2005	(Period/Source)
SC/PHC/CHC	725	57353	171608	*
Dispensaries and Hospitals (all)	9209	23555	27770	**
Beds (Private & Public)	117198	569495	914543	(all types)**
Nursing Personnel	18054	143887	865135	@
Doctors (Modern System)	61800	268700	656111	@

*** RHS: Rural Health Statistics, 2006.**
**** Health Information of India, 2004.**
@ National Health Profile, 2005.

over the plan period (Table 10.10) as per the Rural Health Infrastructure Bulletin 2006, there is a shortage of 19,269 Sub-Centres(SCs), 4,337 Primary Health Centres (PHCs) and 3,206 Community Health Centres (CHCs) as per 2001 population norm. Further, almost 50 per cent of the existing health infrastructure is in rented buildings. Last but not the least, poor upkeep and maintenance, and high absenteeism of manpower in rural areas, have eroded the credibility of the health delivery system in the public sector. NRHM seeks to strengthen the public health delivery system at all levels. All the facilities are also being provided untied funds to enable the local management committee to carry out locally relevant initiatives for better service delivery. Flexible, decentralized planning is the pivot on which the entire concept of the Mission revolves.

10.37 The NRHM seeks to strengthen service delivery by ensuring community ownership of the health facilities (Box 10.3). The success of decentralized planning process under NRHM hinges on the capacity of the districts and the States. The management capacity at the States, districts and blocks is being strengthened with the constitution of the Programme Management Units (PMUs) with professionals including MBAs, Chartered Accountants, and computer experts etc. These professionals have been assigned specific roles and a training component has been built in to make management effective.

10.38 The UNICEF evaluation conducted over 2006 has indicated that the coverage of immunization has improved from 52.8 per cent for full immunization in 2000-01 to 54.5 per cent during 2004-05. Janani Suraksha Yojana (JSY) has been launched all over the country to promote safe delivery, and incentives are being provided to BPL families for institutional delivery. During 2005-06, over 6 lakh beneficiaries of JSY were reported by the States and during 2006-07, till December 2006, 12 lakh beneficiaries have been reported under JSY by the States. Outlay on NRHM has gone up by 23 per cent from Rs.6,731 crore in 2005-06(RE) to Rs.11,505 crore in 2006-07(BE).

Reproductive and Child Health (RCH-II) Program

10.39 The Second phase of Reproductive and Child Health (RCH-II) Program, launched on April 1, 2005 for a period of 5 years, intends to improve the performance of family welfare in reducing maternal and infant morbidity and mortality, and unwanted pregnancies, and thus lead to population stabilization. Reoriented and revitalized to give a pro-poor focus, the programme is envisaged as an umbrella programme by integrating all the related and inter-linked stand alone schemes into a single composite programme. With a sector-wide approach to family welfare, it adopts a decentralized process by inviting each State/UT to prepare its own implementation plan on the basis of a situational analysis of ground realities and requirements. Funds approved for RCH II went up from Rs.1,523.75 crore to Rs.1,871.67 crore between 2005-06(RE) and 2006-07(BE).

Box 10.3 : Achievements of NRHM

- 3.19 lakhs ASHAs selected and in position after orientation in 18 high focus States and tribal areas of other States.
- 68,000 Sub-Centres have become functional
- 2045 CHCs identified to be upgraded to Indian Public Health Standards.
- Facility surveys completed in 1,452 CHCs.
- Integrated Management of Neo-natal Childhood Illness (IMNCI) started in 25 States.
- Over 1 lakh Health and Sanitation Committees constituted by States.
- 8,080 Rogi Kalyan Samitis set up at different facilities.
- 228 Mobile Medical Units operationalized by States.
- 22,655 doctors, Auxiliary Nurse Midwives (ANMs) and other para-medicos appointed on contract basis by the States.
- Comprehensive training plan developed in the critical areas of (i) skilled birth attendants, (ii) emergency obstetric care, (iii) no scalpel vasectomy, and (iv) anesthesia.
- Over 1000 management/accounting professionals (CA/MBA) appointed in States to support NRHM.
- Over 10 lakh monthly health and nutrition days being organized at Anganwadi Centres.
- Japanese Encephalitis (JE) vaccination completed in 11 districts of 4 States and 93 lakh children immunized.
- Evaluated immunization coverage reported at 54 per cent.
- Neo-natal tetanus eliminated from 7 States.
- 299 Mother NGOs appointed under partnership arrangements with NGO stakeholders.
- Mainstreaming of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy **(**AYUSH) in 1594 PHCs and 2315 AYUSH practitioners co-located in PHCs.
- National Health Resource Centre at central level finalized for manpower training. State and District Health Missions have been constituted in all States. To strengthen management capacities in the States, PMUs have been set up under NRHM and 392 districts have reported functioning PMUs

Universal Immunization Programme

10.40 Under this programme, vaccines are given to infants and pregnant women for controlling vaccine-preventable diseases, namely childhood Tuberculosis (BCG), Diphtheria, Pertussis and Tetanus (DPT), Measles, Poliomyelitis (OPV) and Neonatal Tetanus (NNT). The programme was first launched in the urban areas in 1985. The coverage was progressively extended to cover the entire country by 1990. Between 1988 and 2005, there has been a decline of 40 per cent in Diphtheria, 69 per cent in Pertussis, 66 per cent in Measles, 92 per cent in NNT and 99 per cent in Polio cases.

Pulse Polio Programme

10.41 An outbreak of Polio has been witnessed in the recent past with the spread of polio virus. During 2006, 666 cases have been reported. To respond to this, supplementary immunization activities have been intensified in the high risk areas.

National Vector Borne Disease Control Programme

10.42 The National Vector Borne Disease Control Programme (NVBDCP) is an umbrella programme for prevention and control of vector borne diseases and the objectives are in tandem with the goals set out in the NHP 2002 and Millennium Development Goals (MDGs). Annual incidence of malaria came down from 1.82 million cases reported with 963 deaths in 2005 to 1.2 million cases reported with 961 deaths in 2006(Provisional). In some pockets, where the parasite has developed resistance to widely used anti-malaria drug Chloroquine, Government has introduced a new drug combination of Aretemisinin plus Sulfadoxine-Pyremethamine for treating such cases.

Rapid Diagnostic Tests (RDTs) for quick detection of malaria cases are also being scaled up for use by trained health workers/ volunteers, especially in remote, inaccessible areas with inadequate microscopy facility. Use of insecticide treated bed nets is being promoted for personal protection besides use of insecticides for indoor residual spray in high risk areas for malaria control. Introduction of larvivorous fish in water collections are being actively encouraged for control of mosquito breeding. The success of these interventions depends on the community participation. Filariasis is a chronic debilitating disease associated with disfigurement and social stigma. To achieve the goal of elimination of Lymphatic Filariasis by year 2015, Government launched nationwide annual Mass Drug Administration (MDA) with annual single recommended dose of DEC tablets in addition to scaling up home-based foot care and hydrocele operations. In 2005, all 20 endemic States/UTs except Tamil Nadu implemented MDA covering around 500 million population.

10.43 Under Kala-azar, where the incidence of cases is fluctuating, timely and quality indoor residual spraying with DDT for vector control, complete treatment of patients and intensive social mobilization are being stressed upon. Japanese Encephalitis (JE) has been reported from many States in the country. Andhra Pradesh, Assam, Bihar, Haryana, Karnataka, Kerala, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal have recorded repeated occurrences and outbreaks. During 2005, there was an epidemic outbreak in Uttar Pradesh with total number of cases increasing to 6,727 and 1,682 deaths. In 2006, 2832 suspected cases of JE/viral encephalitis have been reported with 658 deaths. There is no specific treatment for JE.

10.44 Dengue is a viral disease where focal outbreaks were recorded mainly from urban areas. But, in recent years, dengue is increasingly being reported from semi-urban and rural areas, due to expanding urbanization and lifestyle changes. In 2005, 11,985 cases and 157 deaths and in 2006, 10,891 cases with 171 deaths have been reported. As there is no specific treatment for dengue, the emphasis is on avoidance of mosquito-breeding conditions in homes and workplaces, and minimizing the man-mosquito contact. Community awareness and participation, inter-sectoral collaboration and appropriate civil bye laws and building bye laws are crucial for effective control of dengue. *Chikungunya* is a debilitating non-fatal viral illness which reappeared after a long period in 2006. The reported number of Chikungunya suspected cases up to the end of 2006 is 1.39 million. There have been no reported deaths directly related to Chikungunya.

National Tuberculosis Control Programme

10.45 The Revised National TB Control Programme (RNTCP) using Directly Observed Treatment Short-course (DOTS) strategy is being implemented with the objective of covering at least 85 per cent of new sputum positive patients to be put on treatment and detection of at least 70 per cent of such patients. Under implementation since 1997, the entire country has been covered by March 2006. Till date, the RNTCP has placed more than 65 lakh patients on DOTS treatment, averting more than 11.78 lakh deaths. Overall performance of RNTCP is as per expectation with cure/treatment completion rate consistently above 85 per cent and death rate reduced to less than 5 per cent among registered TB patients.

National AIDS Control Programme

10.46 It is estimated that there were about 5.2 million HIV infections in the country in 2005 with sexual transmission as major mode of transmission. However, transmission through other routes like use of infected syringes and needles by Injecting Drug Users (IDUs), through infected blood and blood products and from mother to child do occur. Up to November, 2006, 1.6 lakh cases have been reported by the National AIDS Control Programme. The first phase of the project on AIDS was launched in 1992. Encouraged by the progress achieved, a second phase was formulated by the Government in 1999 with two key objectives (i) to reduce the spread of

HIV infection in India; and (ii) strengthen India's capacity to respond to HIV/AIDS on a long-term basis. These objectives are being achieved through prevention interventions among high risk groups and among the general population and by providing care and support services for people living with HIV and AIDS. The total outlay for Second Phase of the National AIDS Control Programme (NACP-II) was Rs.2,064.65 crore. The programme has five components viz. (i) priority targeted intervention for populations at high risk, (ii) preventive intervention for the general population, (iii) low-cost care for people living with HIV/AIDS, (iv) institutional strengthening, and (v) inter-sectoral collaboration.

National Leprosy Eradication Programme

10.47 The goal of elimination of Leprosy (less than 1/10,000 population) at the national level was achieved as scheduled in December, 2005 with 26 States/UTs achieving elimination in 2005 and Orissa in 2006-07. The programme has been decentralized in all the States. The prevalence rate has come down further to 0.85/10,000 population by May, 2006. Leprosy services have also been completely integrated with the general healthcare system and there is a fall in the annual case detection rate.

Control of Non-communicable Diseases

10.48 Non-communicable diseases continue to be important public health problems in India, being responsible for sizeable mortality and morbidity. Ageing population allows manifestation of cardiovascular diseases, cancer and mental disorders which also result in high prevalence of chronic disability. Research at ICMR focusing on identifying risk factors, their prevention, health services requirements and control strategies, is in progress. The National Programme for Control of Blindness has addressed very effectively cataract which continues be the major cause of blindness. Cataract surgery has registered an increase from 15 lakh in 1992-93 to 49.05 lakh in 2005-06. While cataract continues to be the major cause of blindness, other emerging causes that need to be addressed include diabetic retinopathy and glaucoma. Under the National Mental Health Programme, assistance has been provided to 58 medical colleges for upgradation of their psychiatric wings.

Integrated Disease Surveillance Project (IDSP)

10.49 Integrated Disease Surveillance Project (IDSP), initiated in November, 2004 with World Bank support, aims at establishment and operation of a central level disease surveillance unit, integration and strengthening of disease surveillance at State and district levels, improvement of laboratory support and training for disease surveillance and action. The diseases covered under the project include water-borne diseases and emerging diseases. Surveillance under IDSP includes water quality monitoring/ surveillance. The project has been expanded in phased manner to cover all the States/UTs of the country by March, 2007. It is a decentralized, action oriented, integrated and responsive programme.

User charges in government health facilities in India

10.50 In a developing country, private health care tends to be too expensive for the common citizen, especially the poor, while public health systems tend to suffer from inadequate resources and poor service delivery. Reforms of the public health system in a developing country often include the introduction of user charges to respond to the challenge of augmenting resources of and removing inefficiency in public health service delivery system. There have been successful attempts at introducing user charges in a majority of the States (Box 10.4).

10.51 User charges enhance the stake of the user, and improve accountability. Furthermore, such user charges often recover only a part of the cost of operation and maintenance of the health service delivery system, and continue to be only a fraction of the corresponding charges under private health care. Below poverty line users are normally exempt from payment of such

Box. 10.4 : User charges in the public health sector in India

- Reforms in health sector in India, initiated in early 1990s, included levying of user charges for services in public health facilities as one of the initiatives. User charges came to be levied from patients belonging to families above poverty line for diagnostic and curative services, while free or highly subsidized services continued to be provided to the poor and needy patients.
- States where user fees are being levied include Assam, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tripura, Uttar Pradesh, Uttaranchal and West Bengal. There are inter-State differences in the levy, collection and utilization of such charges.
- Some States like Haryana levy rates for various services in all public health institutions from Primary Health Centre upwards. In West Bengal, user charges apply only in secondary and tertiary level health facilities. In case of Madhya Pradesh and Kerala, the charges for various services are approved by Rogi Kalyan Samitis (RKS)/Hospital Development Committees at the facility level, and hence vary across institutions. In Orissa, lower rates are levied in less developed and tribal districts. Cost recovery ratio varies across States, but seldom exceeds a quarter.
- There is also variation in the nature of services for which user charges are levied. For example, in Orissa user charges is limited to accommodation, transportation and laboratory/diagnostic services, while in West Bengal, user charges are collected for diagnostic, curative services in both outpatient and inpatient departments, as well as ancillary services like diet. In most States, services for which user fees are charged include registration, diagnostic tests (pathological and radiological), bed charges, operation theatre charges amongst others. All States implementing user charges, exempt the poor, treatment under National Health Programmes and emergency cases.
- The funds collected by way of user charges are meant to be utilized for improving the quality of services in health facilities, such as maintenance of hospital buildings, improving the cleanliness & hygiene, minor repairs and construction works, maintenance and repair of equipment, purchase of medicines & consumables, and improving facilities for patients and attendants. Available literature on experiences of user charges in states indicate that user charges is definitely a means to raise resources to support the health care delivery system as well as improve the quality of health services and financial sustainability in health care system.

charges. “Free” public health care services often involve a lot of non-financial costs such as waiting time, lack of access and inadequate facilities such as hospital beds, equipment and medicines.

Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)

10.52 There are approximately 7.25 lakh registered practitioners, 3,194 hospitals and 21,290 AYUSH dispensaries all over the country. Mainstreaming of AYUSH in the health care delivery network is envisaged in the NRHM with focus on improvement and upgradation of standards of education, standardization of drugs and quality control, sustainable collection and cultivation of medicinal plants.

10.53 The Indian Medicine Central Council (Amendment) Act, 2005 and Homoeopathy Central Council (Amendment) Act, 2005 have been introduced in the Parliament with a view to bringing about transparency and accountability in the functioning of these Councils and to improve standards of graduate and postgraduate education in Ayurveda, Siddha, Unani and Homoeopathy. The Indian Medicine and Homoeopathy Pharmacy Bill, 2005 has also been introduced in Parliament to establish a Central Pharmacy Council for Indian Medicine and Homoeopathy to regulate and standardize pharmacy education. To address concerns relating to presence of heavy metals in Ayurveda, Siddha and Unani formulations, mandatory testing of heavy metals for Arsenic, Lead, Mercury and Cadmium in all purely herbal Ayurveda, Siddha and Unani drugs for export purposes has been introduced with effect from January 1, 2006 to ensure that, before these medicines are exported, the manufacturers and exporters take steps to ensure that these purely herbal medicines do not contain any heavy metal by way of contamination. From Rs. 293.71 crore during the Ninth Plan, with an expenditure of more than Rs. 1,000 crore, a quantum jump in outlays on schemes for development and promotion of AYUSH system of medicine has been achieved during Tenth Plan.