Twelfth Five Year Plan
(2012–2017)
Social Sectors

Volume III

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Volume III

Planning Commission
Government of India

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Health

20.1. Health should be viewed as not merely the absence of disease but as a state of complete physical, mental and social well-being. The determinants of good health are: access to various types of health services and an individual's lifestyle choices, personal, family and social relationships. The latter are outside the scope of this Chapter. The focus in this Chapter is on the strategy to deliver preventive, curative and public health services. Other sectors that impact on good health, such as clean drinking water and sanitation are dealt with in other Chapters of the Plan.

AN OVERVIEW

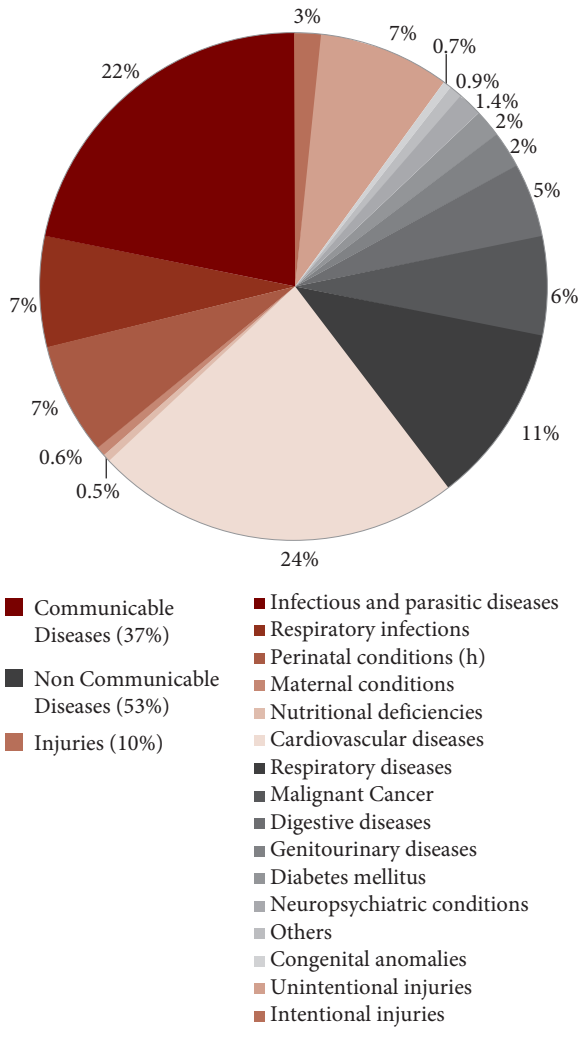
20.2. At present, India's health care system consists of a mix of public and private sector providers of health services. Networks of health care facilities at the primary, secondary and tertiary level, run mainly by State Governments, provide free or very low cost medical services. There is also an extensive private health care sector, covering the entire spectrum from individual doctors and their clinics, to general hospitals and super speciality hospitals.

20.3. The system suffers from the following weaknesses:

1. *Availability* of health care services from the public and private sectors taken together is quantitatively inadequate. This is starkly evident from the data on doctors or nurses per lakh of the population. At the start of the Eleventh Plan, the number of doctors per lakh of population was only 45, whereas, the desirable number is 85 per lakh population. Similarly, the number of Nurses and Auxiliary Nurse and Midwifes (ANMs) available was only 75 per lakh population whereas the desirable number is 225. The overall shortage is exacerbated by a wide geographical variation in availability across the country. Rural areas are especially poorly served.
2. *Quality* of healthcare services varies considerably in both the public and private sector. Many practitioners in the private sector are actually not qualified doctors. Regulatory standards for public and private hospitals are not adequately defined and, in any case, are ineffectively enforced.
3. *Affordability* of health care is a serious problem for the vast majority of the population, especially in tertiary care. The lack of extensive and adequately funded public health services pushes large numbers of people to incur heavy out of pocket expenditures on services purchased from the private sector. Out of pocket expenditures arise even in public sector hospitals, since lack of medicines means that patients have to buy them. This results in a very high financial burden on families in case of severe illness. A large fraction of the out of pocket expenditure arises from outpatient care and purchase of medicines, which are mostly not covered even by the existing insurance schemes. In any case, the percentage of population covered by health insurance is small.
4. The problems outlined above are likely to worsen in future. Health care costs are expected to rise because, with rising life expectancy, a larger proportion of our population will become vulnerable to chronic Non Communicable Diseases (NCDs), which typically require expensive

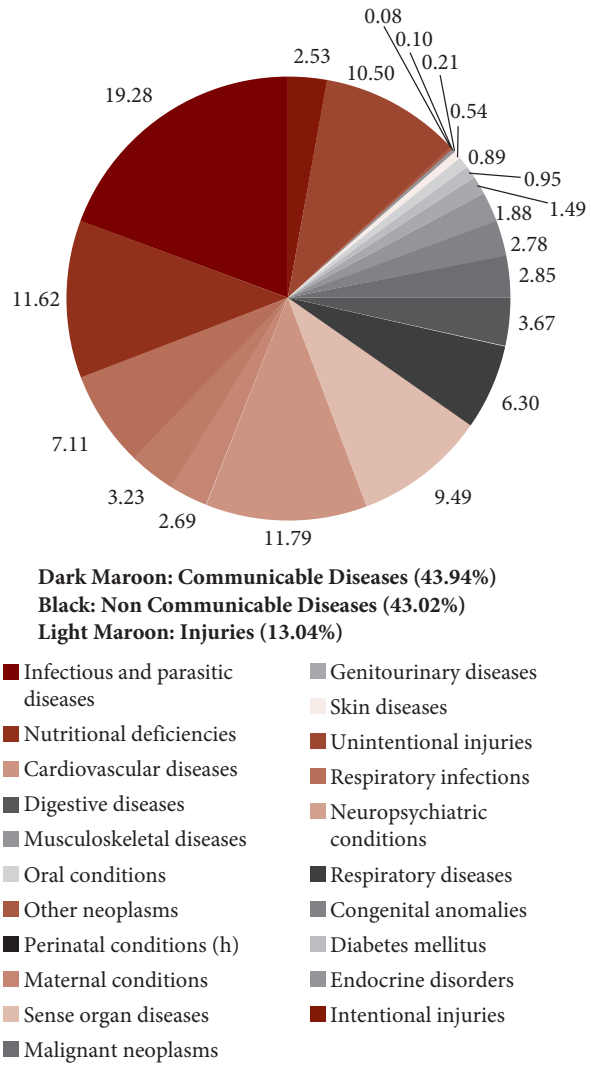
treatment. The public awareness of treatment possibilities is also increasing and which, in turn, increases the demand for medical care. In the years ahead, India will have to cope with health problems reflecting the dual burden of disease, that is, dealing with the rising cost of managing NCDs and injuries while still battling communicable diseases that still remain a major public health challenge, both in terms of mortality and disability (Figures 20.1 and 20.2).

5. The total expenditure on health care in India, taking both public, private and household out-of-pocket (OOP) expenditure was about 4.1 per cent of GDP in 2008–09 (National Health Accounts [NHA] 2009), which is broadly comparable to other developing countries, at similar



Source: Mortality and Burden of Disease Estimates for WHO Member States in 2008.

FIGURE 20.1: Disease Burden of India, 2008
(Estimated number of deaths by cause)



Source: Global Burden of Disease Estimates for WHO Member States 2009.

FIGURE 20.2: Disability Adjusted Life Years in India, 2009
(Estimated percentage of DALY by cause)

levels of per capita income. However, the public expenditure on health was only about 27 per cent of the total in 2008–09 (NHA, 2009), which is very low by any standard. Public expenditure on Core Health (both plan and non-plan and taking the Centre and States together) was about 0.93 per cent of GDP in 2007–08. It has increased to about 1.04 per cent during 2011–12. It needs to increase much more over the next decade.

20.4. The enormity of the challenge in health was realised when the Eleventh Plan was formulated and an effort was made to increase Central Plan expenditures on health. The increase in Central expenditures has not been fully matched by a comparable increase in State Government expenditures (Table 1.3). The Twelfth Plan proposes to take corrective action by incentivising States.

20.5. As an input into formulating the Twelfth Plan strategy, it has relied on the High Level Expert Group (HLEG) set up by the Planning Commission to define a comprehensive strategy for health for the Twelfth Five Year Plan. The Group's report is accessible on the web site of the Planning Commission. In addition, wide consultations have been held with stakeholders and through Working Groups and Steering Groups. Based on the HLEG report and after extensive consultations within and outside the Government, as well as a close review of the actual performance of the sector during the Eleventh Plan period, a new strategy for health is being spelt out in the Twelfth Plan towards rolling out Universal Health Coverage—a process that will span several years. The consensus among stakeholders is that the magnitude of the challenge is such that a viable and longer term architecture for health can be put in place only over two or even three Plan periods. However, a start must be made towards achieving the long term goal immediately.

REVIEW OF ELEVENTH PLAN PERFORMANCE

20.6. A review of the health outcome of the Eleventh Plan and of NRHM is constrained by lack of end-line data on most indicators. Analysis of available data reveals that though there has been progress, except on child-sex ratio, the goals have not been fully met. Despite Central efforts through the flagship of NRHM, wide disparity in attainments across states outlines the need for contextual strategies.

1. *Maternal Mortality Ratio (MMR)* which measures number of women of reproductive age (15–49 years) dying due to maternal causes per 100000 live births, is a sensitive indicator of the quality of the health care system. The decline in MMR during the 2004–06 to 2007–09 of 5.8 per cent per year (that is, 254 to 212) has been comparable to that in the preceding period (a fall of 5.5 per cent per year, over 2001–03 to 2004–06). MMR of 212 from 301 (2007–09) is well short of the Eleventh Plan goal of 100. Besides Kerala (81), two more States namely Tamil Nadu (97) and Maharashtra (104) have realised MDG target of 109 in 2007–09, while Andhra Pradesh (134), West Bengal (145), Gujarat (148) and Haryana (153) are in closer proximity. A major burden of MMR is in EAG states, where the average MMR was 308 in 2007–09 (SRS), and continues to remain high as per the recent Annual Health Survey (2010–11). These are Assam (381), Bihar (305), Jharkhand (278), MP (310), Chhattisgarh (275), Odisha (277), Rajasthan (331), Uttar Pradesh (345) and Uttarakhand (188). Suboptimal performance in EAG states points to gaps in Ante-Natal Care, skilled birth attendance and Emergency Obstetrical care and to draw lessons from maternal death reviews.
2. *Infant Mortality Rate (IMR)*, death of children before age one per 1000 live births, is a sensitive indicator of the health and nutritional status of population. IMR fell by 5 per cent per year over the 2006–11 period, an improvement over the 3 per cent decline per year in the preceding five years, but short of the target of 28. The decline in IMR has accelerated, but is short of the required pace. While seven states have achieved the target, IMR is still high in MP, Odisha, UP, Assam, and Rajasthan.
3. *Total Fertility Rate (TFR)*, which measures the number of children born to a woman during her entire reproductive period, fell by 2.8 per cent per annum over the 2006–10 period from 2.8 to

2.5, which is faster than the decline of 2 per cent per year in the preceding five years, but short of the Eleventh Plan goal of 2.1. Replacement level TFR, namely 2.1, has been attained by nine states. High fertility remains a problem in seven States, namely Bihar (CBR 2011 27.7; TFR 2010 3.7), Uttar Pradesh (27.8; 3.5), Madhya Pradesh (26.9; 3.2), Rajasthan (26.2; 3.1), Jharkhand (25.0; 3.0), Chhattisgarh (24.9; 2.8) and Assam (22.8; 2.5). Reasons are early marriage, close spacing of births, high unmet need and lack of skilled contraceptive services. Low couple protection rate (40.4 per cent) and a high unmet need for contraception (20.5 per cent) in 2007–08 point to gaps in service delivery.

4. On the goal of raising *child sex ratio*, there has been a reversal. All States and UTs except Punjab, Haryana, Himachal Pradesh, Gujarat, Tamil Nadu, Mizoram, Family Welfare Statistics in India (2011). Andaman and Nicobar Islands and Chandigarh have witnessed a decrease in the child sex ratio (0–6 years) in the 2001–11 decade.
5. Progress on goals on reducing *malnutrition* and *anaemia* cannot be assessed for want of updated data, but localised surveys indicated that the status has not improved.

FINANCING FOR HEALTH

20.7. During the Eleventh Plan funding for health by Central Government has increased to 2.5 times and of States to 2.14 times that in Tenth Plan, to add up to 1.04 per cent of GDP in 2011–12. When broader determinants of health (drinking water ICDS and Mid-Day Meal) are added, the total public spending on health in Eleventh Plan comes to 1.97 per cent of GDP (Tables 20.2 and 20.3).

20.8. An analysis of performance reveals achievements and gaps. These follow.

INFRASTRUCTURE

20.9. There has been an increase in number of public health facilities over the 2007–11 period—Sub-Centres by 2 per cent, PHC by 6 per cent, CHC by 16 per cent and District Hospitals by 45 per cent. Yet shortfalls remain, 20 per cent for Sub-Centres, 24 per cent for PHCs and 37 per cent for CHCs, particularly in Bihar, Jharkhand, Madhya Pradesh and Uttar Pradesh. Though most CHCs and 34 per cent Primary Health Centres (PHCs) have been upgraded and operationalised as 24 × 7 facilities and First Referral Units (FRU) have doubled, yet the commitment of Eleventh Plan to make all public facilities meet IPHS norms, and to provide Emergency Obstetric Care at all CHCs have not been achieved. Access to safe abortion services is not available in all CHCs, a gap which is contributing to maternal mortality. Though Mobile Medical Units (MMUs) have been deployed in 449 districts of the country, their outreach medical services are not adequate for the need.

TABLE 20.1
Eleventh Plan Monitorable Goals and Achievements

S. No.	Eleventh Plan Monitorable Target	Baseline Level	Recent Status
1	Reducing Maternal Mortality Ratio (MMR) to 100 per 100000 live births.	254 (SRS, 2004–06)	212 (SRS, 2007–09)
2	Reducing Infant Mortality Rate (IMR) to 28 per 1000 live births.	57 (SRS, 2006)	44 (SRS, 2011)
3	Reducing Total Fertility Rate (TFR) to 2.1.	2.8 (SRS, 2006)	2.5 (SRS, 2010)
4	Reducing malnutrition among children of age group 0–3 to half its level.	40.4 (NFHS, 2005–06)	No recent data available
5	Reducing anaemia among women and girls by 50%.	55.3 (NFHS, 2005–06)	No recent data available
6	Raising the sex ratio for age group 0–6 to 935	927 (Census, 2001)	914 (census, 2011)

TABLE 20.2
Allocation and Spending by Ministry of Health in Eleventh Plan

Department	Eleventh Plan Allocation	Eleventh Plan release	Eleventh Plan Expenditure	% Expenditure to Release
HFW	125923	87460	83407	95.4%
Of which under NRHM	89478	68064	66127	97.2%
AYUSH	3988	3083	2994	97.1%
DHR	4496	1938	1870	96.5%
AIDS Control	5728	1500	1305	87.0%
Total	**140135**	**93981**	**89576**	**95.3%**

Note: Outlay the new departments of DHR and AIDS Control was transferred from HFW.

TABLE 20.3
Funding for Health in Eleventh Plan: Core and Broad Health Components

Year	Centre Core Health	States Core Health	% GDP Core Health			% GDP (Total Health)		
			Centre	States	Total	Centre	States	Total
X Plan	47077	107046	0.29%	0.65%	0.94%	0.56%	1.18%	1.74%
2007–08	16055	30536	0.32%	0.61%	0.93%	0.71%	1.17%	1.89%
2008–09	19604	36346	0.35%	0.65%	0.99%	0.75%	1.22%	1.98%
2009–10	25652	44748	0.40%	0.69%	1.09%	0.78%	1.24%	2.02%
2010–11	27466	55955	0.36%	0.73%	1.09%	0.75%	1.27%	2.02%
2011–12	30587	62343	0.34%	0.70%	1.04%	0.74%	1.19%	1.94%
XI Plan	119364	229928	0.35%	0.68%	1.04%	0.75%	1.22%	1.97%

Note: Core health includes health care expenditure of central ministries (as Labour on RSBY) on health; Broad health includes Drinking Water and Sanitation, Mid-Day Meal and ICDS (Plan and non-Plan).

HEALTH PERSONNEL

20.10. ASHAs positioned under NRHM have been successful in promoting awareness of obstetric and child care services in the community. Better training for ASHA and timely payment of incentive have come out as gaps in evaluations. Despite considerable improvement in health personnel in position (ANM 27 per cent, nurses 119 per cent, doctors 16 per cent, specialists 36 per cent, pharmacists 38 per cent), gap between staff in position and staff required at the end of the Plan was 52 per cent for ANM and nurses, 76 per cent for doctors, 88 per cent for specialists and 58 per cent for pharmacists. These shortages are attributed to delays in recruitment and to postings not being based on work-load or sanctions. Public health cadre as envisioned in the Eleventh Plan to manage NRHM is not yet in place. Similarly, lack of sound HR management policies results in irrational distribution of available human resource and sub-optimal motivation.

TRAINING CAPACITY

20.11. Setting up of 6 AIIMS like institutes and up-gradation of 13 medical colleges has been taken up under Pradhan Mantri Swasthya Suraksha Yojana (PMSSY). Seventy-two State Government medical colleges have been taken up for strengthening to enhance their capacity for PG training. Huge gaps, however, remain in training capacity for all category of health personnel.

COMMUNITY INVOLVEMENT

20.12. Though Rogi Kalyan Samitis (RKS) are in position in most public facilities, monthly Village

Health and Nutrition Days are held in most villages, Jan Sunwais (public hearings) and Common Review Missions have been held yet, their potential in terms of empowering communities, improving accountability and responsiveness of public health facilities is yet to be fully realised.

SERVICE DELIVERY

1. To reduce maternal and infant mortality, institutional deliveries are being promoted by providing cash assistance to pregnant women under Janani Suraksha Yojana (JSY). Though institutional deliveries have increased in rural (39.7 to 68 per cent) and urban areas (79 per cent to 85 per cent) over the 2005–09 period, low levels of full Ante-Natal care (22.8 in rural, and 26.1 in urban in 2009, CES) and quality of care areas of concern.
2. Full immunisation in children has improved from 54.5 per cent in 2005 (CES) to 61 per cent in 2009 (CES) during the Eleventh Plan. Additions to the Universal Immunization Program include Hepatitis B, Japanese Encephalitis (JE) vaccine in endemic districts, and Pentavalent vaccine, which is a combination vaccine against Diphtheria, Pertussis, Tetanus, Hepatitis B and Haemophilus influenza B. There has been no reported case of polio during 2011. Immunisation cover is far from universal as envisioned in Eleventh Plan, and remains particularly low in UP (41 per cent), MP (43 per cent), Bihar (49 per cent), Rajasthan (54 per cent), Gujarat (57 per cent) and Chhattisgarh (57 per cent), Assam (59 per cent) and Jharkhand (60 per cent). In contrast, some States like Goa (88 per cent), Sikkim (85 per cent), Punjab (84 per cent) and Kerala (82 per cent) have achieved high level of immunisation coverage. Home Based Neonatal Care (HBNC) through ASHAs has been promoted to improve new born care practices in the community and to enable early detection and referral. Continued high rates of child mortality suggest that the public health system has not been very effective in promoting healthy practices as breastfeeding, use of ORS and preventive and care seeking behaviours.
3. Despite improvements in infrastructure, and personnel deployed, evaluation has reported that utilisation of public facilities for chronic disease remains low in UP (45 per cent), MP (63 per cent) and Jharkhand (70 per cent) as compared to Tamil Nadu (94 per cent) reflecting poor quality of service.
4. To reduce fertility, increasing age of marriage, spacing of births, access to a basket of contraceptive services are some of the possible innovations that need to be tried.
5. The Eleventh Plan commitment of providing access to essential drugs at public facilities has not been realised. This reflects in continued high out-of-pocket expenditure on health care, as suggested by some local surveys.

GOVERNANCE OF PUBLIC HEALTH SYSTEM

20.13. The *Eleventh Plan* had suggested *Governance* reforms in public health system, such as performance linked incentives, devolution of powers and functions to local health care institutions and making them responsible for the health of the people living in a defined geographical area. NRHM's strategy of decentralisation, PRI involvement, integration of vertical programmes, inter-sectoral convergence and Health Systems Strengthening have been partially achieved. Despite efforts, lack of capacity and adequate flexibility in programmes forestall effective local level planning and execution based on local disease priorities. Professional procurement agencies on the lines of Tamil Nadu are still not in place at the Centre and most States making the process fragmented, with little forecasting or use of the power of monopsony. Wide variation in the performance of health facilities across states have been reported with Tamil Nadu topping and UP and MP at the bottom, pointing to the need for learning from best practices within the country through state level initiatives.

DISEASE CONTROL PROGRAMMES

1. National Vector Borne Disease Control Programme encourages states to take measures, as disease management, integrated vector management and supportive interventions like behaviour change communication, for the prevention and control of diseases like Malaria, Dengue, Chikungunya, Japanese Encephalitis (JE), Lymphatic Filariasis and Kala-azar. India bears

a high proportion of the global burden of TB (21 per cent), leprosy (56 per cent) and lymphatic filariasis (40 per cent). Though there has been progress in the Eleventh Plan in reducing rate of new infections, case load and death from these diseases, a robust surveillance system at the community level is lacking and considerable hidden and residual disease burden remains. Multi-drug resistance to TB is being increasingly recognised. Gaps in infectious disease control programmes relate to testing services in all PHCs, active engagement with private providers, prescribing standard treatment, restricting over-the-counter sale of anti TB drugs, and timely referral through a continuum of care.

2. Among the NCDs, Cardiovascular Diseases (CVD) account for 24 per cent of mortality followed by Respiratory Disease, and malignant cancers. During the Eleventh Five Year Plan National Programme for the Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) was initiated in 100 selected districts in 21 states. So far, 87 lakh people have been screened for diabetes and hypertension, out of which 6.5 per cent are suspected to be diabetic and 7.7 per cent are suspected to be suffering from hypertension. Despite enhanced allocations for the National Mental Health Programme, it has lagged behind due to non-availability of qualified mental health professionals at district and sub-district levels. Training of non-physician mental health professionals and implementation of community based mental health programmes are needed to reduce the rising burden of mental health disorders. NCD programmes need to be integrated within NRHM to provide preventive, testing care and referral services.

REGULATION

20.14. The Food Safety and Standards Act (FSSA), 2006 came into force from 5.8.2011 and replaced multiple food laws, standard setting bodies and enforcement agencies with one integrated food law. The Government of India has enacted the Clinical Establishments (Registration and Regulation) Act, 2010 for Registration and Regulation of Clinical Establishments. The Government of India has notified important amendments in rules under the Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994, including amendment to Rule 11 (2) of the PC and PNDT Rules, 1996 to provide for confiscation of unregistered machines and regulating the use of portable ultrasound equipment and services offered by mobile clinics. The Transplantation of Human Organs Act, 1994 has been amended to make the process of organ donation and reception more streamlined and malpractice free. Quality and reach of regulation are major issues.

HMIS

20.15. During the Eleventh Plan, a web based Health Management Information System (HMIS) application software has been developed and made operational for online data capture at district and sub-district levels on RCH service delivery indicators. The data captured is scanty, restricted to public facilities and is not always used for programme planning or monitoring.

AIDS CONTROL

20.16. Against a target to halt and reverse the HIV/AIDS epidemic in India, there has been a reduction of new HIV infections in the country by 56 per cent. Still, an estimated 24 lakh People were living with HIV/AIDS (PLHA) in 2009. The programme includes Targeted Interventions focused on High Risk Groups and Bridge populations, Link Workers Scheme, Integrated Counselling and Testing Services, Community Care, Support and Treatment Centres, Information, Education, and Communication (IEC) and condom promotion. Gaps in the programme include low rate of coverage of Anti-Retroviral Therapy among infected adults and children, low levels of opioid substitution therapy among injection drug users (3 per cent), testing of pregnant women for HIV and Syphilis (23 per cent) and low Anti-Retroviral coverage for preventing mother to child transmission. There is scope for greater integration with NRHM to avoid duplication of efforts, as in reaching non-high risk groups and distribution of condoms.

INDIAN SYSTEMS OF MEDICINE AND HOMOEOPATHY (AYUSH)

20.17. Against the Eleventh Plan objective of 'mainstreaming AYUSH systems to actively supplement the efforts of the allopathic system', 40 per cent PHCs, 65 per cent CHCs and 69 per cent District hospitals have co-located AYUSH facilities. Though considerable progress has been made in documenting identity and quality standards of herbal medicines, scientific validation of AYUSH principles, remedies and therapies has not progressed. Similarly, though the National Medicinal Plants Board has supported many projects for conservation, cultivation and storage of medicinal plants, only 20 per cent of the 178 major medicinal plant species traded as raw drugs are largely sourced from cultivation. Nine AYUSH industry clusters through Special Purpose Vehicle having common facility centres for manufacture and testing of AYUSH medicines are being set up in eight States. While AYUSH sector has considerable infrastructure, it remains under-utilised.

HEALTH RESEARCH

20.18. The newly established department of Health Research, and Indian Council of Medical Research (ICMR) have piloted several innovations, including an on-line Clinical Trials Registry, Uniform Multidrug Therapy Regimen (UMDT) for Leprosy, and lymphatic filariasis, kits for improved diagnosis of malaria, dengue fever, TB (including drug resistant), cholera, Chlamydia infection. Leptospirosis; and development of indigenous H1N1 vaccine. Yet, health research in India has yet to make a major impact on the health challenges facing the country. The reasons are that ICMR has focused on biomedical research, especially in communicable diseases, while gaps in health attainments are largely due to behavioural factors, inadequate attention to prevention and fragile health systems.

TWELFTH PLAN STRATEGY

20.19. The Twelfth Plan seeks to strengthen initiatives taken in the Eleventh Plan to expand the reach of health care and work towards the long term objective of establishing a system of Universal Health Coverage (UHC) in the country. This means that each individual would have assured access to a defined essential range of medicines and treatment at an affordable price, which should be entirely free for a large percentage of the population. Inevitably, the list of assured services will have to be limited by budgetary constraints. But the objective should be to expand coverage steadily over time.

20.20. Based on the recommendations of the HLEG and other stakeholder consultations, it is possible to outline the key elements of the strategy that should be followed in the Twelfth Plan. These elements should be seen as a part of a longer term plan to move towards UHC, which is a process that will unfold over two or three Plan periods.

1. There must be substantial expansion and strengthening of the public sector health care system if we are to meet the health needs of rural and even urban areas. The bulk of the population today relies upon private sector health providers, paying amounts which they cannot afford, because of the inadequate reach of the public sector. While the private sector can continue to operate for those who can afford it, an expansion of good quality affordable public sector care is essential. As supply in the public sector increases, it will cause a shift towards public sector providers freeing the vulnerable population from dependence on high cost and often unreachable private sector health care.
2. Health sector expenditure by the Centre and States, both Plan and Non Plan, will have to be substantially increased by the end of the Twelfth Plan. It has already increased from 0.94 per cent of GDP in the Tenth Plan to 1.04 per cent in the Eleventh Plan (Table 1.3). The provision of clean drinking water and sanitation as one of the principal factors in the control of diseases is well established from the history of industrialised countries and it should have high priority in health related resource allocation. The percentage for this broader definition of health sector related resources needs to be increased to 2.5 per cent by the end of the Twelfth Plan. Since expenditure on health by the State Governments is about twice the expenditures by the Centre,

the overall targets for public sector health expenditure can only be achieved if, along with the Centre, State Governments expand their health budgets appropriately. A suitable mechanism should therefore be designed to incentivise an increase in State Government spending.

3. Financial and managerial systems will be redesigned to ensure more efficient utilisation of available resources, and to achieve better health outcomes. Coordinated delivery of services within and across sectors, delegation matched with accountability, fostering a spirit of innovation are some of the measures proposed to ensure that 'more can be done from less for more' for better health outcomes.
4. Efforts would be made to find a workable way of encouraging cooperation between the public and private sector in achieving health goals. This would include contracting in of services for gap filling, and also various forms of effectively regulated and managed PPP, while also ensuring that there is no compromise in terms of standards of delivery and that the incentive structure does not undermine health care objectives.
5. The present Rashtriya Swasthya Bima Yojana (RSBY) which provides 'cash less' in-patient treatment for eligible beneficiaries through an insurance based system will need to be reformed to enable access to a continuum of comprehensive primary, secondary and tertiary care. The coverage of RSBY was initially limited to the BPL population but, was subsequently expanded to cover other categories. It should be the objective of the Twelfth Plan to use the platform and existing mechanisms of RSBY to cover to the entire population below the poverty line. In planning health care structures for the future, it is desirable to move away from a 'fee-for-service' mechanism for the reasons outlined by the HLEG, to address the issue of fragmentation of services that works to the detriment of preventive and primary care and also to reduce the scope for fraud and induced demand.
6. Availability of skilled human resources remains a key constraint in expanding health service delivery. A mere expansion of financial resources devoted to health will not deliver results if health personnel are not available. A large expansion of medical schools, nursing colleges, and so on, is therefore necessary and public sector medical schools must play a major role in the process. Since the present distribution of such colleges is geographically very uneven, a special effort will be made to expand medical education in States which are at present under-served. In addition, a massive effort will be made to recruit and train paramedical and community level health workers.
7. An important lesson from the Eleventh Plan is that the multiplicity of Central Sector and Centrally Sponsored Schemes addressing individual diseases, or funding activities or institutions, prevents a holistic health-systems-approach, leads to duplication and redundancies, and makes coordinated delivery difficult. This multiplicity also constrains the flexibility of States to make need based plans or deploy their resources in the most efficient manner. As a result, new programmes cannot take off and old ones do not reach their maximum potential. The way forward is to focus on strengthening the pillars of the health system, so that it can prevent, detect and manage each of the unique challenges that different parts of the country face.
8. A series of prescription drugs reforms, promotion of essential, generic medicines, and making these universally available free of cost to all patients in public facilities as a part of the Essential Health Package will be a priority.
9. Effective regulation in medical practice, public health, food and drugs is essential to safeguard people against risks, and unethical practices. This is especially so given the information gaps in the health sector which make is difficult for individuals to make reasoned choices.
10. The health system in the Twelfth Plan will continue to have a mix of public and private service providers. The public sector health services need to be strengthened to deliver both public health related and clinical services. The public and private sectors also need to coordinate for delivery of a continuum of care. A strong regulatory

system would supervise the quality of services delivered. Standard treatment guidelines should form the basis of clinical care across public and private sectors, with adequate monitoring by the regulatory bodies to improve the quality of care and control the cost of care.

INCLUSIVE AGENDA FOR HEALTH

20.21. In order to ensure that all the services in the Twelfth Plan are provided with special attention to the needs of marginalised sections of the population the following will be emphasised in the Twelfth Plan.

20.22. *Access to services*: Barriers to access would be recognised and overcome especially for the disadvantaged and people located far from facilities. Medical and public health facilities would be accessible to the differently-abled. They would be gender sensitive and child friendly. Information on health would be accessible to the visually impaired and to all caregivers; especially to those who look after autistic and mentally challenged persons. Hospitals would have facilities for the hearing impaired. Among marginalised groups, the SC and ST populations, and minorities, the doubly disadvantaged such as the Particularly Vulnerable Tribal Groups (PVTGs), the De-notified and Nomadic Tribes, the Musahars and the internally displaced must be given special attention while making provisions for, setting up and renovating Sub-Centres and Anganwadis.

20.23. *Special services*: Special services should be made available for the vulnerable and disadvantaged groups. For example, counselling of victims of mental trauma in areas of conflict, or the supply and fitting of aids for the differently-abled are some examples of special services for certain categories of users. As there are other segments of the population which are also vulnerable, the list should be open-ended.

20.24. *Monitoring and evaluation systems*: Routine monitoring and concurrent impact evaluations should collect disaggregated information on disadvantaged segments of the population. This is to assess the ease with which they access services and their impact, as also to understand how they compare to the general population.

20.25. *Representation in community fora*: Wherever community-level fora exist or are being planned for, such as Rogi Kalyan Samitis, VHSNC, representation of the marginalised should be mandatory. Also, every Village Health Sanitation and Nutrition Committee would strive to have 50 per cent representation of women.

20.26. *Training of health and rehabilitation professionals* should incorporate knowledge of disability rights, as also the skills to deal with differences in perspectives and expectations between members of disadvantaged segments and the general population that may arise out of different experiences. All health related training institutes must have a comprehensive policy to make their educational programmes friendly for the differently-abled. This should also include sensitisation of faculty, staff and trainees.

TOWARDS UNIVERSAL HEALTH COVERAGE

20.27. The Twelfth Plan strategy outlined is a first step in moving toward Universal Health Care (UHC). All over the world, the provision of some form of universal health coverage is regarded as a basic component of social security. There are different ways of achieving this objective and country experiences vary. We need to ensure much broader coverage of health services to provide essential health care and we need to do it through a system which is appropriate to our needs and within our financial capability.

HLEG'S RECOMMENDATIONS

20.28. The High Level Expert Group has defined UHC as follows: 'Ensuring equitable access for all Indian citizens in any part of the country, regardless of income level, social status, gender, caste or religion, to affordable, accountable and appropriate, assured quality health services (promotive, preventive, curative and rehabilitative) as well as services addressing wider determinants of health delivered to individuals and populations, with the Government being the guarantor and enabler, although not necessarily the only provider of health and related services.'

20.29. This definition affirms that the system must be available for all who want it, though some, typically

the upper income groups, may opt out. For operational purposes, it is necessary to define with greater precision, the coverage of assured services, especially in terms of entitlement for in-patient treatment and to define the specific mechanism through which the service will be delivered. The extent of the coverage offered in terms of the range of treatments covered will obviously be constrained by finances available, though it can be expected to expand over time. The HLEG has recommended the prioritisation of primary health care, while ensuring that the Essential Health Package (EHP) includes essential services at all levels of care.

20.30. The HLEG has examined different ways in which UHC could be delivered without any cash payment by the beneficiaries. At one end, we can have a purely public delivery of services from public sector service providers using private sector only to supplement critical gaps, and whose costs are covered by budgetary funds. At the other end, we can have a system where defined services are delivered by service providers charging a fee for service, with payment to the providers being made by State funded medical insurance, with no payment to be made by the patient. The HLEG has also recommended: 'State governments should consider experimenting with arrangements where the state and district purchase care from an integrated network of combined primary, secondary and tertiary care providers. These provider networks should be regulated by the government so that they meet the rules and requirements for delivering cost effective, accountable and quality health care. Such an integrated provider entity should receive funds to achieve negotiated predetermined health outcomes for the population being covered. This entity would bear financial risks and rewards and be required to deliver on health care and wellness objectives. Ideally, the strengthened District Hospital should be the leader of this provider network' (Recommendation 3.1.10).

20.31. The main recommendations of the HLEG are outlined in Box 20.1.

UHC MODELS AROUND THE WORLD

20.32. While many countries subscribe to the objective of UHC there is a great deal of variety in how this objective is achieved. Many countries have adopted a tax-financed model, while others have adopted an insurance based model. Some countries deliver care through salaried public providers; others have adopted capitation as the preferred model for payment for out-patient care, and fee-for-service for in-patient care. A summary of the UHC models in some countries follows.

Canada

20.33. *Medicare* is a regionally administered universal public insurance programme, publicly financed through Federal and Provincial tax revenue. Outpatient services are provided through private providers. All Secondary and Tertiary care services are provided by private and non-profit providers. Primary care payment is mostly 'Fee for Service' with some alternatives (for example, capitation). In-patient service payment is through global budget (case-based payment in some provinces) which does not include physician's cost.

New Zealand

20.34. *National Health Service* is publicly financed through general tax revenue. Outpatient services are provided through private providers. Secondary and Tertiary care services are mostly provided by public, some private providers. Primary care payment is a mix of 'Capitation' and 'Fee for Service'. In-patient service payment is through global budget and case-based payment, which includes physician's cost.

Germany

20.35. *Statutory Health Insurance* is funded by 180 'sickness funds'. Outpatient services are provided through private providers. Secondary and Tertiary care services are provided by public (50 per cent), private non-profit (33 per cent) and private for-profit (17 per cent) providers. Primary care payment is 'Fee for Service'. In-patient service payment is through global budget and case-based payment, which includes physician's cost.

Box 20.1
Recommendations of High Level Expert Group on Universal Health Coverage

1. *Health Financing and Financial Protection*: Government should increase public expenditure on health from the current level of 1.2 per cent of GDP to at least 2.5 per cent by the end of the Twelfth Plan, and to at least 3 per cent of GDP by 2022. General taxation should be used as the principal source of healthcare financing, not levying sector specific taxes. Specific purpose transfers should be introduced to equalise the levels of per capita public spending on health across different states. Expenditures on primary healthcare should account for at least 70 per cent of all healthcare expenditure. The technical and other capacities developed by the Ministry of Labour for the RSBY should be leveraged as the core of UHC operations—and transferred to the Ministry of Health and Family Welfare.
2. *Access to Medicines, Vaccines and Technology*: Price controls and price regulation, especially on essential drugs, should be enforced. The Essential Drugs List should be revised and expanded, and rational use of drugs ensured. Public sector should be strengthened to protect the capacity of domestic drug and vaccines industry to meet national needs. Safeguards provided by Indian patents law and the TRIPS Agreement against the country's ability to produce essential drugs should be protected. MoHFW should be empowered to strengthen the drug regulatory system.
3. *Human Resources for Health*: Institutes of Family Welfare should be strengthened and Regional Faculty Development Centres should be selectively developed to enhance the availability of adequately trained faculty and faculty-sharing across institutions. District Health Knowledge Institutes, a dedicated training system for Community Health Workers, State Health Science Universities and a National Council for Human Resources in Health (NCHRH) should be established.
4. *Health Service Norms*: A National Health Package should be developed that offers, as part of the entitlement of every citizen, essential health services at different levels of the healthcare delivery system. There should be equitable access to health facilities in urban areas by rationalising services and focusing particularly on the health needs of the urban poor.
5. *Management and Institutional Reforms*: All India and State level Public Health Service Cadres and a specialised State level Health Systems Management Cadre should be introduced in order to give greater attention to Public Health and also to strengthen the management of the UHC system. The establishment of a National Health Regulatory and Development Authority (NHRDA) a, National Drug Regulatory and Development Authority (NDRDA) and a, National Health Promotion and Protection Trust (NHPPT) is also recommended.
6. *Community Participation and Citizen Engagement*: Existing Village Health Committees should be transformed into participatory Health Councils.
7. *Gender and Health*: There is a need to improve access to health services for women, girls and other vulnerable genders (going beyond maternal and child health).

England

20.36. *National Health Service* is publicly financed through general tax revenue. Outpatient services are provided through both public and private providers. Secondary and Tertiary care services are mostly provided by public, some private providers. Primary care payment is mostly a mix of capitation and pay for performance for private providers, and salaries for public providers. In-patient service payment is through global budget and case-based payment, which includes physician's cost.

Thailand

20.37. *Universal Health Coverage Scheme* is financed through general tax revenues paid to local contracting units on the basis of population size. Outpatient services are provided through both public and private providers. Secondary and Tertiary care services are provided by public and private providers. Primary care payment is by risk-adjusted capitation. In-patient service payment is through Diagnostic Related Group (DRG) based capped global budget, and fixed rate fees for some services.

Sri Lanka

20.38. *Universal Health Coverage Scheme* is tax-financed and Government operated. Outpatient services are provided through public providers. Secondary and Tertiary care services are provided by both public and private providers. Primary care payment is by Fee for Service. In-patient service payment is through Fee for Service for Public Hospital and Capitation for Private Hospitals.

Mexico

20.39. *Seguro Popular Insurance Scheme* is financed through Federal and State general tax revenues and member's contributions through premiums from informal sector, and progressive contribution from enrolled families. Outpatient services are provided through both public and limited contracting in of private providers. Secondary and Tertiary care services are usually provided by private providers. Primary care payment is a mix of 'Capitation' and 'Fee for Service'. In-patient service payment is through DRG although such payments take place on an ad-hoc, non-systematic basis.

20.40. The evidence from countries that have attempted to move towards UHC points to the critical importance of initial conditions in terms of both what is necessary and what is feasible, in attempting to meet the objectives of improving coverage, expanding access, controlling cost, raising quality, and strengthening accountability.

20.41. In our system, the initial conditions include a large but severely underfunded public sector, a growing but high cost private sector, with serious issues of inadequate quality and coverage in both, and an ineffective regulation.

20.42. In moving forward, there are two key questions:

1. How to combine public and private providers effectively for meeting UHC goals in a manner that avoids perverse incentives, reduces provider induced demand, and that meets the key objectives specified above?
2. How to integrate different types and levels of services—public health and clinical; preventive and promotive interventions along with primary, secondary, and tertiary clinical care—so that continuum of care is assured? Inadequate prevention and inappropriate utilisation of secondary or tertiary care, when primary care should suffice, would result in much higher cost of care.

20.43. Global evidence from different countries' experiences gives us some pointers to answering these questions:

1. A mix of public and private services is the reality of most countries. In order to make this mix work, a strong regulatory framework is essential to ensure that the UHC programme is most effective in controlling cost, reducing provider-induced demand, and ensuring quality.
2. Provider payment mechanisms, in themselves, are not magic bullets, and there are limits to what they can do. Capitation-based networks can reduce disincentives to continuity of care, but by themselves, they will not guarantee it. For this, there have to be, in addition, improvements in service delivery, improvements in human resources and related regulatory development and enforcement.
3. Further, there is a need to build up institutions of citizens' participation, in order to strengthen accountability and complement what the regulatory architecture seeks to do.

20.44. It must be noted that even developed countries have taken decades to evolve networks that can implement alternative models of UHC. Many countries are opting for 'coordinated care' models where primary, secondary and tertiary care is delivered as an integrated framework with the participation of both public and private sector. The need is first to strengthen our public health infrastructure at all levels. It could be supplemented by private service providers as well as Public Private Partnerships (PPPs). Our endeavour, in the long run, is to move towards an organised system of UHC. We should also learn from the service contracting arrangements initiated through RSBY and other State level initiatives.

20.45. In order to achieve health goals UHC must build on universal access to services that are determinants of health, such as safe drinking water and sanitation, wholesome nutrition, basic education, safe housing and hygienic environment. To aim at achieving UHC without ensuring access to the determinants of health would be a strategic mistake, and plainly unworkable. Therefore, it may be necessary to realise the goal of UHC in two parallel steps: the first, would be clinical services at different levels, defined in an Essential Health Package (EHP), which the Government would finance and ensure provision

through the public health system, supplemented by contracted-in private providers whenever required to fill in critical gaps; second the universal provision of high impact, preventive and public health interventions which the Government would universally provide within the Twelfth Five Year plan (Box 20.2). The UHC would take two plan periods for realisation, but a move in terms of pilots and incremental coverage can begin in the Twelfth Plan itself.

20.46. *Roadmap*: The present health care delivery system needs reform to ensure better utilisation of resources and health outcomes. The building blocks of the reform in the Twelfth Plan would be as follows. Health Services will be delivered with seamless integration between Primary, Secondary and Tertiary sectors. The Primary Health Care will be strengthened to deliver both preventive, public health and curative, clinical services. Publicly funded health care would predominantly be delivered by public providers. The primary health care providers within the network will act as the gateway to secondary and tertiary care facilities in the network. Private sector will be contracted in only for critical gap filling. In areas where both public and private contracted in providers co-exist, patients shall have a choice in selecting their provider. Networks of such integrated facilities at different levels will be encouraged to provide a continuum of care, universally accessible and affordable services with the District Hospital as the nodal point. No fee of any kind would be levied on primary health care services with the primary source of financing being from general taxation/public exchequer. Details of the roadmap shall be worked out by the States through UHC pilots after considering global experience and current local structures.

20.47. *UHC Models*: Various options for financing and organisation of delivery of services need to be carefully explored. Cashless delivery of an Essential Health Package (EHP) to all ought to be the basic deliverable in all models. Since out-patient care and medicines are major elements of household's out-of-pocket and catastrophic expenditure on health,

Box 20.2
Illustrative List of Preventive and Public Health Interventions Funded and Provided by Government

1. Full Immunisation among children under three years of age, and pregnant women
2. Full antenatal, natal and post natal care
3. Skilled birth attendance with a facility for meeting need for emergency obstetric care
4. Iron and Folic acid supplementation for children, adolescent girls and pregnant women
5. Regular treatment of intestinal worms, especially in children and reproductive age women
6. Universal use of iodine and iron fortified salt
7. Vitamin A supplementation for children aged 6 to 59 months
8. Access to a basket of contraceptives, and safe abortion services
9. Preventive and promotive health educational services, including information on hygiene, hand-washing, dental hygiene, use of potable drinking water, avoidance of tobacco, alcohol, high calorie diet and obesity, need for regular physical exercise, use of helmets on two-wheelers and seat belts; advice on initiation of breastfeeding within one hour of birth and exclusively up to six months of age, and complimentary feeding thereafter, adolescent sexual health, awareness about RTI/STI; need for screening for NCDs and common cancers for those at risk
10. Home based newborn care, and encouragement for exclusive breastfeeding till six months of age
11. Community based care for sick children, with referral of cases requiring higher levels of care
12. HIV testing and counselling during antenatal care
13. Free drugs to pregnant HIV positive mothers to prevent mother to child transmission of HIV
14. Malaria prophylaxis, using Long Lasting Insecticide Treated Nets (LLIN), diagnosis using Rapid Diagnostic Kits (RDK) and appropriate treatment
15. School check-up of health and wellness, followed by advice, and treatment if necessary
16. Management of diarrhoea, especially in children, using Oral Rehydration Solution (ORS)
17. Diagnosis and treatment of Tuberculosis, Leprosy including Drug and Multi-Drug Resistant cases.
18. Vaccines for hepatitis B and C for high risk groups
19. Patient transport systems including emergency response ambulance services of the 'dial 108' model

ambulatory EHP would be a priority and every UHC model would include systems for full and free access to essential generic medicines, through linkages with Government pharmacies (for public providers) and Jan Aushadhi outlets (for all). Since the frequency of use of services, nature of service delivery and cost of services are fundamentally different for out-patient (ambulatory) and in-patient care, and to obviate the possibility of substitution of primary care by secondary and tertiary care, cost of ambulatory care would need to be earmarked in each UHC pilot. An effective health information network that could be accessed by all service providers and patients (for their own records) would enable the continuum of care. All models could learn from the platform developed by RSBY in terms of beneficiary coverage, facility enrolment and prevention of fraud.

20.48. States may be encouraged and partially funded to run at least one, but up to three UHC pilots in districts through the 'Incentive Pool' under NHM. Individual States, in consultation with the MoHFW, expert groups and institutions may finalise the details of the pilot models before roll out. The pilots could explore different models for providing universal access to an EHP, including those by using public facilities in that area after being suitably strengthened, empowered and networked, and a combination of public and private facility networks. The pilot models must demonstrate the comparative advantages and costs of different approaches to UHC that would be appropriate for the level of development and the socio economic context of that state. Medical colleges can be asked to devise rigorous evaluation designs for testing the cost-effectiveness, patient's satisfaction and change in household's out-of-pocket expenses.

20.49. However, before rolling out UHC on pilot mode, preparations for the following items need to be initiated:

1. Frame a national, core Essential Health Package for out-patient and in-patient care for uniform adoption in pilots. It is possible to expand the package of services under RSBY into an EHP, with the vision of replacing an insurance based system with a tax funded UHC system, over a period of time.
2. The State Health Society should be empowered with requisite resources and its capacity built to administer the coverage.
3. Prepare the UHC Plan as a part of the District Health Action Plan of NHM for the pilot districts and identify the additional items to be covered for EHP.
4. Frame and ensure compliance with Standard Treatment and Referral Guidelines.
5. Strengthen the State and District programme management units to implement the EHP.
6. A robust and effective Health Management Information System which, in the best case scenario, tracks every health encounter and would enable assessment of performance and help in allocating resources to facilities.
7. Register all resident families in the area covered.
8. Build an effective system of community involvement in planning, management, oversight and accountability.
9. Build an effective community oversight and grievance redressal system through active involvement of Local Self-Government Agencies and Civil Society.
10. Develop and strengthen Monitoring and Independent Evaluation Mechanisms.

OUTCOME INDICATORS FOR TWELFTH PLAN

20.50. The Twelfth Plan must work towards national health outcome goals, which target health indicators. The national health goals, which would be aggregates of State wise goals (Table 20.4), are the following:

1. *Reduction of Infant Mortality Rate (IMR) to 25*: At the recent rate of decline of 5 per cent per year, India is projected to have an IMR of 36 by 2015 and 32 by 2017. An achievement of the MDG of reducing IMR to 27 by 2015 would require further acceleration of this historical rate of decline. If this accelerated rate is sustained, the country can achieve an IMR of 25 by 2017.
2. *Reduction of Maternal Mortality Ratio (MMR) to 100*: At the recent rate of decline of 5.8 per cent per annum India is projected to have an MMR

TABLE 20.4
State-Wise Targets on IMR and MMR in Twelfth Plan

Sl. No	Name of the States/UTs	Recent Status			Target for Twelfth Plan		
		IMR	MMR	Anaemia	IMR	MMR	Anaemia
India		**44**	**212**	**55.3**	**25**	**100**	**28**
1	Andhra Pradesh	43	134	62.9	25	61	31
2	Arunachal Pradesh	32	NA	50.6	19	–	25
3	Assam	55	390	69.5	32	177	35
4	Bihar	48	261	67.4	26	119	34
5	Chhattisgarh	48	269	57.5	28	122	28
6	Goa	11	NA	38	6	–	19
7	Gujarat	41	148	55.3	24	67	28
8	Haryana	44	153	56.1	26	65	28
9	Himachal Pradesh	38	NA	43.3	22	–	22
10	Jammu & Kashmir	41	NA	52.1	24	–	26
11	Jharkhand	39	261	69.5	23	109	35
12	Karnataka	35	178	51.5	15	80	26
13	Kerala	12	81	32.8	6	37	16
14	Madhya Pradesh	59	269	56	34	122	28
15	Manipur	11	NA	35.7	6	–	18
16	Maharashtra	25	104	48.4	15	47	24
17	Meghalaya	52	NA	47.2	30	–	24
18	Mizoram	34	NA	38.6	20	–	19
19	Nagaland	21	NA	NA	12	–	–
20	Odisha	57	258	61.2	33	117	31
21	Punjab	30	172	38	16	78	19
22	Rajasthan	52	318	53.1	30	145	27
23	Sikkim	26	NA	60	15	–	28
24	Tamil Nadu	22	97	53.2	13	44	27
25	Tripura	29	NA	65.1	17	–	33
26	Uttar Pradesh	57	359	49.9	32	163	20
27	Uttarakhand	36	359	55.2	21	163	28
28	West Bengal	32	145	63.2	11	66	32
29	Andaman & Nicobar Islands	23	NA	NA	12	–	–
30	Delhi	28	NA	44.3	15	–	22
31	Chandigarh	20	NA	NA	12	–	–
32	Dadra & Nagar Haweli	35	NA	NA	20	–	–
33	Daman & Diu	22	NA	NA	13	–	–
34	Lakshadweep	24	NA	NA	14	–	–
35	Puducherry	19	NA	NA	11	–	–

Note: States which have opted for targets more ambitious than on pro-rate basis are coloured maroon.

of 139 by 2015 and 123 by 2017. An achievement of the Millennium Development Goal (MDG) of reducing MMR to 109 by 2015 would require an acceleration of this historical rate of decline. At this accelerated rate of decline, the country can achieve an MMR of 100 by 2017.

3. *Reduction of Total Fertility Rate (TFR) to 2.1*: India is on track for the achievement of a TFR target of 2.1 by 2017, which is necessary to achieve net replacement level of unity, and realise the long cherished goal of the National Health Policy, 1983 and National Population Policy of 2000.
4. *Prevention, and reduction of under-nutrition in children under 3 years* to half of NFHS-3 (2005–06) levels: Underweight children are at an increased risk of mortality and morbidity. At the current rate of decline, the prevalence of underweight children is expected to be 29 per cent by 2015, and 27 per cent by 2017. An achievement of the MDG of reducing undernourished children under 3 years to 26 per cent by 2015 would require an acceleration of this historical rate of decline. The country needs to achieve a reduction in below 3 year child under-nutrition to half of 2005–06 (NFHS) levels by 2017. This particular health outcome has a very direct bearing on the broader commitment to security of life, as do MMR, IMR, anaemia and child sex ratio.
5. *Prevention and reduction of anaemia among women aged 15–49 years* to 28 per cent: Anaemia, an underlying determinant of maternal mortality and low birth weight, is preventable and treatable by a very simple intervention. The prevalence of anaemia needs to be steeply reduced to 28 per cent by the end of the Twelfth Plan.
6. *Raising child sex ratio in the 0–6 year age group from 914 to 950*: Like anaemia, child sex ratio is another important indicator which has been showing a deteriorating trend, and needs to be targeted for priority attention.
7. *Prevention and reduction of burden of Communicable and Non-Communicable diseases (including mental illnesses) and injuries*: State wise and national targets for each of these conditions will be set by the Ministry of Health and Family Welfare (MoHFW) as robust systems are put in place to measure their burden. Broadly, the goals of communicable diseases shall be as indicated in Table 20.5.
8. *Reduction of poor households' out-of-pocket expenditure*: Out-of-pocket expenditure on health care is a burden on poor families, leads to impoverishment and is a regressive system of financing. Increase in public health spending to 1.87 per cent of GDP by the end of the Twelfth Plan, cost-free access to essential medicines in public facilities, regulatory measures proposed in the Twelfth Plan are likely to lead to increase in share of public spending. The Twelfth Plan measures will also aim to reduce out-of-pocket spending as a proportion of private spending on health.

FINANCING FOR HEALTH

20.51. In the Twelfth Plan, general tax revenues would be the principle source of finance for publicly delivered health services supplemented by partnerships with the private sector and, contribution by corporates as a part of their Corporate Social Responsibility. A designated sin tax to finance a part

TABLE 20.5
National Health Goals for Communicable Diseases

Disease	Twelfth Plan Goal
Tuberculosis	Reduce annual incidence and mortality by half
Leprosy	Reduce prevalence to <1/10000 population and incidence to zero in all districts
Malaria	Annual Malaria Incidence of <1/1000
Filariasis	<1 per cent microfilaria prevalence in all districts
Dengue	Sustaining case fatality rate of <1 per cent
Chikungunya	Containment of outbreaks
Japanese Encephalitis	Reduction in mortality by 30 per cent
Kala-azar	Elimination by 2015, that is, <1 case per 10000 population in all blocks
HIV/AIDS	Reduce new infections to zero and provide comprehensive care and support to all persons living with HIV/AIDS and treatment services for all those who require it.

TABLE 20.6
Budget Support for Departments of MoHFW in Twelfth Plan (2012–17)

(Figures in ₹ Crores)

Budget Support for Central Departments in Eleventh Plan (2007–12) and Twelfth Plan (2012–17) Projections (₹ Crores)			
Department of MoHFW	Eleventh Plan Expenditure	Twelfth Plan Outlay	% Increase
Department of Health and Family Welfare	83407	268551	322%
Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)	2994	10044	335%
Department of Health Research	1870	10029	536%
Aids Control	1305	11394	873%
Total MoHFW	89576	300018	335%

of the health budget can lead to reduced consumption of these harmful items (as tobacco and alcohol) and could be considered.

20.52. For financing the Twelfth Plan the projections envisage increasing total public funding, plan and non-plan, on core health from 1.04 per cent of GDP in 2011–12 to 1.87 per cent of GDP by the end of the Twelfth Plan. In such an event, the funding in the Central Plan would increase to 3 times the Eleventh Plan levels involving an annual increase by 34 per cent (Table 20.6). With the incentive measures proposed, States' total funding, Plan and Non-plan, on Health is expected to increase to three times the Eleventh Plan levels involving a similar annual increase. The Central and State funding for Health, as a proportion of total public sector health funding will remain at 2011–12 levels of 33 per cent and 67 per cent respectively.

20.53. When viewed in the perspective of the broader health sector, which includes schemes of Ministries other than Health aimed at improving the health status of people, namely Drinking Water and Sanitation, Mid-day Meal and Integrated Child Development Services Scheme the total Government expenditure as a proportion of GDP in the Twelfth Plan is likely to increase from 1.94 per cent of GDP in the last year of the Eleventh Plan to 3.04 per cent in the corresponding year of the Twelfth Plan.

FUNDING AS AN INSTRUMENT OF INCENTIVE AND REFORM

20.54. In the Twelfth Plan, a paradigm shift is envisaged in Central Government funding to ensure that sufficient amounts are made available and, further that they leverage a comparable effort from the States. In the Approach Paper to the Twelfth Plan, it was stated that we should aim at raising the total expenditure on health in the Centre and the States (including both Plan and Non-Plan) to 2.5 per cent of GDP by the end of the Twelfth Plan period. Accordingly, the allocations proposed for the Twelfth Plan makes Health a priority and will allow Central Plan expenditure to expand by about 34 per cent per year. Since the expenditure by the States is double the expenditure by the Centre, it is necessary to ensure that the States match the effort. If this is achieved, the total expenditure of the Centre and the States on Core Health would rise to about 1.87 per cent of GDP at the end of the Twelfth Plan period.

20.55. A key objective is to ensure that the States increase their expenditure on health at the same rate as the Centre. This may become possible if the transfer to the States is made conditional upon a higher expenditure by the States on health. States would be eligible to receive assistance through an incentive grant on the lines being recommended for all Centrally Sponsored Schemes. They would be eligible if they maintain their health expenditure (Plan and Non-Plan) as a proportion of their budget at the base level (average of last three years) at the minimum, and also prepare a State wide health sector plan based on District Health plans. The incentive grant could be operated as an instrument of equity between states, where both performance and need is recognised in making allocative decisions. The details of the proposed arrangement will be worked out by the Ministry of Health and Family Welfare in consultation with Planning Commission.

20.56. Flexibility in Central funding for States may be built in so that States take the lead in devising plans suited to their health needs. The proposal for a flexi fund to the States is being recommended for all Centrally Sponsored Schemes in the Twelfth Plan. Accordingly, in the health sector, within the broad national parameters, States would have the flexibility to plan and implement their own Health Action Plans. A fixed portion of National Health Mission funds could be earmarked to States and UTs, using an objective formula based on the total population and health lag of the State; these baseline funds would be allotted and made known to the States. A sector-wide Memorandum of Understanding (MoU) between the State and Central Government may formalise mutual commitments and provide strategic direction for health sector reforms.

OTHER MODELS OF FINANCING

20.57. *Public–Private Partnerships*: PPPs offer an opportunity to tap the material, human and managerial resources of the private sector for public good. But experience with PPP has shown that Government's capacity to negotiate and manage it is not effective. Without effective regulatory mechanisms, fulfillment of contractual obligations suffers from weak oversight and monitoring. It is necessary, as the HLEG has argued, to move away from ad hoc PPPs to well negotiated and managed contracts that are regulated effectively keeping foremost the health of the '*aam-admi*'. Health has been included with other infrastructure sectors which are eligible for Viability Gap Funding up to a ceiling of 20 per cent of total project costs under a PPP scheme. As a result, private sector could propose and commission projects, such as hospitals and medical colleges outside metropolitan areas, which are not remunerative per se, and claim up to 20 per cent of the project cost as grant from the Government. Some models of PPP in healthcare covering Primary Health Care, Diagnostic services, Hospitals which are currently being implemented in the States are illustrated in Box 20.3. These can be considered wherever appropriate for replication and upscaling.

20.58. PPP arrangements should address issues of compliance with regulatory requirements, observance of Standard Treatment Guidelines and delivery of affordable care. An additional model for consideration is the Not-for-profit Public Private Partnership (NPPP) being followed in the International Institute of Information Technology (IIIT), which have been set up as fully autonomous institutions, with partnership of the Ministry of Human Resource Development, Governments of respective States and industry members. PPP and Not-for-Profit PPP models can be considered in order to expand capacities for tertiary care in the Twelfth Plan.

20.59. *Resource generation by facilities and Colleges*: Given the gap in need and availability of tertiary care facilities and to ensure maximisation of benefits from limited public funds, public facilities should be encouraged to part-finance their recurring costs by mobilising contributions (including under Corporate Social Responsibility) and Internal Extra-Budgetary Resources. Under the recently drafted Companies Bill the Government has proposed that companies should earmark 2 per cent of their average profits of the preceding three years for Corporate Social Responsibility (CSR) activities. CSR is mandatory for Central Public Sector Enterprises, the guidelines of which issued by the Department of Public Enterprises include health service as one of the eligible components. To avail of this opportunity, all publicly funded health care facilities would be allowed to receive donations, and funding from companies under their Corporate Social Responsibility head. Adequate safeguards have to be built in so as to ensure 'no-frills funding' and that donations are not used to influence the policies or practices of healthcare facilities in any way. All medical colleges should be encouraged to develop their own corpus to attain financial flexibility over a period of time. Tamil Nadu has issued guidelines to authorise Medical Officers in charge of particular healthcare facilities to enter into MoUs with interested persons to receive contributions for capital or recurrent expenditure in the provision and maintenance of facilities. On available models for self-generation of revenues, the option for cross-subsidy in line with the Aravind eye care system based in Tamil Nadu could also be explored. Tertiary care

Box 20.3
Public–Private Partnerships (PPP) in Health Sector

Rajiv Gandhi Super-speciality Hospital, Raichur, Karnataka
Contracting Arrangements: Government of Karnataka and Apollo Hospitals
Type of Partnership: Joint Venture (Management Contract)
Services: Provides super-speciality clinical care services and management of Hospital. Free Out-patient services for BPL patients.

Rural Health Care Delivery and management of PHCs
Contracting Arrangements: Karuna Trust and Government of Arunachal Pradesh
Type of Partnership: Contracting in
Services: Manages 11 PHC's, provides health care facilities to the local population.

Labs, Drug Supply and Diagnostic Services Hindlabs
Contracting Arrangements: MoHFW and HLL Life Care Ltd
Type of Partnership: Contracting in
Services: A novel initiative delivers high end diagnostic services at CGHS rates

Health Insurance Community Health Insurance Scheme
Contracting Arrangements: Karuna Trust, National Insurance Co. and Government of Karnataka
Type of Partnership: Joint Venture
Services: A community health insurance scheme to improve the access and utilisation of health services

Outreach/health Delivery Mobile Health Service in Sunderban, W. Bengal
Contracting Arrangements: Government of West Bengal and Non-profit NGO
Type of Partnership: Contracting in (Joint Venture)
Services: Mobile boat based health services and access to health services in remote areas

RCH Services Merry Gold Health Network (MGHN) and SAMBHAV Voucher Scheme in UP
Contracting Arrangements: Joint endeavour of Government of India and USAID through UP SIFPSA
Type of Partnership: Social Franchising network and Voucher system
Services: Provide FP/RCH services through accredited private providers

facilities would have an incentive to generate revenues if they are allowed flexibility in the utilisation of self-generated resources within broad policy parameters laid down by the Government.

RASHTRIYA SWASTHYA BIMA YOJANA (RSBY)

20.60. Health insurance is a common form of medical protection all over the world and until the Eleventh Plan, it was available only to government employees, workers in the organised sector; private health insurance has been in operation for several years, but its coverage has been limited. The percentage of the total population estimated to be covered under these schemes was only 16 per cent. The poor did not have any insurance for in-patient care. The 'Rashtriya Swasthya Bima Yojana' (RSBY), introduced in 2007, was designed to meet the health insurance needs of the poor.

20.61. RSBY provides for 'cash-less', smart card based health insurance cover of ₹30000 per annum to each enrolled family, comprising up to five individuals. The beneficiary family pays only ₹30 per annum as registration/renewal fee. The scheme covers hospitalisation expenses (Out-patient expenses are not covered), including maternity benefit, and pre-existing diseases. A transportation cost of ₹100 per visit is also paid. The premium payable to insurance agencies is funded by Central and State Governments in a 75:25 ratio, which is relaxed to 90:10 for the

North-East region and Jammu and Kashmir. The maximum premium is capped at ₹750 per insured family per year.

20.62. RSBY was originally limited to Below Poverty Line (BPL) families but was later extended to building and other construction workers, MGNREGA beneficiaries, street vendors, beedi workers, and domestic workers. The scheme is currently being implemented in 24 States/UTs. About 3.3 crore families have been covered as on date and 43 lakh persons have availed hospitalisation under the scheme till November 2012.

20.63. Key feature of RSBY is that it provides for private health service providers to be included in the system, if they meet certain standards and agree to provide cash-less treatment which is reimbursed by the insurance company. This has the advantage of giving patients a choice between alternative service providers where such alternatives are available. Several State Governments (such as those of Andhra Pradesh and Tamil Nadu) have introduced their own health insurance schemes, which often have a more generous total cover.

20.64. A general problem with any 'fee for service' payment system financed by an insurance mechanism is that it creates an incentive for unnecessary treatment, which in due course raises costs and premiums. There is some evidence that this is happening and it is necessary to devise corrective steps to minimise it. Some groups oppose insurance schemes per se on these grounds, but that is not realistic. The beneficiary is able to choose from alternative care givers covered by a common insurance scheme. Experience with the RSBY, and with the other State-specific insurance schemes, needs to be thoroughly studied so that suitable corrective measures can be introduced before integrating these schemes into a framework of Universal Health Coverage (UHC). The shortcomings of RSBY noted so far include high transaction costs due to insurance intermediaries, inability to control provider induced demand, and lack of coverage for primary health and out patient care. Fragmentation of different levels of care can lead to an upward escalation towards the secondary level of patients who should preferably be handled at the primary or even preventive stages. The RSBY also does not take into account state specific variations in disease profiles and health needs.

Innovative Payment Methods to Improve Outcomes

20.65. The weakness of line item budget payment methods for public facilities is well documented. More responsive resource allocation is a challenge for the Government. Investments in public facilities will translate into better access, coverage, quality of care, and superior health outcomes only if these facilities and their personnel perform their expected tasks in a responsive manner. Payment methods could be used as one of the instruments to improve public sector performance. For example, managers and health personnel in public sector facilities could be paid bonus for achieving higher coverage of services as measured by reduction in the use of private sector services in the coverage area (unless these are contracted in by the Government); they can be paid further incentives for delivering preventive care services effectively and achieving measurable health outcomes in their respective areas. UHC pilots to be rolled out by States could experiment with different methods of organisation and delivery of services, and payment systems so that resources allocated are able to generate better health outcomes.

Health Care for Government Employees

20.66. There is a proposal for introduction of a health insurance scheme for the Central Government employees and pensioners on a pan-India basis, with special focus on pensioners living in non-CGHS areas. The proposal is to make this scheme voluntary cum contributory for serving employees and pensioners. However, it is proposed to be made compulsory for the new entrants in Government service.

HEALTH AND MEDICAL REGULATION

20.67. Regulations for food, drugs and the medical profession requires lead action by the Central Government not only because these subjects fall under the Concurrent List in the Constitution, but also because the lack of consistency and well enforced standards hugely impacts the common citizen and diminishes health outcomes. Keeping in

view the need to place authority and accountability together, the proposed Public Heath Cadre in States would be expected to be the single point for enforcement of all health related regulations.

20.68. There is also an urgent need to strengthen the regulatory systems in the States, where most of the implementation rests. This would entail the strengthening of and establishment of testing labs and capacity building of functionaries. Such proposals will be part-funded under the National Health Mission (NHM). Regulation can be made affordable and effective by encouraging self-regulation, and entrusting responsibility to Public Health officers.

DRUG REGULATION

20.69. E-governance systems that inter-connect all licensing and registration offices and laboratories, GPS based sample collection systems and online applications for licensing would be introduced. A repository of approved formulations at both State and national levels would be developed. The drug administration system would build capacity in training, and encourage self regulation.

20.70. The MoHFW would ensure that irrational Fixed Dose Combinations (FDCs) and hazardous drugs are weeded out in a time bound manner.

20.71. Pharmaco-vigilance, post-marketing surveillance, Adverse Drug Response Monitoring, quality control, testing and re-evaluation of registered products would be accorded priority under drug regulation.

20.72. Use of generic names or the International Non-proprietary Name (INN) would be made compulsory and encouraged at all stages of Government procurement, distribution, prescription and use, as it contributes to a sound system of procurement and distribution, drug information and rational use at every level of the health care system. Established brand manufacturers would be encouraged to bid for Government procurement, but should provide medicines in non-propriety names.

20.73. The Drugs and Cosmetics Act would be amended to include medical devices incorporating provisions for their risk-based classification, clinical trials, conformity assessments and penalties. As recommended by the Mashelkar Committee, a Central Drug Authority needs to be set up. This authority would review the issuance of licenses for manufacture and sale of drugs. Once this Authority is in place, suitable strengthening of its infrastructure and laboratories would be done. The Government would mandate that labels on drugs and food fully disclose all its ingredients.

20.74. Strengthening of existing, and creation of new drug testing laboratories is essential to ensure the quality of drugs being produced in India, whether they are used for domestic distribution or for export to other countries.

20.75. A National List of Essential Medicines would be made operational with the introduction of Standard Treatment Guidelines, including for AYUSH. It would be printed and supplied to all facilities at regular intervals. These guidelines would incorporate generic prescriptions. Implementation of Standard Treatment Guidelines in the public and private sectors is a priority to address drug resistance, promote rational prescriptions and use of drugs, and contain health care costs.

20.76. Pharmaceutical marketing and aggressive promotion also contributes to irrational use. There is a need for a mandatory code for identifying and penalising unethical promotion on the part of Pharma companies. Mandated disclosure by Pharmaceutical companies of the expenditure incurred on drug promotion, ghost writing in promotion of pharma products to attract disqualification of the author and penalty on the company, and vetting of drug related material in Continuing Medical Education would be considered. To avoid medical conflicts of interest, legislation requiring drug companies to disclose payments made to doctors for research, consulting, lectures, travel and entertainment would also be considered.

20.77. MoHFW would encourage public and patient education in the appropriate use of drugs, particularly antibiotics and antimicrobials, since it would benefit individual patients and public health.

20.78. Institutional frameworks for regulation of clinical research and trials to ensure safety of research subjects will be a priority. In addition, efficient assessment and approval of new technologies, drugs and devices would also be done. The process of approval and introduction of new medical technologies, and devices, would be notified. India still has to safeguard itself from TRIPS plus provisions which will evergreen patents for more than 20 years. Safeguards like compulsory licensing, parallel imports, and so on, need to be adopted to protect national's public health.

FOOD REGULATION

20.79. The newly established Food Safety and Standards Authority of India (FSSAI) would strive to improve transparency in its functioning and decision making. Bio-safety would be an integral part of any risk assessment being undertaken by FSSAI.

20.80. Food surveys would be carried out regularly and their results made public. An annual report on state of food safety would be published.

20.81. Policies to promote production and consumption of healthy food would be developed. Sale and consumption of unhealthy food would be discouraged in general and in schools in particular. Public information campaigns to create awareness on food safety matters will be launched.

20.82. An appropriate module on food safety and bio-safety will be introduced in the Medical and Nursing curriculum.

REGULATION OF MEDICAL PRACTICE

20.83. The provisions for registration and regulation of clinical establishments would be implemented effectively; all clinical establishments would also be networked on the Health Information System, and mandated to share data on nationally required parameters. The Government would consider mandating evidence based and cost-effective clinical protocols of care, which all providers would be obliged to follow. It would endeavour to gradually move towards a regime where clinical decision-making would be routinely subjected to prescription audits to confirm compliance. The rights of patients to obtain rational treatment of good quality at reasonable cost would be protected. Professional councils and faculty in medical colleges shall be encouraged to undertake prescription audits to assess extent of compliance with Standard Treatment Guidelines for identifying violations of guidelines and taking appropriate action. There is a need to revise and strengthen the existing regulatory mechanism for medical practice to prevent wilful negligence and malpractice. Grievance redressal mechanisms would be put in place.

20.84. Since there are no legislations on registration of clinical establishments in many States, and the ones existing (as in States of Andhra Pradesh, Maharashtra, Delhi, Madhya Pradesh, Manipur, Nagaland, Odisha, Punjab and West Bengal) have major gaps, all States will be persuaded to adopt the Central Act under Clause (1) of Article 252 of the Constitution.

20.85. An appropriate regulatory mechanism would be considered to ensure compulsory rural service by medical graduates. Concurrently, a set of monetary and non-monetary incentives would be built up to encourage doctors and allied health cadres to serve in rural areas.

20.86. Effective enforcement of the provisions of Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act and relentless public awareness measures would be put in place. A concerted societal conscientisation and communication campaign would be launched to create value for the girl child and women, along with affirmative action for girls. Local Self Government Institutions, specially the newly elected women panchayat and urban local body members, would be mobilised to change deeply entrenched behaviours and mindsets about the girl child. Panchayats and urban local bodies which are able to achieve a reversal of the

falling trend in child sex ratio would be recognised and awarded, along the lines of the Nirmal Gram Puraskar.

NATIONAL LEVEL TERTIARY CARE INSTITUTIONS

20.87. A single Central Sector Scheme on 'National Level Tertiary Care Institutions' will fund up-gradation of existing medical colleges and converting tertiary care facilities of the Central Government across different departments into teaching institutions.

20.88. In the Twelfth Five Year Plan a concerted effort needs to be made to confer greater autonomy to the existing Tertiary Care Institution and Hospitals. They need to be delegated greater administrative and financial powers and need to be empowered to function as effective Board managed entities (see Box 20.4).

20.89. In the Central Government sector, more AIIMS like Institutions (ALIs) will be established during the Twelfth Plan period in addition to the eight already approved. These would be completed and made operational during the Plan period. They will serve as composite centres for continued professional education, and multi-skilling of health workers.

20.90. The existing teaching institutions will be strengthened to provide leadership in research and practice on different medical conditions, and research themes. Priorities include Cancer, Arthritis and musculo-skeletal diseases, Child Health, Diabetes, Mental Health and Neuro Sciences, Geriatrics, Biomedical and Bioengineering, Hospital and Health Care Administration, Nursing Education and Research, Information Technology and Tele-Medicine and Complementary Medicine.

20.91. Centres of Excellence need to be created for training public health professionals in epidemiology, entomology and microbiology for effective disease surveillance and, disease outbreak investigations and for effectively responding to outbreaks, epidemics and disasters.

20.92. A continuous stream of qualified teachers would be required for serving in the new teaching institutions proposed. Apex institutions of learning like AIIMS, Post Graduate Institute of Medical Education and Research (PGIMER) and Jawaharlal Institute of Post Graduate Medical Education and Research (JIPMER) will be geared to build capacity in regional and State teaching institutions for training of trainers.

20.93. A new category of mid-level health-workers named Community Health Officers, could be developed for primary health care. These workers would be trained after Class XII for a three year period to become competent to provide essential preventive and primary care and implement public health activities at sub-centre level. Details of their functions, qualifications, designations, placement and career tracks within the health system need to be worked out. This new category offers an opportunity to break through professional silos, develop competencies that draw upon different but complementary streams of knowledge and help generate employment while meeting health needs of under-served populations. These Community Health Officers would be groomed to discharge public health functions.

20.94. Simultaneously, programmes for Continuing Medical Education would be strengthened and expanded. Agencies such as the National Academy

Box 20.4
Institute of Liver and Biliary Sciences, Delhi: A Model of Autonomy and Sustainable Financing

The Institute is a super specialty medical institute under Government of NCT Delhi that seeks to provide quality tertiary health care. Its services: are free for BPL card holders of Delhi, and charges for other classes are competitive. Its business model aims at attaining efficiency and self sustenance.

The Institute is governed by a Society in an autonomus manner, which aims to combine the skills and structure of academic Universities, clinical and research acumen of the super-specialists and the managerial skills of the corporate world.

of Medical Sciences can play a useful role in providing good quality teaching material and also help in its dissemination, by using the National Knowledge Network.

20.95. Good health planning requires high quality data on estimates of supply and demand of various categories of health workers. Accurate data on the number, specialisation, distribution, status of practice of health professionals in the country is, however, not available. Professional Councils in respective States and at the national level should therefore, continually update their records on Human Resources, trying to take into account the extent of internal and international migration The MoHFW would exercise due vigilance to ensure this.

20.96. Licensing of medical professionals with a view to control the entry of unqualified persons into the market is governed by various laws. The National Commission for Human Resources and Health (NCHRH) would be created as an overarching regulatory body for medical education and allied health sciences with the dual purpose of reforming the current regulatory framework and enhancing the supply of skilled human resource in the health sector. The proposed Commission would subsume many functions of the existing councils, namely Medical Council of India, Dental Council of India, Nursing Council of India and Pharmacy Council of India. The proposed NCHRH would also constitute a National Board for Health Education (NBHE) and a National Evaluation and Assessment Committee (NEAC) with a mandate to prescribe minimum standards for health education, and developing and maintaining a system of accreditation of health educational institutes respectively. Apart from this, a National Council has also been proposed to be set up under NCHRH to inter alia ensure ethical standards among medical professionals. The NCHRH is expected to assess the demand and availability to plan for the creation of the right mix of human resource in health.

INFORMATION TECHNOLOGY IN HEALTH

20.97. Information Technology can be used in at least four different ways to improve health care and systems:

1. Support public health decision making for better management of health programmes and health systems at all levels
2. Support to service providers for better quality of care and follow up
3. Provision of quality services in remote locations through Tele-medicine
4. Supporting education, and continued learning in medicine and health

20.98. A composite HIS, when fully operational, would incorporate the following:

1. Universal registration of births, deaths and cause of death. Maternal and infant death reviews.
2. Nutritional surveillance, particularly among women in the reproductive age group and children under six years of age.
3. Disease surveillance based on reporting by service providers and clinical laboratories (public and private) to detect and act on disease outbreaks and epidemics.
4. Out-patient and in-patient information through Electronic Medical Records (EMR) to reduce response time in emergencies and improve general hospital administration.
5. Data on Human Resource within the public and private health system
6. Financial management in the public health system to streamline resource allocation and transfers, and accounting and payments to facilities, providers and beneficiaries. Ultimately, it would enable timely compilation of the National Health Accounts on an annual basis.
7. A national repository of teaching modules, case records for different medical conditions in textual and audio-visual formats for use by teaching faculty, students and practitioners for Continuing Medical Education.

8. Tele-medicine and consultation support to doctors at primary and secondary facilities from specialists at tertiary centres.
9. Nation-wide registries of clinical establishments, manufacturing units, drug-testing laboratories, licensed drugs and approved clinical trials to support regulatory functions of Government.
10. Access of public to their own health information and medical records, while preserving confidentiality of data.
11. Programme Monitoring support for National Health Programmes to help identify programme gaps.

20.99. To achieve these goals, computer with internet connectivity would be ensured in every PHC and all higher level health facilities in this Plan period. Connectivity can be extended to sub-centres either through computers or through cell phones, depending on their state of readiness and the skill-set of their functionaries. All District hospitals would be linked by tele-medicine channels to leading tertiary care centres, and all intra-District hospitals would be linked to the District hospital and optionally to higher centres.

20.100. The role of the MoHFW would be to lay IT system standards, and define indicators which would be openly shared. States will be funded for their initiatives in this field at primary or secondary levels through the National Health Mission. Health surveys would be annually conducted to generate district level information on health status, which will also serve to verify the accuracy of routine health information system

NATIONAL HEALTH MISSION (NHM)

20.101. The Prime Minister in his Independence Day speech, 2012 had declared: 'After the success of the National Rural health Mission, we now want to expand the scope of health services in our towns also. The National Rural Health Mission will be converted into a National Health Mission (NHM) which would cover all villages and towns in the country.'

20.102. The gains of the flagship programme of NRHM will be strengthened under the umbrella of NHM which will have universal coverage. The focus on covering rural areas and rural population will continue.

20.103. A major component of NHM is proposed to be a Scheme for providing primary health care to the urban poor, particularly those residing in slums. Modalities and institutional mechanisms for roll-out of this scheme are being worked out by the Ministry of Health and Family Welfare in consultation with Planning Commission. NHM would give the States greater flexibility to make multi-year plans for systems strengthening, and addressing threats to health in both rural and urban areas through interventions at Primary, Secondary and Tertiary levels of care. The roles and responsibilities of the Centre and States in the health sector would be made operational through instruments such as State specific and Sector-wide Memoranda of Understanding (MoU). The MoU mechanism is a tool for collective priority setting, involves agreement on measurable outcomes and their relative weight, allows flexibility in implementation and accountability based on objective assessment and incentivisation of performance.

20.104. The targets in the MoU would be finalised through a consultative process so that there is a consensus. The MoU will cover the entire health sector, be subject to rigorous monitoring, and linked to a performance based appraisal and incentive system. The MoU would include important policy reforms, which may not necessarily have budgetary implications such as regulation, HR policies, inter-sectoral convergence, use of generic medicines. The MoU can have a set of obligatory parameters, state specific optional parameters and reform parameters. The MoU will follow the log frame approach in setting inputs, outputs, outcomes and impact goals for the districts and States. System-wide MoUs between Centre and States would allow a lot of flexibility to the latter to develop their own strategies and plans for delivery of services, while committing the States to quantitative, verifiable and mutually agreed upon outputs and outcomes.

20.105. In addition to the Common Review Mission, a methodology of external concurrent evaluation would be finalised and put in place to assess the progress in MoU goals. These reports will be placed before the Mission Steering Group at the national level and before the Governing Body of the State and district health societies. All major programme components would be evaluated as part of operational research and programme evaluation.

20.106. The National Health Mission will incorporate the following core principles.

CORE PRINCIPLES

Universal Coverage

20.107. The NHM shall extend all over the country, both in urban and rural areas and promote universal access to a continuum of cashless, health services from primary to tertiary care. Separate strategies shall be followed for the urban areas, using opportunities such as easier access to secondary and tertiary facilities, and better transport and telecommunication services. There is greater scope for contracting arrangements with the private sector in urban areas, to fill gaps in strengthened public facilities. Area specific NHM plans shall address the challenges unique to their areas such as overcrowding, poor sanitation, pollution, traffic injuries, higher rates of crime and risky personal behaviour in urban areas.

Achieving Quality Standards

20.108. The IPHS standards will be revised to incorporate standards of care and service to be offered at each level of health care facility. Standards would include the complete range of conditions, covering emergency, RCH, prevention and management of Communicable and Non-Communicable diseases incorporating essential medicines, and Essential and Emergency Surgical Care (EESC).

20.109. All government and publicly financed private health care facilities would be expected to achieve and maintain these standards. An in-house quality management system will be built into the design of each facility, which will regularly measure its quality achievements. Facilities will be provided with an incentive, which they can share with their teams, to achieve and improve their quality rating. The service and quality standards shall be defined, made consistent with requirements under the Clinical Establishments Act, and performance of each registered facility made public, and periodically ranked. The work of quality monitoring will be suitably institutionalised.

20.110. To enable access to quality diagnostic facilities, pooling of resources available with different agencies, their up-gradation wherever needed, outsourcing and in-sourcing strategies would be adopted.

20.111. The objective would be to achieve a minimum norm of 500 beds per 10 lakh population in an average district. Approximately 300 beds could be at the level of District Hospitals and the remaining distributed judiciously at the CHC level. Where needed, private sector services also may be contracted in to supplement the services provided by the public sector. The sanction of new facilities other than subcentres should be undertaken only when mapping of access demonstrates the need for new facilities to improve accessibility.

20.112. States would be encouraged to put in place systems for Emergency Medical Referral to bridge the gaps in access to health facilities and need for transport in the event of an emergency. Standards for these services will specify the time taken to transport patients from the location to designated health facilities, and these standards shall be evaluated and followed. The possibility of positioning such referral with the response teams of Fire-Fighting Departments, as is the practice in many developed nations, should be explored. These facilities, once operational, would also help in managing disasters, in terms of early response, search and rescue, emergency care and rehabilitation.

20.113. For ensuring access to health care among under-served populations, the existing Mobile Medical units would be expanded to have a presence in each CHC. Mobile Medical Units may also be dedicated to certain areas, which have moving populations. For example, boat clinics of C-NES in Assam

provide curative and emergency care for the population residing in islands and flood plains of the State.

Continuum of Care

20.114. A continuum of care across health facilities helps manage health problems more effectively at the lowest level. For example, if medical colleges, district hospitals, CHCs, PHCs and sub-centres in an area are networked, then the most common disease conditions can be assessed, prevented and managed at appropriate levels. It will avoid fragmentation of care, strengthen primary health care, reduce unnecessary load on secondary and tertiary facilities and assure efficient referral and follow up services. Continuum of care can lead to improvements in quality and patient satisfaction. Such linkages would be built in the Twelfth Plan so that all health care facilities in a region are organically linked with each other, with medical colleges providing the broad vision, leadership and opportunities for skill up-gradation. The potential offered by tele-medicine for remote diagnostics, monitoring and case management needs to be fully realised. Appropriate faculty at the medical college can be given responsibility for training, advising and monitoring the delivery of services in facilities within their allotted jurisdiction. The resources saved in avoiding duplication could be used to universalise the upgrading of standards of health facilities and teaching colleges.

Decentralised Planning

20.115. A key element of the new NHM is that it would provide considerable flexibility to States and Districts to plan for measures to promote health and address the health problems that they face (Box 20.5). The NHM guidelines could provide flexibility to States and districts to plan for results.

20.116. New health facilities would not be set up on a rigid, population based norm, but would aim to be accessible to populations in remote locations and within a defined time period. The need for new facilities of each category would thus be assessed by the districts and States using a 'time to care' approach. This will be done based on a host of contributing factors, including geographic spread of population, nature of terrain, availability of health care facility in the vicinity and availability of transport network. For example, a travel time of 30 minutes to reach a primary healthcare facility, and a total of two hours to reach a FRU could be a reasonable goal. As for staffing, the healthcare facilities should have a basic core staff, with provisions for additional hands in response to an increase in case load, or the range of services

Box 20.5
Flexibility and Decentralised Planning: Key Elements of National Health Mission

1. The guidelines of NHM would be indicative and within broad parameters leave the decision on prioritisation of requirements to the best judgement of the States and Districts. Each District would develop, through effective public participation, a multi-year Health Action Plan for prevention, service delivery and systems management. These plans would become the basis for resource allocation and be made public to enable social audits of the progress made towards the goals. The implementation of these plans would involve the local community. The outcomes of these plans would be subject to Community Based Monitoring (CBM).
2. Health Action Plans at District level and below will aim at convergent delivery of services in an integrated manner to the last beneficiary. The District Health Plans would factor in all determinants of health, and assign roles to each agency for achieving convergence. For instance, these plans can leverage the mid-day meal programme for addressing issues of school child malnutrition and anaemia. Joint training of AWWs and ASHAs would be promoted to build camaraderie and clarity on mutual roles and responsibilities. Anganwadi Centres could be used as base stations for ASHAs, and upgraded into health posts for the delivery of essential health services.
3. Innovations in service delivery to improve coverage, quality of care, health outcomes and reduce costs would be encouraged, and recognised.
4. The sector-wide health plans prepared by the States should incorporate all dispensations of health and health care, and all sources of funding. For instance, medical education, AYUSH, AIDS control, Health Research, convergence with ICDS and Drinking Water and Sanitation would find space in the state health plans.

provided. Indian Public Health Standards (IPHS) would be revised accordingly. Individual States can choose from a range of staffing options, including those suggested by the Working Group on NRHM and by the HLEG, both options will be included in the Central funding envelop. Such flexibility to States in location, size and staffing of the health care facilities would ensure optimum utilisation of existing resources, and infrastructure. Every Panchayat and urban municipal ward should have at least one sub-centre. The sub-centre's package of assured services, and consequent staffing will vary according to the epidemiological and health systems contexts.

PRIORITY SERVICES

Access to Essential Medicines in All Public Facilities

20.117. Availability of essential medicines in public sector health facilities free of cost is critical to achieve affordable health care for the bulk of the population. This is the area which provides the speediest scope for improved service delivery in return for allocation of sufficient resources. A set of measures including revision and expansion of the Essential Drugs List, ensuring the rational use of drugs, strengthening the drug regulatory system, and supporting the setting up of national and state drug supply logistics corporations is being recommended as core components. States would be encouraged to plan and partially fund universal access to essential drugs and diagnostic services in all government health care facilities. Drug supply would be linked to centralised procurement at state level to ensure uniform drug quality and cost minimisation by removing intermediaries.

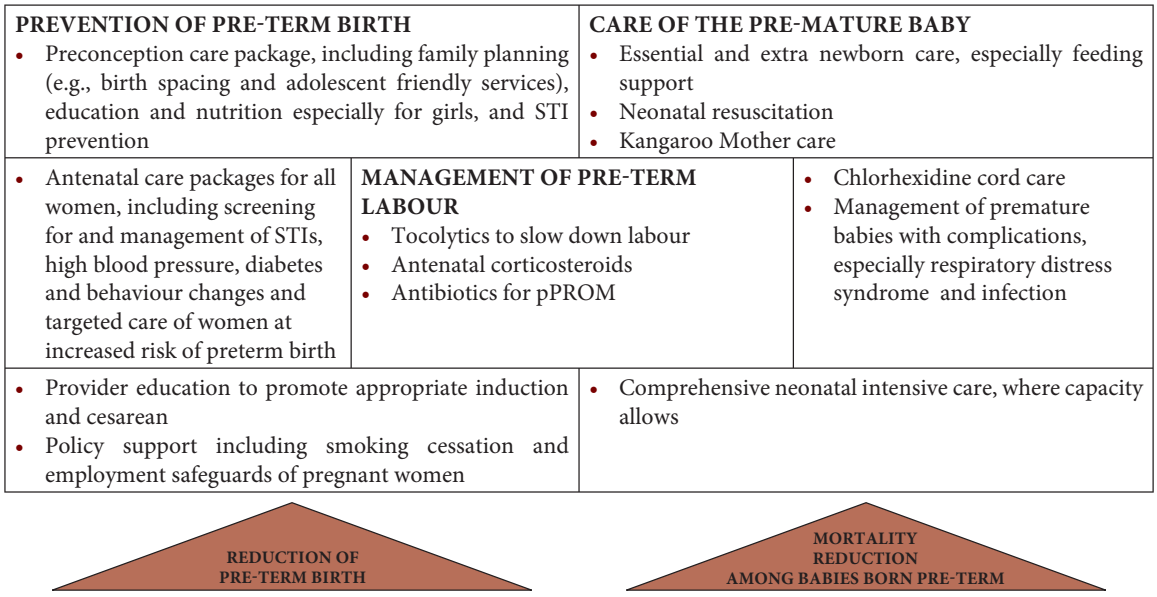
20.118. The provision of essential medicines free of cost must be backed by logistic arrangements to procure generic medicines from suppliers of repute that match pre-qualifying standards. The MoU instrument shall be used to encourage States to adopt the TNMSC model, for professional management of procurement, storage and logistics. Support to rational and generic drug prescription for the private sector requires a different approach. This can be achieved through expansion of the existing Jan Aushadhi stores in all sub-divisions and blocks. These stores could be linked to centralised procurement at state level.

Strategy for Maternal and Child Health

20.119. Maternal and child health care will continue to be a major focus, especially given the inadequate progress in reducing IMR and MMR. Programme monitoring needs to track experiences and outcomes of women rather than only disbursement of cash. Training being provided to the Skilled Birth Attendants (SBA) needs to be evaluated independently. Plans need to be made for rational posting of those SBAs who have received this training, so as to reach the maximum population with skilled attendance at birth. Appropriate area-specific interventions will be made such as equipping Traditional Birth Attendants (TBAs)/dais for safe deliveries, (especially in remote and inaccessible areas) universalising access to the SBA over a period of time, and prioritising better access to emergency obstetric care (both public and private) within a two-hour travel time in cases of complications. The quality of care being provided in routine institutional deliveries needs to be carefully monitored and accessible grievance redressal mechanisms put in place.

20.120. Simple strategies for prevention of pre-term births, and reducing deaths among pre-term babies can make a difference in survival and health of children during the critical first month of life. These will be built into protocols for health workers and standards for health facilities (Figure 20.3).

20.121. Home-based newborn care, drawing on validated models, such as that of Gadchiroli in Maharashtra, and focused efforts to encourage breastfeeding and safe infant and child feeding practices will be promoted. While emphasis on early breastfeeding is a part of Accredited Social Health Activists' (ASHAs) training, special training on neonatal care for community and facility-level health functionaries will result in a faster reduction in IMR. The findings of Maternal Death Reviews and Infant death audits will be used to fill gaps in health systems, in skills and service provision. Control and management of diseases like malaria, TB and HIV/AIDS, and conditions like hypertension and gestational



Source: Born too Soon: Global Action Report on Pre-term births, WHO 2012; pPROM: Premature Rupture of Membrane.

FIGURE 20.3: Strategies to Prevent Pre-Term Births and Manage Pre-Term Babies

diabetes which are directly related to maternal mortality would be integrated with RCH service delivery.

20.122. AYUSH doctors, wherever feasible, would to be given SBA, RCH and IMNCI training and their services will be used in meeting unmet needs. This will increase the availability of trained human resource for better outreach of child and maternal health services.

Universal Immunisation Coverage

20.123. The goal of ensuring universal coverage of routine immunisation through campaigns in districts throughout the country is now within reach and will be achieved by the end of the Twelfth Plan. Registered Medical Practitioners (RMPs) will be used in this effort, wherever feasible. There is need for expanding the use of available vaccines for various preventable diseases through an evidence based approach. The existing alternate vaccine delivery mechanism through mobile immunisation services for outreach work will be upgraded. Other disease specific recommended strategies will also be adopted; such as, in the case of measles, periodic Supplemental Immunization Activities (SIAs), that is, mass vaccination campaigns aimed at immunising 100 per cent of a predefined population within several days or weeks, introduction of a routine second dose in high prevalence states, laboratory-supported surveillance, and appropriate management of measles cases. Public awareness of the benefits of immunisation will be built, so that they demand the services. Effective implementation of the Mother and Child Tracking system and Mother and Child Protection Card jointly issued by the MoHFW and the MoWCD would be used in capturing immunisation data better. Electricity supply will be ensured, especially at places where cold chains are maintained.

Family Welfare

20.124. The experience of Indonesia and Japan shows that, as compared to limiting methods, emphasis on family spacing methods like IUCD and male condoms has had a better impact in meeting the unmet needs of couples. A recent study has estimated that meeting unmet contraception needs could cut maternal deaths by one-third. There is, therefore, a need for much more attention to spacing methods such as, long term IUCD. IUCD insertion

on fixed days by ANMs (under supervision of LHV for new ANMs) would be encouraged. Availability of MTP by Manual Vacuum Aspiration (MVA) technique and medical abortions will be ensured at fixed points where Mini-Laparotomy is planned to be provided. Services and contraceptive devices would be made easily accessible. This would be achieved through strategies including social marketing, contracting and engaging private providers. Postpartum contraception methods like insertion of IUD which are popular in countries like China, Mexico, and Egypt and male sterilisation would be promoted while ensuring adherence to internationally accepted safety standards.

Communicable Disease Control

20.125. State and District specific action plans will incorporate status and strategies for TB control, with universal and assured access to quality DOTS services. PMDT services will be included in the standards of care and made available in all districts for comprehensively tackling the challenge of drug-resistant TB.

20.126. An increasing incidence of vector borne diseases like malaria, dengue and chikungunya in urban, peri-urban and rural areas because of expanding urbanisation, deficient water and solid waste management has been reported. To control this, the emphasis would be on avoidance of mosquito breeding conditions in homes and workplaces and minimising human–mosquito contact. The spread of zoonotic diseases will also be prevented by strengthening integrated surveillance of transmission between wildlife, close bred veterinary populations and human communities.

20.127. Improved entomological surveillance for source reduction, strengthening and expanding diagnostic services, strengthening case management through standard guidelines, enhanced community participation and inter-sectoral collaboration, enactment and enforcement of civic and building by-laws would be encouraged. Anti-microbial resistance will be closely monitored through effective surveillance, and enforcement of guidelines on the sale and prescription of antibiotics.

20.128. There would also be a thrust on identified geographic areas where the problems are most severe. The strategies employed would be disease management including early case detection and prompt treatment, strengthening of referral services, integrated vector management, use of Long Lasting Insecticidal Nets (LLIN) and larvivorous fishes. Other interventions including behaviour change communication will also be undertaken.

Prevention and Control of Non-Communicable Diseases

20.129. For the escalating threat of NCDs like cardiovascular diseases, diabetes, cancers and chronic respiratory diseases which are emerging as major killers, a package of policy interventions would be taken up. These include raising taxes on tobacco, enforcing bans on tobacco consumption in electronic media, counselling for quitting tobacco, early detection and effective control of high blood pressure and diabetes, screening for common and treatable cancers; and salt reduction in processed foods (Table 20.7).

20.130. Care for the elderly would focus on promoting healthy lifestyles, encouraging care within families, integrating strengths of Indian Systems of Medicine with Modern Systems of Medicine in rejuvenation therapies, and preferential attention in all public facilities.

20.131. Problems relating to mental health, especially in conflict zones would be managed with sensitivity at the community level, through better training of community workers and primary care teams, and through education of care givers.

Focus on Public Health

20.132. Insufficient focus on public health is a major weakness of the system and must be urgently corrected. Effective public health management requires a certain degree of expertise. There is an urgent real need for a dedicated Public Health cadre (with support teams comprising of epidemiologists, entomologists, public health nurses, inspectors and male Multi-Purpose Workers) backed by appropriate regulation at the state level. At present, only Tamil Nadu has a dedicated public health cadre. In other

TABLE 20.7
Interventions to Combat Non-Communicable Diseases (NCDs)

Non-Communicable Disease (NCD)	Interventions
1. Tobacco control	Raise taxes on tobacco Clean indoor air legislation Tobacco advertising ban • Information and labelling • Brief advice to help quit tobacco • Counselling to quit
2. CVD prevention	Salt reduction in processed food via voluntary agreement with industry, and/or via legislation Health education through mass media Treatment for high Blood pressure, cholesterol and education
3. Diabetes and complications	Health education on diet and physical activity Diabetes detection and management in primary health care Intensive glycaemic control Retinopathy screening and photocoagulation Neuropathy screening and preventive foot care
4. Cancer	Screening for cervical, breast and oral cancer Strengthening of cancer therapy in District Hospitals
5. Dental Caries	Education on oral health and hygiene; reducing dietary sugars; water fluoridation
6. General measures	• Promote physical activity in schools and society • Restrict marketing of and access to food products high in salt, sugar or unhealthy fats • Targeted early detection and diagnosis using inexpensive technologies

Note: The list is illustrative only.

States, the erstwhile Public Health cadre has been merged with the regular medical cadre. The choice of having a separate Directorate of Public Health on the lines of Tamil Nadu or incorporating it suitably in the existing set-up will be left to the judgement of States.

20.133. A centrally recruited, professionally trained and constitutionally protected service on the lines of All-India services would be the preferred model for the Public Health Service. A second option would be to have separate public health cadres at Centre and States.

20.134. The Centre and States would develop good quality training programmes for public health functionaries, including the suggested new cadre of public health officers.

20.135. Public health officials should be made responsible for the health of all people residing in their assigned areas or jurisdictions, including migrants. Their responsibilities would, thus, not be limited to only those who visit or use the health facilities, but would require them to actively reach out and impact health outcomes in their respective catchment areas. An implication of such an approach would be that all data generated in the facility would be analysed in terms of the denominator, that is, the total population at risk in the jurisdiction of that facility. Public health officials should also be deployed in Municipal areas to assist the Urban Local Bodies in maintaining public health.

20.136. The National Centre for Disease Control (formerly National Institute of Communicable Diseases) shall function as the apex public health institute for providing surveillance, prevention and control of all diseases of public health importance. The upgradation of NCDC covers physical infrastructure including public health labs and additional trained human resource. It is also proposed that NCDC branches will be opened/strengthened in State Headquarters to provide timely technical assistance to the State health authorities in routine disease surveillance and in addressing epidemic-prone diseases.

20.137. Even though the subject of Public Health falls in the State list, a draft Model Public Health legislation has been prepared by the MoHFW, which could serve as a useful reference for States in framing their own Public Health Acts. The experience of Tamil Nadu in prevention of diseases and promotion of health through a Public Health Cadre, and the regulatory mechanism using Public Health Legislation deserve emulation. Also required are systems to implement those Acts, and mechanisms to motivate and involve the community in ensuring that provisions are complied with. One aspect of community-based monitoring could be to conduct public health audits in States, including in major cities and publicise the results to help build public pressure to improve conditions and bridge capacity gaps where needed. The indicators for such audits could include faecal contamination of water, vector density, food safety and safe disposal of solid and liquid wastes.

20.138. While safety measures at the workplace are necessary for the safety of workers and adjoining residents, and must be enforced, the workplace also presents an opportunity to introduce and practice promotive behaviour, such as a healthy diet and exercise. Ban on consumption of tobacco in public places is a progressive legislation, but it needs effective enforcement. Regular screening of workers for occupational diseases should be introduced. The regulations relating to workplace safety can be enforced more effectively if there is greater coordination between District health and labour authorities.

20.139. Institutions like schools, workplaces and prisons provide opportunities for preventive health check-ups, regular and group exercises, early detection of disease and for dissemination of information on lifestyle choices, yoga, exercise and healthy living. Thus, regular health status and competency check-ups, including laboratory investigations, of children in schools, employees in workplaces and prisoners in jails would be done, with the Government health machinery taking responsibility for public institutions. Age old principles of healthy living and prevention, including those documented in AYUSH texts would be popularised during such health check-ups. Employees and workers will be informed of the ill-effects of sedentary lifestyle, and encouraged to increase physical activity.

20.140. Employees and their families, in large and medium industries of the organised sector can also form an excellent sentinel surveillance system, especially for risk factors of NCDs, incidence of diseases and health care costs as they are linked to organised intra-mural health services or reimbursement systems which maintain regular records. An 'organised sector' surveillance system (such as one involving the Indian Railways network and PSUs) can be established, at relatively low cost and also support work-site based programmes, health promotion and early care seeking.

Behaviour Change Communication

20.141. The state of peoples' health is dependent on living habits that are partly determined by individual behaviour choices. The existing campaigns urging the avoidance of harmful behaviours such as use of tobacco, alcohol and drugs, advocating the use of helmets and seat belts, valuing the girl child, shunning of sex-selective abortions, adoption of the small family norm would be further strengthened. Home-based newborn care, exclusive and continued breastfeeding are time tested and proven strategies to promote child health and survival, and need to be encouraged on a priority basis. Mass media campaigns on mental illness should be launched, to reduce the stigma, promote early care seeking and encourage family members to be supportive and sensitive.

20.142. Electronic (including 'new' media) and print media can play a critical role in informing and empowering communities and individuals on issues relating to health and quality of life. This includes using mobile telephones, multimedia tools as well as Community Radio Stations to achieve this objective. While regulation of the media falls outside the domain of the MoHFW, there is a need to encourage the media to carry messages that make healthy living popular, and to avoid the display of unhealthy behaviour like smoking. Since there are several media—dark areas where the NCD disease burden is increasing, innovative state specific Behaviour

Change Communication strategies would also be required apart from electronic and print media.

20.143. The MoHFW would also champion measures like legislation, regulation and fiscal measures to reduce the exposure of citizens to health risks. An existing agency of the MoHFW, Central Health Education Bureau (CHEB), shall be assigned the responsibility of undertaking and guiding Health Promotion all over the country. In this task, it will use the health promotion Portal for dissemination of information. The CHEB shall involve multi-sectoral actors, conduct health impact assessment and will be developed as the Institute of Health Promotion.

20.144. Teaching self-care to patients and care givers of chronic diseases not only empowers them to manage their condition, but can also make a significant difference to long term health outcomes. NGOs can play a very active role in such campaigns, as the success of BRAC, Bangladesh in reducing infant mortality by promoting use of Oral Rehydration Solution has shown.

INSTRUMENTS FOR SERVICE DELIVERY

Effective Governance Structures

20.145. The broad and flexible governance structure of the National Health Mission would be used to seek willing participation of all sectoral agencies, and civil society in identifying risks and planning for their mitigation, and integrated delivery of quality services. States would be advised to merge the existing governance structures for social sector programmes, such as drinking water and sanitation, ICDS, AIDS control and NRHM at all levels, pool financial and human resource under the leadership of local PRI bodies and make multi-sectoral social plans to collectively address the challenges.

20.146. The existing National Programme Coordination Committee (NPCC) of NRHM will be expanded to serve the National Health Mission. It will be made more representative of all social sectors, sub-sectors within the health sector, and include expertise on monitoring and independent evaluation. The deliberations in this committee will also be made democratic, with an effort to arrive at decisions by consensus. All the four Secretaries of the MoHFW will be on this committee, which can also serve as a forum for coordination within the Ministry.

20.147. Gaps in the management capacity at the state level need to be addressed. States will be encouraged to set up efficiently functioning agencies/cells for procurement and logistics, recruitment and placement of human resource, human resource management, design, construction and upkeep of health care buildings, use of Information Technology, Financial management, transport systems, standards setting and quality control, monitoring and evaluation of process and outcomes. States shall be advised to expand the roles and responsibilities of Medical Officers in charge of public health facilities to cover all determinants of health, with a focus on improving national health outcome indicators. Their territorial jurisdiction should be made co-terminus with the developmental machinery, as Rural Development Blocks.

20.148. States can empower facility managers with more financial and hiring powers so that they can take quick decisions on service related local issues. The Rogi Kalyan Samiti model of facility autonomy launched under NRHM would be expanded to enable investment in facility upkeep and expansion, or even filling temporary HR gaps. Enhanced autonomy would have to be matched by greater accountability for the management of the facility for timely and quality care, and availability of essential drugs. This will also need stringent regulation to ensure that mismanagement of funds, drugs and equipments does not happen.

20.149. In order to promote sound HR management policies across the states, the Central Government would design model management systems incorporating improved methods for recruitment, retention and performance, incentive-based structures, career tracks for professional advancement based on competence. These guidelines could include strategies suggested in Box 20.6.

Accountability for Outcomes

20.150. In order to ensure that plans and pronouncements do not remain on paper, a system of accountability shall be built at all levels, namely Central Government reporting to the Parliament on items which are its business, States reporting on service delivery and system reforms commitments undertaken through the MoU system, district health societies reporting to States, facility managers reporting on health outcomes of those seeking care, and territorial health managers reporting on health outcomes in their area. Accountability shall be matched with authority and delegation; the MoHFW shall frame model accountability guidelines which will suggest a framework for accountability to the local community, requirement for documentation of unit cost of care, transparency in operations and sharing of information with all stakeholders.

Health Delivery Systems

20.151. Trained and competent human capital is the foundation of an effective health system. Without adequate human resources, additional expenditure on health will not lead to additional services and will only bid up wages. In this context it is important for the Twelfth Plan to embark on a clear strategy to expand the supply of appropriately trained health workers to support health care objectives being targeted.

20.152. Effectively functioning health systems depend on human resource, which range from medical, AYUSH and dental graduates and specialists, graduate and auxiliary nurses, pharmacists to other allied health professionals. The production of human resource in health is a time consuming process, taking as long as nine years for a specialist, to eighteen months for an ANM. The current availability of health personnel in the country (Table 20.8) is below the minimum requirement of 250 per lakh of population (*Human Resources for Health: Overcoming the Crisis*, 2004, Joint Learning Initiative, page 23). Given the existing production capacity, we can expect an availability of 354 health workers by 2017. It is generally accepted that the doctor to nurse ratio should be at least 1:3 for the team to perform optimally. This ratio is currently 1:1.6 and is expected to improve to 1:2.4 by end of Twelfth Plan if no new colleges are started. These numbers regarding total availability mask the fact that there is substantial regional variation in the distribution of doctors and nurses, because of which we should plan for a total availability which is significantly higher than the recommended minimum. The basic data on the availability and rate of new additions is summarised in Table 20.8.

20.153. We need to take up a large scale expansion in teaching capacity in this plan so the situation improves towards the end of this plan, and reaches

Box 20.6
Suggested Items in Model HR Guidelines

- Quality standards for facilities should be taken as guiding principle for sanctioning posts, which would indicate the maximum staff that can be posted. In case a facility does not attract expected case-loads, the staff may be rationalised.
- Recruitment should be decentralised with a quicker turnaround time and preference must be given to residents of the region of proposed deployment.
- Fair and transparent system of postings and timely promotions.
- Financial and non-financial incentives (like preferential eligibility for post graduate courses, promotions, subsequent choice of postings, reimbursement of children's school fee) would be suggested to States for adoption, for performance and service in remote areas.
- Measures to reduce professional isolation by preferential access to continuing medical education and skill up-gradation programmes, as well as back-up support on tele-medicine (Internet or mobile based) and by networking of professionals working in similar circumstances.
- Measures to reduce social isolation by investing in processes that bring community and providers closer together.
- Completion of training of ASHAs and retraining of the existing cadre of workers as Male Multi-Purpose Workers, AWW and ANMs, to make them relevant to local needs, and for their own upward mobility.

optimal levels by the end of Thirteenth Plan. If we adopt a goal of 500 health workers per lakh population by the end of Thirteenth Plan, we would need an additional 240 medical colleges, 500 General Nursing and Midwifery (GNM)/nursing colleges and 970 ANMs training institutes. If work on these new teaching institutions begins from the 2013–14 annual plan, and is completed by the end of the Twelfth Plan, the flow of nurses and ANMs would begin within this plan, while doctors from these institutions would be available only from the beginning of the Thirteenth Plan. The ratio of doctors to nurses will then rise from 1:1.6 in 2012 to 1:2.8 in 2017 and reach 1:3 in 2022.

20.154. The projected availability of HR in health during the Twelfth Plan is given in Figure 20.4. A density of 398 workers per lakh would be well achieved by 2017, and 509 by 2021.

Expansion of Teaching Facilities

20.155. The Government shall take the lead role in creating teaching capacity in health, while private sector colleges would also be allowed. Initiatives would be taken to upgrade existing District hospitals and CHCs into knowledge centres, where medical, nursing and para-medical teaching and refresher courses can be held side-by-side with patient care. States shall be encouraged to take this up through the incentive fund of the NHM. The existing state level teaching institutions such as the State Institutes of Health and Family Welfare would also be strengthened. Simultaneously, the existing Government medical colleges and central Government institutions would be strengthened so that the seats could be increased to the maximum level of 250. Efforts to support the existing institutions to create more Post-graduate seats would continue. The long term goal would be to build at least one training centre in

TABLE 20.8
Availability of HR during Eleventh Plan and Projections for Twelfth Plan

Category	Enrolled and Available (2011–12)			Annual Capacity	Expected Availability by 2017		Desirable Density		Colleges Required	Available if Colleges Created	
	Enrolled	Available	Density	Nos.	Total	Density				2017	2021
Physicians	922177	691633	57	42570	848616	65	1111554	85	240	67	85
AYUSH	712121	534091	44	30000	642386	49	640778	49	0	51	54
Dentists	117827	88370	7	24410	193797	15	196157	15	0	16	21
Nurses/ GNM	1238874	743324	61	178339	1508684	115	2223107	170	500	129	170
ANM	603131	361879	30	38290	516090	39	1111554	85	970	60	85
Pharmacist	657230	492923	41	100000	918276	70	915397	70	0	76	95
Total			**241**			**354**		**474**		**398**	**509**
Nurse/ ANM: Doctor Ratio			1.6			2.4		3.0		2.8	3.0

Notes: Density: Per Lakh Population
Current availability based on attrition @ 25 per cent (Physicians, AYUSH, Pharmacists and Dentists), 40 per cent for Nurses and ANM.
Except for New ANM schools all other colleges will be phased as follows: 50 per cent by 2013, 40 per cent by 2014 and 10 per cent by 2015. ANM schools will be phased as follows 50 per cent by 2014 and 50 per cent by 2015.
New colleges have been assumed to have a capacity of 250 (physicians), 100 (AYUSH, Dentist, Nurses/GN, Pharmacist) and 80 (ANM, bi-annual batch of 40).

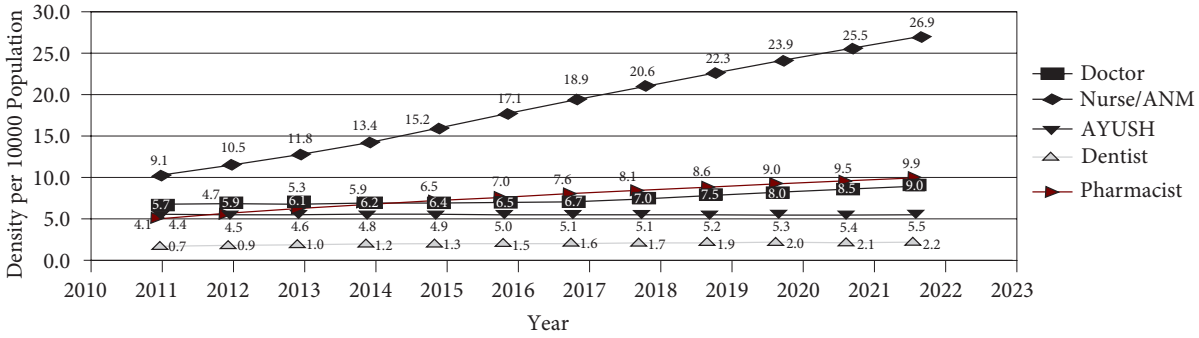


FIGURE 20.4: Projected HRH Capacity Expansion in the Twelfth Plan

each District, and one para-medical training centre in each sub-division block.

20.156. District hospitals which cannot be converted to teaching institutions, can be accredited with the National Board of Examinations for training Post-Graduate candidates in the Diplomate of National Board (DNB) programme, in courses such as Family Medicine. This is a low cost measure which will help increase production of specialists, bring professionalism and also help improve standards of patient care in district hospitals.

20.157. Centres of Excellence for Nursing and Allied Health Sciences also need to be established in every State. These Centres would impart higher education in specialised fields, offer continued professional education and have provisions for faculty development and research. Centres for paramedical education would to be set up in 149 Government medical colleges, in addition to initiating paramedical institutions in 26 States. Initiatives already taken to upgrade and strengthen the existing Nursing Schools into Colleges of Nursing would continue. Establishment of ANM/GNM schools in under-served areas would also be accorded priority. A road-map would be prepared for strengthening of pre-service, mid-wifery training and career development.

20.158. In the Pharmacy sector, strengthening and up-gradation of Pharmacy Colleges and setting up of Colleges of pharmacy attached to Government medical colleges would be initiated, wherever possible.

20.159. There are other categories of skilled health-workers, such as Physician assistants, who increase the productivity of the medical team, and should be encouraged. In the context of hospitals, a survey by FICCI in June 2011 has identified five skill-sets that need immediate attention, namely Dialysis Technician, Operation Theatre/Anaesthesia Technician, Paramedic, Lab Technician, Patient Care Coordinator cum Medical Transcriptionist. The profession of midwifery will be revived, and provided training and legal authority to serve as autonomous medical practitioners for primary maternity care, such as in the Netherlands, so that skilled birth attendance is universalised. The proposed District knowledge Centres would create sufficient teaching capacity for such newer categories of health workers.

20.160. A peculiar feature of India's healthcare system is the presence of a large number of non-qualified practitioners, such as traditional birth attendants (dais), compounders and RMPs. As per law, they are neither authorised to practice Medicine, nor to prescribe drugs. Nonetheless, they work everywhere in the country and address a huge unfulfilled demand for ambulatory care, particularly in rural areas. The challenge is to get them into the formal system. The plan recommends giving these practitioners, depending on their qualifications and experience, an opportunity to get trained and integrate them into the health work-force in suitable capacities by mutual consent.

20.161. Another opportunity lies in utilising the services of AYUSH graduates for providing primary

care. There are two pre-requisites before this can be done—first by amendment of the legal framework to authorise the practice of modern medicine for primary care by practitioners of Indian Systems of Medicine; and secondly by supplementing skills of AYUSH graduates by imparting training in modern Medicine through bridge courses. High professional standards of eligibility for, and qualifying in the bridge courses should be laid down so that the quality of such primary care integrated physicians remains high. States like Tamil Nadu and recently Maharashtra have shown the lead in this regard. Associations of allopathic practitioners are generally opposed to AYUSH practitioners being allowed to prescribe allopathic medicines; they will have to be persuaded to yield in the national interest of serving the masses, particularly the rural population and the urban poor. Suitably trained, AYUSH graduates can provide primary health care, and help fill in the human resource gaps in rural areas.

20.162. The NHM will encourage the States to modify the designation and job profiles of human resource created under various central and externally funded programmes into generic, multi-functional categories whose services can be used as per local need.

Community Participation and PRI Involvement

20.163. Government health facilities at the level of blocks and below can become more responsive to population needs if funds are devolved to the Panchayati Raj Institutions (Village Council or its equivalent in the Scheduled Areas), and these institutions made responsible for improving public health outcomes in their area. States should formalise the roles and authority of Local Self-Government bodies in securing convergence so that these bodies become stakeholders for sustainable improvements in health standards. The States would be advised to make Village Health, Sanitation and Nutrition Committees as the guiding and operational arms of the Panchayats in advancing the social agenda.

20.164. Health Action Plan for service delivery, systems management and prevention would be formulated through effective public participation to ensure relevance to local needs and to enable enhanced accountability and public oversight.

20.165. Greater efforts at community involvement in planning, delivery, monitoring and evaluation of health services would be made using established strategies from NRHM like community based monitoring, citizens' charters, patients' rights, social audits, public hearings and grievance redressal mechanisms. Newly elected members of PRIs, especially women members, need support as they grow into their new roles. NGOs have an important role in strengthening capacity. An integrated curriculum will be drawn up to facilitate this process. NGOs can play a key role in providing support to VHSNCs and PRIs in capacity building, planning for convergent service delivery and more effective community based monitoring. Recognition and instituting awards for achievers along the lines of Nirmal Gram Puraskar under the Total Sanitation Campaign will be one way of incentivisation.

Strengthening Health Systems

20.166. A major objective of enhanced funding, flexibility to and incentivisation of States is to build health systems. Some of the components of health systems strengthening for which States shall be encouraged are listed in Table 20.9.

NATIONAL AIDS CONTROL ORGANISATION

20.167. The programme strategy would be two-pronged: intensification of interventions for high risk groups and bridge populations, and integration of prevention (including mother to child transmission), testing, counselling and treatment services among the general population, including pregnant women, with the routine RCH programme. To achieve mainstreaming of services, the State AIDS Control Societies and District AIDS Prevention and Control Unit (DAPCU) will be integrated into the National Health Mission structure at these levels. To build a multi-dimensional reporting system, the information systems on health systems, and AIDS control shall be synergised.

TABLE 20.9
Illustrative List of Health Systems Strengthening in States

Health System Elements	Suggested Health System Strengthening Activities by States
1. Effective Public Health Administration	Enact and Enforce Public Health Act Put in place a *Public Health cadre*, whose members shall be responsible for detecting public health problems within their jurisdiction, framing strategy for its correction and implementing it Develop and deploy a *Health Management Cadre*, for providing management support to public health programmes and hospital administration Mandatory practice of Clinical Treatment Guidelines and prescription of generic medicines listed in the National List of Essential Medicines in all Government facilities Mandatory test audit of medical prescriptions by faculty of medical colleges Improve governance through stronger oversight mechanisms that include citizen participation, social audit and greater transparency Develop an effective and responsive grievance redress system Frame policies for, and provide services so as to achieve the goals of the National Population Policy (2000).
2. Health Financing	Increased expenditure on Health Sector Prioritise strengthening of Primary Health Care in state budgets
3. Health Regulation	Extend and enforce Central Clinical Establishment Act Empower Public Health functionaries under relevant laws namely Pre-conception and Pre-natal Diagnostic Techniques Act, Food Safety Standard Act, and Drugs and Cosmetics Acts
4. Develop Human Resource for Health	Develop District Hospitals and Community Health Centres (CHCs) into Medical and para-medical training institutions with improved quality of training Organise bridge Courses for AYUSH graduates and legally empower them to practice as Primary Health care physicians Encourage career progression of ASHA and AWW into ANM, and assure career tracks for competency-based professional advancement of nurses
5. Health Information Systems	Build a Health Information System by networking of all health service providers, establishing state level disease surveillance systems, universal registration of births and deaths to give accurate picture of health of the population
6. Convergence and Stewardship	Assess Health impact of policies and activities of departments other than health Main-streaming of AYUSH into NHM Main-streaming of STI and HIV prevention and treatment up to district levels into NHM Main-streaming of all disease control programmes into NHM Empower Panchayats with funds, functions and functionaries to play a meaningful role in bringing convergence in the social sector Achieve inter-sectoral coordination at Block, District and State levels by using the mission structure of NHM Create and support systems for grievance redressal Synergise the working of ASHA and AWW by declaring AWC as the convergence station for all village level NHM and ICDS personnel, and Sub-centre as the HQ of ICDS supervisors Ensure that only double fortified salt (Iron-Iodine) is used in ICDS Scheme, Mid-Day Meal and sold through Public Distribution System
7. Health Services	Master plan for ensuring each district is able to provide assured set of services to all its residents Road-map for achieving Indian Public Health Standards at all facilities Public health care facilities are provided financial and administrative autonomy Develop an effective grievance redress system
8. Ensure access to Medicines, Vaccines and Diagnostics	Create a Special Purpose Vehicle to procure, store and distribute medicines, vaccines and diagnostics through an open, tender based procurement Mandate availability of drugs under the National List of Essential Medicines in all health facilities Strengthen state level drug regulation Ensure Jan Aushadhi stores in all Block Headquarters

20.168. The primary goal of NACP during Twelfth Plan will be to accelerate the process of reversal and further strengthen the epidemic response in India through a well-defined, integration process. The programme will be further strengthened and programme management capacities decentralised to state and district levels. NACP-IV will remain a prevention oriented plan with adequate coverage of HIV care in the context of the concentrated epidemic situation in India. NACP will integrate with other national programmes and align with the overall Twelfth Five Year Plan goals of inclusive growth and development. The key priorities of NACP-IV will be as follows.

- Preventing new infections by sustaining the reach of current interventions and effectively addressing emerging epidemics.
- Preventing Patent-to-Child Transmission
- Focusing on IEC strategies for behaviour change, demand-generation for HIV services among those at risk and awareness among general population
- Providing comprehensive care, support and treatment to people with infection
- Reducing stigma and discrimination through greater involvement of HIV affected persons
- Ensuring effective use of strategic information at all levels
- Building capacities of NGO and civil society partners, especially in states of emerging epidemics
- Integrating HIV services with the health system in a phased manner
- Mainstreaming HIV/AIDS activities with all key central and state level Ministries/departments and leveraging resources of the respective departments
- Leveraging social protection and insurance mechanisms

STRATEGIES FOR NACP-IV

1. Intensifying and consolidating prevention services with a focus on (*i*) high-risk groups and vulnerable population and (*ii*) general population;
2. Expanding IEC services for (*i*) general population and (*ii*) high-risk groups with a focus on behaviour change and demand generation;
3. Increasing access and promoting comprehensive care, support and treatment;
4. Building capacities at national stage, district and facility levels and
5. Strengthening Strategic Information Management Systems

INDIAN SYSTEMS OF MEDICINE AND HOMOEOPATHY SERVICES (AYUSH)

20.169. Practice and promotion of AYUSH in the States would be carried out under the broad umbrella of the National Health Mission. A revamped National Programme Coordination Committee of the National Health Mission with Secretaries of all the departments under the MoHFW as members would provide the funding and programme guidance for convergence and main-streaming of AYUSH in the health care system.

20.170. States would be encouraged to integrate AYUSH facilities, and provide AYUSH services in all facilities offering treatment in modern systems of medicine. The goal is to ensure that all Government health care facilities offer suitable AYUSH services as per laid down standards.

20.171. In addition, the concept of AYUSH Gram will be promoted, wherein one village per block will be selected for implementation of integrated primary care protocols of AYUSH and modern system of medicine. In these villages, herbal medicinal gardens will be supported, regular Yoga camps will be organised, preferably through PRI institutions and youth clubs, and the community provided basic knowledge on hygiene, promotion of health and prevention of diseases.

STRENGTHENING AYUSH

20.172. The strengths of Indian Systems of Medicine and Homoeopathy, if suitably used, can help advance the goals of the Twelfth Plan. AYUSH systems would be main-streamed using their areas of strengths namely in preventive and promotive health care, diseases and health conditions relating to women and children, older persons, NCDs, mental ailments, stress management, palliative care, rehabilitation and health promotion.

20.173. Every element of health system strengthening and development, particularly use of IT, is equally applicable to AYUSH systems and would be pursued. What follows are additional measures tailored to unique opportunities and requirements of AYUSH systems.

RESEARCH

20.174. The National Health Policy of 2002 set an objective, which involved a re-orientation and prioritisation of research to validate AYUSH therapies and drugs that address chronic and life style-related emerging diseases. Cross-disciplinary research and practice requires standardisation of terminologies of classical therapies, and development of Standard and Integrated Treatment Protocols. These would be developed based on core competencies and inherent strengths of each system, and comparative efficacy studies. National Health Programmes shall use such composite protocols.

20.175. To take this ambitious research agenda forward, all five Research Councils of AYUSH will pool resources, particularly human resource, clinical facilities and information, to avoid duplication. For this to happen on an institutionalised basis, a common governance structure for the five Research Councils would be put in place.

20.176. The documentation of traditional knowledge associated with medicinal plants is very important not only to preserve it for posterity but also to contest bio-piracy and bio-prospecting. This will be continued.

HUMAN RESOURCES DEVELOPMENT

20.177. Cross-disciplinary learning between modern and AYUSH systems at the post-graduate level would be encouraged. Details of modification in syllabi that would be required at the undergraduate level, in order to make such cross-disciplinary learning possible, would be worked out by a team of experts from the different Professional Councils. Collaboration between AYUSH teaching colleges and with medical colleges for mutual learning would be encouraged. AYUSH Chairs in Medical Colleges of the country would be encouraged to provide the necessary technical expertise to jointly take up research, teaching and patient care. Orientation of medical students and doctors about basic concepts, applications and scientific developments of AYUSH in order to dispel ignorance and foster cross-system referral would be encouraged. Relevant AYUSH modules would therefore be incorporated into medical, nursing and pharmacy course curricula and in the CME programme for medical practitioners.

PRACTICE AND PROMOTION OF AYUSH

20.178. The Department of AYUSH would develop standards for facilities at the primary, secondary and tertiary levels as a part of IPHS; Standard Treatment Guidelines and a Model Drugs List of AYUSH drugs for community health workers will be developed. All primary, secondary and tertiary care institutions under the MoHFW, State Health Departments and other Ministries like Railways, Labour, Home Affairs and so on, would create facilities to provide AYUSH services of appropriate standards.

20.179. As longevity increases, geriatrics as a discipline would need greater attention. AYUSH therapies have strengths in restoration and rejuvenation. To bring together the best of care for the elderly that AYUSH systems have to offer, and to develop it further using modern scientific methods, a National Institute on Geriatrics (through AYUSH) will be set up.

20.180. In view of the growing incidence of metabolic and lifestyle diseases like diabetes and hypertension and considering the strengths of AYUSH systems in their prevention and treatment, a National Institute on Metabolic and Lifestyle Diseases will be established.

20.181. In view of the growing problem of drug abuse, and increase in use of tobacco, and the potential of AYUSH therapies and practices, particularly of Yoga, for disease prevention and health promotion, a National Institute for Drug and Tobacco De-addiction will be established. Each of the three national institutes would be equipped with post-graduate education and research facilities and house advanced hospital facilities in all disciplines of

medicine. These institutes would conduct and promote interdisciplinary research in their area, advance frontiers of knowledge on prevention and condition management, teach and promote evidence-based use of AYUSH systems, and are expected to emerge over time as global centres of research, care and education.

Regulation and Quality Control

20.182. Systems for quality certification of raw materials, accreditation of educational programmes, health services and manufacturing units and products would be promoted in the Twelfth Plan. This would achieve both minimum standards through regulations and laws, as well as, excellence through a voluntary scheme of accreditation. The existing practice of a common legislation, and regulatory systems for AYUSH and modern medicines would be further strengthened, with mandated representation of AYUSH experts at all levels. Modernisation of pharmaceutical technology, in order to standardise the use of natural resources and production processes that are used by AYUSH, will be taken up as a priority in the Twelfth Plan period.

HEALTH RESEARCH

20.183. Given the lag in progress on health indicators in the country, need for accelerated progress and optimal use of limited resources, DHR should strategically move in a direction which brings forth actionable evidence in a time bound manner for quick translation to address national health needs. In setting its priority areas, DHR would be guided by the disease profile in the country, burden of disease, and the possibility of cost-effective intervention.

20.184. The strategy for health research in the Twelfth Plan would be the following:

20.185. *Address national health priorities*: The key outcome of the efforts of DHR would be to generate intellectual capital, which may have a public health impact. DHR would, therefore, prioritise its research to find cost-effective solutions for health priorities and health system issues facing the country, namely:

1. Maternal and child nutrition, health and survival;
2. High fertility in parts of the country;
3. Low child sex ratio and discrimination against the girl child;
4. Prevention, early detection, treatment, rehabilitation to reduce burden of diseases—communicable, non-communicable (including mental illnesses) and injuries (especially road traffic related), congenital malformation and disorders of sex development;
5. Sustainable health financing aimed at reducing household's out-of-pocket expenditure;
6. HIS covering universal vital registration, community based monitoring, disease surveillance and hospital based information systems for prevention, treatment and teaching;
7. Measures to address social determinants of health and inequity, particularly among marginalised populations;
8. Suggest and regularly update Standard Treatment Guidelines which are both necessary and cost-effective for wider adoption;
9. Public Health systems and their strengthening; and
10. Health regulation, particularly on ethical issues in research.

20.186. Existing institutes of ICMR will be re-organised, strengthened and new centres set up in deficit areas to achieve the above listed goals.

20.187. *Build Research Coordination Framework*: Though DHR is the empowered Department on medical and health research, many organisations are engaged in research on related topics, namely the Ministry of Environment and Forest, Departments of Health and Family Welfare, AYUSH, AIDS control, Space, Science and Technology, Biotechnology, Agricultural Research; agencies like ICAR, DSIR, CSIR, NDMA, DRDO and the National Knowledge Network. DHR would play a lead role in research involving human health, bringing all the concerned organisations on one platform to facilitate mutual discussion, resource pooling and prioritisation, and avoid duplication, to find innovative solutions to national priorities in a timely manner. It would also take the lead in suggesting institutional structures, like mutual representation in each others' decision-making and scientific bodies, and 'coordinating

structures' so that consultation and collaboration become a norm rather than an exception. Efficient mechanisms for selection, promotion, development, assessment and evaluation of affordable technologies would be established. DHR would bring together basic, translational and clinical investigators, networks, professional societies and industry to facilitate development of programmes and research projects. DHR would establish a mechanism for coordination between academia and the industry, with a preference for multidisciplinary approaches.

20.188. To address the need for operations research on impediments in delivery of services, DHR will explore the possibility of stationing multi-disciplinary research teams within the NHM structure at different levels, so that practical, relevant and area specific solutions to problems are suggested to programme managers. To address the gaps in critical areas such as Health Information Systems, National Health Accounts and Public Health delivery DHR will dedicate national centres to these needs, and position specialised teams alongside operational managers.

20.189. *Autonomy coupled with accountability in research*: The elements of an efficient research system are clear enunciation of goals, sufficient resources with flexibility to raise extra-budgetary funds, functional autonomy, accountability and incentives for performance. DHR would work to observe these principles in its research institutes so that each one of them develops into a centre of excellence in its allotted field.

20.190. *Efficient research governance, regulatory and evaluation framework*: DHR would also put in place appropriate regulations, guidelines, authorities and structures to strengthen ethics-based research governance and to protect the interests of research subjects especially, in clinical trials. DHR would prepare guidelines on, among others, Stem Cell Research and Therapy, Assisted Reproductive Technologies incorporating rights of egg donors; Ethical Guidelines for Biomedical Research involving human subjects, Ethical Guidelines for Conducting Research on Mental Illness or Cognitive Impairment, Compensation to Participants for Research Related Injury in India and Bio-banking. DHR would also develop mechanisms to evaluate health research undertaken by various scientific departments including ICMR. DHR would put in place mechanisms for benchmarking and accreditation of health research institutions. The criteria for accreditation of research institutes would be based on the intellectual capital generated and its public health impact.

20.191. *Nurture development of research centres and labs*: In addition to the development of centres in deficit and strategic areas, DHR would identify and fund the development of existing medical colleges and research centres into specialised subject areas, which may become capable of conducting cross-cutting, multidisciplinary and translational researches. Similarly, DHR would fund up-gradations of existing Government labs to increase the capacity for diagnosis of viral and other infectious diseases at the national, regional and District levels. A national list of diagnostic facilities shall be centrally maintained to help guide decisions on creation of and up gradation of laboratory facilities. DHR would also build capacity of States and other institutions on the periphery for solving various clinical and public health problems.

20.192. *Utilise available research capacity by promoting extra-mural research*: Extramural programmes, under which grants are competitively awarded on selected topics, would be expanded to help tap talent in medical colleges, tertiary hospitals, health universities and public health institutions. DHR would aim to increase the share of extramural funding in its research budget from the current 33 per cent to 50 per cent by the end of Twelfth Plan. It may also commission 'problem-solving research', following the Open Source Drug Discovery model of CSIR, but would need to subject it to strict scrutiny for outcomes. Translational Research would be promoted so that research findings can be translated into better health status in the country.

20.193. *Human Resource Development*: Investments would be made in producing qualified researchers, by improving career opportunities for young researchers and providing good initial support in

the form of start-up grants. Additionally, fellowships for training researchers in identified advanced fields, scholarships at the PG level, Young Researcher Programmes to encourage young students, mid-career research fellowships for faculty development at medical colleges are some ways to ensure a steady flow of committed researchers. DHR will explore, in consultation with concerned regulatory authorities, the possibility of introducing a stream of research professionals in medical colleges who would have avenues for professional advancement equal to those of teaching faculty. DHR will utilise the potential of Information Technology to standardise research methodology courses, and train students in academic institutions through distance learning.

20.194. *Cost-effectiveness studies to frame Clinical Treatment Guidelines*: On the lines of the UK's National Institute of Clinical Excellence (NICE), DHR would develop expertise to assess available therapies and technologies for their cost-effectiveness and essentiality, and formulate and update, on a regular basis, the Standard Treatment Guidelines, and suggest inclusion of new drugs and vaccines into the public health system. The formulation of the Guidelines must, of course, incorporate the best available evidence, including in AYUSH systems, and prevalence of anti-microbial drug-resistance in order to suggest treatment protocols for regular clinical practice. Standard Treatment Guidelines developed by Army Medical Corps can also be referred to. The justification for housing the proposed institute outside the Department of Health, but within the Ministry, is to provide it an element of objectivity and independence from practitioners, and to avoid conflict of interest.

CONVERGENCE ACROSS SECTORS FOR BETTER OUTCOMES

20.195. The impact of policies and programmes of non-health sectors on health remains invisible for long periods. It is, therefore, necessary to take proactive steps to determine the health impact of existing and new policies in sectors which have a bearing on the health of population. The MoHFW would constitute a dedicated 'Health Impact Cell' to conduct such an analysis, and its views would be taken into consideration before framing or modifying policies of non-health Ministries which can potentially impact public health. The proposed 'Health Impact Cell' in the MoHFW would also perform Monitoring and Surveillance functions in order to continuously gather information on health impacts of policies and programmes of key non-health Departments. It can harmonise the programme data obtained from the sectors/non-health Ministries with the health impact reports received from the field, such as on water and sanitation related disease outbreaks, and determine gaps in policies as well as in programme implementation. Various sectors would share data, particularly those that are relevant to health outcomes, with the proposed cell. The proposed cell would also be equipped to serve early warnings and coordinate responses to health related emergencies and natural disasters.

CONVERGENT ACTION ON NUTRITION

20.196. The Ministry of health would build institutional arrangements with the Ministry of Women and Child development so that convergent delivery of services under ICDS becomes the norm. A national policy on promoting healthy diets, and regulating extent of salts, and trans fats in foods is required. Double fortification of salt with iron and iodine presents a cost-effective and feasible strategy to prevent two of the key nutritional deficiencies in our country. While the Food and Nutrition Board under the Ministry of Women and Child Development is expected to take the lead, all health workers would be sensitised so that they are able to disseminate knowledge on nutrition and healthy living.

ANGANWADI CENTRE AS THE CONVERGENCE HUB

20.197. Nutritional issues call for multi-stakeholder strategies, including informing communities on how to maximise nutritional benefits from locally available foods, food fortification and micro-nutrient supplementation. States shall be encouraged through the sector-wide MoUs to observe Village Health and Nutrition Days in complete convergence mode (Box 20.7) and ensure that Anganwadi Centres become the hub for all health related services.

Box 20.7
Convergence: Village Health and Nutrition Day in North Tripura

The Village Health and Nutrition Day (VHND) organised in North Tripura district in a complete convergence mode secured it the Prime Minister's award for excellence in Public administration for 2010–11.

A monthly VHND is to be organised in every village through inter-sectoral convergence and community involvement with the Anganwadi Centre as the hub for service provision. It is an effective platform for providing first-contact primary health care. The Village Health, Sanitation and Nutrition Committees are expected to be the organiser with participation of ASHA, ANM, AWW and the PRI representatives.

As per *NRHM guidelines*, the services to be provided on VHND include registration of all pregnant women, Ante-Natal Checkup, Vitamin A administration and vaccination of all eligible children, weighing of children, plotting of weights on cards and suitable management, administration of drugs to TB patients, provision of contraceptives (condoms and oral) to all eligible couples as per their choice, supplementary nutrition to underweight children, community awareness generation, identification of cases needing special attention.

Special and *additional features* in North Tripura were the following:

- Organisation of a health mela in a transparent and participative manner; extensive publicity through sign-boards and in-person contact for the event
- Pooling of funds from different departments, and clear delineation of roles
- Leadership role of headmasters of schools in training and health education
- Convergence of service providers of health, ICDS, rural development, panchayat, drinking water,, district disability rehabilitation centre, education and adult literacy
- Additional services provided include disability certificates, wheel chairs to the disabled, medicines and water purification tablets. doctor's consultation, testing of eye, dental and for HIV, Strong cultural orientation to the event by including local songs, dances, drama, quizzes, sports events, healthy baby shows
- The mid-day meal and ICDS were served together; with a community meal
- Intense training of functionaries
- Effective monitoring, record keeping and display of data on web site

Outcomes: A quantum jump in detection of cases of various diseases and health problems, fewer deaths due to fever, malaria, diarrhoea, lowering of MMR and IMR while immunisation coverage improved, identification of malnourished children, initiation of their treatment and periodical monitoring.

Lesson: Effectively organised VHSND can lead to awareness in the community on health issues, effective utilisation of services on health, and its determinants.

MAIN-STREAMING DISASTER MANAGEMENT

20.198. The Ministry of Health shall in its policies and programmes give due consideration to the elements of disaster management, namely Mitigation, Preparedness, Response and Recovery. At all stages of disaster management, active engagement of local communities shall be the ensured.

CONVERGENCE WITHIN DEPARTMENTS OF MINISTRY OF HEALTH

20.199. Given the fact that many health conditions often co-exist and exacerbate each other with poor nutritional status as the underlying factor, therapies under different systems of medicine can synergistically improve health status, and need for evidence based decision making and practice, all the four departments of health which are engaged in their allocated domains can act synergistically to address the key national health needs. A coordinated delivery of national programmes at the grass-root level can increase outreach and help better manage programmes. Frontline health workers, and Government health facilities for primary care can be developed as single points of contact for all local residents in meeting their entire range of health care needs.

CONCLUSION

20.200. The Twelfth Plan faces a colossal task of putting in place a basic architecture for health security for the nation. It must build on what has been achieved through the NRHM and expand it into a comprehensive NHM. Since the primary responsibility for health care rests with the States, the strategy needs to effectively incentivise State Governments to do what is needed to improve the public health care system while regulating the private health care system, so that together they can work towards addressing the management of delivery of preventive, promotive, curative and rehabilitatory health interventions. This is not a task that can be completed within one Plan period. It will certainly span two or three Plan periods, to put the basic health infrastructure in place.