The Health Care Services Organization in the country extends from the national level to village level.

Central level
The organization at the national level consists of the Union Ministry of Health and Family Welfare. The Ministry has three departments, viz. - Department of Health & Family Welfare, Department of Ayurveda, Yoga-Naturopathy, Unani, Sidha & Homeopathy (AYUSH) and Department of Health Research. Each of these departments is headed by respective secretaries to Govt of India. The department of Health & Family Welfare is supported by a technical wing, the Directorate General of Health Services, headed by Director General of Health Services (DGHS).

State level
The organization at State level is under the State Department of Health and Family Welfare in each State headed by Minister and with a Secretariat under the charge of Secretary/Commissioner (Health and Family Welfare). The State Directorate of Health Services, as the technical wing, is an attached office of the State Department of Health and Family Welfare and is headed by a Director of Health Services. The area of medical education which is with the Directorate of Health Services at the State, is known as Directorate of Medical Education and Research. This Directorate is under the charge of Director of Medical Education, who is answerable directly to the Health Secretary/Commissioner of the State. Some states have created the posts of Director (Ayurveda) and Director (Homeopathy). These officers enjoy a larger autonomy, although sometimes they still fall under the Directorate of Health Services of the State.

Regional level
In some states like Bihar, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Karnataka and others, zonal or regional or divisional set-ups have been created between the State Directorate of Health Services and District Health Administration. Each regional/zonal set-up covers three to five districts and acts under authority delegated by the State Directorate of Health Services.

District level
All health care programmes in a district are placed under a unified control. It is a link between the State/ regional structure on one side and the peripheral level structures such as PHC/ sub-centre on the other side. The district officer with the overall control is designated as the Chief Medical and Health Officer (CM & HO) or as the District Medical and Health Officer (DM & HO). These officers are popularly known as DMOs or CMOs, and are overall in-charge of the health and family welfare programmes in the district. These DMOs/CMOs are assisted by Dy. CMOs and programme officers.

Community level
For a successful primary health care programme, effective referral support is to be provided. For this purpose one Community Health Centre (CHC) has been established for every 80,000 to 1,20,000 population, and this centre provides the basic specialty services in general medicine, pediatrics, surgery, obstetrics and gynecology.

Community Health Centres (CHCs)
CHCs are being established and maintained by the State Government. It is manned by four medical specialists i.e. Surgeon, Physician, Gynecologist and Pediatrician supported by 21 paramedical and other staff. It has 30 in-door beds with one OT, Xray, Labour Room and Laboratory facilities. It serves as a referral centre for 4 PHCs and also provides facilities for obstetric care and specialist consultations. As on March, 2007, there are 4,045 CHCs functioning in the country. The present staffing pattern of CHCs is as in Box - 1.

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Committee in 1946 gave the concept of a PHC as a basic health unit to provide as close to the people as possible, an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care. The health planners in India have visualized the PHC and its Sub-Centres (SCs) as the proper infrastructure to provide health services to the rural population. The central Council of Health at its first meeting held in January 1953 had recommended the establishment of PHCs in Community Development Blocks. These centres were functioning as peripheral health service institutions with little or no community involvement. They were not able to provide adequate health coverage, partly, because they were poorly staffed and equipped and lacked basic amenities. The 6th Five year Plan (1983-88) proposed reorganization of PHCs on the basis of one PHC for every 30,000 rural population in the plains and one PHC for every 20,000 population in hilly, tribal and backward areas for more effective coverage.

PHC is the first contact point between village community and the Medical Officer. The PHCs were envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on curative, preventive, Family Welfare Services and promotive aspects of health care. One Primary Health Centre covers about 30,000 (20,000 in hilly, desert and difficult terrains) or more population. Many rural dispensaries have been upgraded to create these PHCs. At present, a PHC is manned by a Medical Officer supported by 14 paramedical and other staff. It acts as a referral unit for 6 sub-centres and refer out cases to Community Health Centres (CHCs-30 bedded hospital)/sub-district/district hospitals. It has 4-6 indoor beds for patients. There are 22, 370 PHCs functioning as on March 2007 in the country. The staffing pattern of new primary health centre is shown in Box - 2.

Box - 2: Staffing Primary Health Centre

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Staff for New Primary Health Centre</th>
<th>Existing</th>
<th>IPHS proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Medical Officer</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Pharmacist</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Nurse Midwife (Staff Nurse)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Health Worker (Female)/ANM</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Health Educator</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Health Assistant (Male)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Health Assistant Female/LHV</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>Upper Division Clerk</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>Lower Division Clerk</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Laboratory Technician</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>Driver (Subject to availability of Vehicle)</td>
<td>1</td>
<td>*</td>
</tr>
<tr>
<td>12.</td>
<td>Class IV</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>15</td>
<td>17/18</td>
</tr>
</tbody>
</table>

*Optional / vehicle may be outsourced

Sub-Centre

The Sub-Centre is the most peripheral and first contact point between the primary health care system and the community. Sub-Centres are assigned tasks relating to interpersonal communication in order to bring about behavioral change and provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoea control and control of communicable diseases programmes. The Sub-Centres are provided with basic drugs for minor ailments needed for taking care of essential health needs of men, women and children. There are 1,45,272 Sub Centres functioning in the country as on March 2007. Currently a Sub-centre is staffed by one Female Health Worker commonly known as Auxiliary Nurse Midwife (ANM) and one Male Health Worker commonly known as Multi Purpose Worker (Male). One Health Assistant (Female) commonly known as Lady Health Visitor (LHV) and one Health Assistant (Male) located at the PHC level are entrusted with the task of supervision of all the Sub-centres (generally six subcentres) under a PHC. The Ministry of Health & FW, GOI provides assistance to all the Sub-centres in the country since April 2002 in the form of salary of ANMs and LHVs, rent (if located in a rented building) and contingency, in addition to drugs and equipment kits. The salary of Male Health Worker is borne by the State Governments. The staffing pattern of sub-centre is depicted in Box - 3.

Box - 3: Staffing Sub centre

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Staff For Sub-Centre</th>
<th>Existing</th>
<th>IPHS proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Health Worker(Female)/ANM</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Health Worker (Male)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Voluntary Worker (optional on honorarium)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2/3</td>
<td>3/4</td>
</tr>
</tbody>
</table>

The shortfall in the rural health infrastructure, based on 2001 population census, has been depicted in Box - 4.

Box - 4: Shortfall in Rural Health Infrastructure All India

<table>
<thead>
<tr>
<th>As per 2001 Population</th>
<th>Required</th>
<th>Existing (as on 31 Mar 2007)</th>
<th>Shortfall</th>
<th>% Shortfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Centres</td>
<td>158792</td>
<td>145272</td>
<td>20855</td>
<td>13.13</td>
</tr>
<tr>
<td>PHCs</td>
<td>26022</td>
<td>22270</td>
<td>4833</td>
<td>18.57</td>
</tr>
<tr>
<td>CHCs</td>
<td>6491</td>
<td>4045</td>
<td>2525</td>
<td>38.90</td>
</tr>
</tbody>
</table>

Note: All India shortfall is derived by adding state-wise figures of shortfall ignoring the existing surplus in some of the states.

The overall objective of IPHS is to provide health care that is quality oriented and sensitive to the needs of the community. In order to provide optimal level of quality health care, a set of standards are being recommended for Community Health Standards (IPHS).
Centre /Primary Health Centre/sub centre. The IPHS for Primary Health Centres has been prepared keeping in view the resources available with respect to functional requirement for Primary Health Centre with minimum standards such as building manpower, instruments, and equipments, drugs and other facilities etc. These standards would help monitor and improve the functioning of the PHCs. The objectives of IPHS for PHCs are:

i. To provide comprehensive primary health care to the community through the Primary Health Centres.

ii. To achieve and maintain an acceptable standard of quality of care.

iii. To make the services more responsive and sensitive to the needs of the community.

Minimum Requirements at the Primary Health Centre for meeting the IPHS:

1. Medical care:
   (a) OPD services : 4 hours in the morning and 2 hours in the afternoon / evening. Minimum OPD attendance should be 40 patients per doctor per day.
   (b) 24 hours emergency services : Appropriate management of injuries and accident, First Aid, Dog bite/snake bite/scorpion bite cases, and other emergency conditions
   (c) Referral services
   (d) In-patient services (6 beds)

2. Maternal and Child Health Care including family planning:
   a) Antenatal care : Early registration of all pregnancies and minimum 3 antenatal checkups with minimum laboratory investigations.
   b) Intra-natal care : (24-hour delivery services both normal and assisted) Promotion of institutional deliveries, appropriate and prompt referral for cases needing specialist care.
   c) Postnatal Care : Two postpartum home visits, first within 48 hours of delivery, 2nd within 7 days through Sub-centre staff, essential new born care, provision of facilities under Janani Suraksha Yojana (JSY).
   d) New Born care
   e) Care of the child : Emergency care of sick children including Integrated Management of Neonatal and Childhood Illness (IMNCH), full Immunization of all infants and children against vaccine preventable diseases, Vitamin A prophylaxis to the children.

3. Medical Termination of Pregnancies using Manual Vacuum Aspiration (MVA) technique. (wherever trained personnel and facility exists)

4. Management of Reproductive Tract Infections / Sexually Transmitted Infections

5. Nutrition Services (coordinated with ICDS)

6. School Health : Regular check ups, appropriate treatment including deworming, referral and follow-ups.


8. Promotion of Safe Drinking Water and Basic Sanitation

9. Prevention and control of locally endemic diseases like malaria, Kalaazar, Japanese Encephalitis, etc.

10. Disease Surveillance and Control of Epidemics : Disinfection of water sources and Promotion of sanitation.

11. Collection and reporting of vital events

12. Education about health / Behaviour Change Communication (BCC)

13. National Health Programmes including Reproductive and Child Health Programme (RCH), HIV/AIDS control programme, Non communicable disease control programme, Revised National Tuberculosis Control Programme (RNTCP)


15. Training : Training of Health workers and traditional birth attendants; Initial and periodic training of paramedics in treatment of minor ailments; Training of ASHAs. Periodic training of Doctors through Continuing Medical Education, Training of ANM and LHV in antenatal care and skilled birth attendance.

16. Basic Laboratory Services : Essential Laboratory services

17. Monitoring and Supervision : Monitoring and supervision of activities of sub-centre.

18. AYUSH services as per local people's preference : (Mainstreaming of AYUSH).

19. Rehabilitation : Disability prevention, early detection, intervention and referral.

20. Selected Surgical Procedures : The vasectomy, tubectomy (including laparoscopic tubectomy), MTP, hydrocelectomy and cataract surgeries as a camp/fixed day approach have to be carried out in a PHC having facilities of O.T.

21. Record of Vital Events and Reporting

Charter of Patients’ Rights for Primary Health Centres : Primary Health Centres exist to provide health care to every citizen of India within the allocated resources and available facilities.

1. The Charter seeks to provide a framework, which enables citizens to know
   • What services are available and users’ charges if any.
   • The quality of services they are entitled to.
   • The means through which complaints regarding denial or poor qualities of services will be addressed.

2. Objectives
   • To make available health care services and the related facilities for citizens.
   • To provide appropriate advice, treatment, referral and support that would help to cure the ailment to the extent medically possible.
   • To redress any grievances in this regard.

3. Commitments of the Charter
   • To provide access to available facilities without discrimination.
   • To provide emergency care, if needed on reaching the PHC.
4. Grievance redressal: Grievances that citizens have will be recorded. Aggrieved user after his/her complaint recorded would be allowed to seek a second opinion at CHC.

5. Responsibilities of the users: Users of PHC would attempt to understand the commitments made in the charter and would not insist on service above the standard set in the charter because it could negatively affect the provision of the minimum acceptable level of service to another user. Instructions of the PHC personnel would be followed sincerely, and in case of grievances, the redressal machinery would be addressed by users without delay.

6. Performance audit and review of the charter: Performance audit may be conducted through a peer review every two or three years after covering the areas where the standards have been specified.

Duties of Medical Officer, Primary Health Centre

The Medical Officer of Primary Health Centre (PHC) is responsible for implementing all activities grouped under Health and Family Welfare delivery system in PHC area. He/she is responsible in his individual capacity, as well as over all in charge.

I. Curative Work

1. The Medical Officer will organize the dispensary, outpatient department and will allot duties to the ancillary staff to ensure smooth running of the OPD.
2. He/she will attend to cases referred to him/her.
3. He/she will screen cases needing specialized medical attention including dental care and nursing care and refer them to referral institutions.
4. He/she will provide guidance to the Health Assistants, Health Workers, Health Guides and School Teachers in the treatment of minor ailments.
5. He/she will visit each Sub-centre in his/her area at least once in a fortnight on a fixed day not only to check the work of the staff but also to provide curative services.
6. Organize and participate in the “health day” at Anganwadi Centre once in a month.

II. Preventive and Promotive Work

1. The Medical Officer will ensure that all the members of his/her Health Team are fully conversant with the various National Health & Family Welfare Programs including NRHM to be implemented in the area allotted to each Health functionary. He/she will further supervise their work periodically both in the clinics and in the community setting to give them the necessary guidance and direction.
2. He/she will keep close liaison with Block Development Officer and his/her staff, community leaders and various social welfare agencies in his/her area.
3. He/she will coordinate and facilitate the functioning of AYUSH doctor in the PHC.
4. He will plan and implement the Reproductive and Child Health Programme.

5. Universal Immunization Programme (UIP): He/she will plan and implement UIP in line with the latest policy and ensure cent percent coverage of the target population in the PHC (i.e. pregnant mothers and new born infants).

6. National Vector Borne Disease Control Programme (NVBDCP): He/she will be responsible for all NVBDCP operations for Malaria, Kala Azar and JE in his/her PHC area and will be responsible for all administrative and technical matters.

7. Control of Communicable Diseases: He/she will ensure that all the steps are being taken for the control of communicable diseases and for the proper maintenance of sanitation in the villages.

8. Leprosy: He/she will provide facilities for early detection of cases of Leprosy and confirmation of their diagnosis and treatment.

9. Tuberculosis: He/she will provide facilities for early detection of cases of Tuberculosis, confirmation of their diagnosis and treatment and also ensure functioning of Microscopic Centre (if the PHC is designated so) and provision of DOTS.

10. Sexually Transmitted Diseases (STD): He/she will ensure that all cases of STD are diagnosed and properly treated and their contacts are traced for early detection.

11. School Health: He/she will visit schools in the PHC area at regular intervals and arrange for Medical checkups, immunization and treatment with proper follow up of those students found to have defects.


III. Training: He/she will organize training programmes including continuing education for the staff of PHC and ASHA under the guidance of the district health authorities and Health & Family Welfare Training centres.

IV. Administrative Work: He/She will carry out all administrative activities required for smooth running of the PHC.

Job Responsibilities of Health Educator

The Health Educator will function under the technical supervision and guidance of the Block Extension Educator. However, he/she will be under the immediate administrative control of the PHC Medical Officer. He/she will be responsible for providing support to all health and family welfare programmes in the block. His duties and functions are:

1. He/she will have with him/her all information relevant to development activities in the block, particularly concerning health and family welfare, and will utilize the same for programme planning.
2. He/she will develop his/her work plan in consultation with the medical officer of his/her PHC and the concerned Block Extension Educator.
3. He/she will collect and interpret the data in respect of extension education work in his/her PHC area.
4. He/she will be responsible for regular maintenance of records of educational activities, tour programmes, daily dairies and other registers, and will ensure preparation and display of

- 460 -
1. Supervise and guide
   - Supervise and guide the Health Worker Female, Dais and guide ASHA in the delivery of health care service to the community.
   - Visit each sub-centre at least once a week on a fixed day to observe and guide the Health Worker Female in her day to day activities under various National Health Programmes.
2. Team Work
   - Assist the Medical Officer of the primary health centre in the organization of the different health services in the area.
   - Participate as a member of the health team in mass camps and campaigns in health programmes.
   - Help the health workers to work as part of the health team.
3. Supplies, equipment and maintenance of Sub-centres
   - In collaboration with the health assistant male, check at regular intervals the stores available at the sub-centre and help in the procurement of supplies and equipment.
4. Records and Reports
   - Scrutinize the maintenance of records by the Health Worker Female and guide her in their proper maintenance.
   - She will carry with her the proper record forms, diary and guidelines for identifying suspected Kala-Azar and JE cases.
   - She will be responsible along with Health Assistant Male for ensuring complete treatment of Kala-Azar and JE patients in his area.
   - She will be responsible along with health assistant male for ensuring complete coverage during the spray activities and search operation.
5. Training
   - Organize and conduct training for dais/ASHA with the assistance of the health worker female.
   - Assist the medical officer of the primary health centre in conducting training programme for various categories of health personnel.
6. Maternal and Child Health
   - Conduct weekly MCH clinics at each Sub-centre with the assistance of the health worker female and dais.
   - Conduct deliveries when required at PHC level and provide domiciliary and midwifery services.
7. Family Planning and Medical Termination of Pregnancy
   - She will ensure that health worker female maintains up-to-date eligible couple registers all the times.
   - Conduct weekly family planning clinics along with the MCH clinics at each Sub-centre with the assistance of the health worker female. Provide information on the availability of services for medical termination of pregnancy and refer suitable cases to the approved institutions.
   - Personally motivate resistant case for family planning.
8. Nutrition
   - Ensure that all cases of malnutrition among infants and young children (0-5 years) are given the necessary treatment and advice and refer serious cases to the primary health centre.
   - Ensure that iron and folic acid, vitamin A are distributed to the beneficiaries as prescribed.
9. Universal Immunization Programme
   - Supervise the immunization of all pregnant women and children (0-5 years).
10. Acute Respiratory Infection
    - Ensure early diagnosis of pneumonia among infants and young children (0-5 years) are given the necessary treatment and advice and refer serious cases to the primary health centre.
    - Provide suitable treatment to mid/moderate cases of ARI.
    - Ensure early referral in doubtful/severe cases.
11. School Health
    - Help medical officers in school health services.
12. Primary Medical Care
    - Ensure treatment for minor ailments provide ORS & first aid for accidents and emergencies
1. Supervise and guide
   - Strengthen the knowledge and skills of the health worker male and supervise and guide him in the delivery of health care service to the community.
   - Visit each Health Worker Male and at least once a week to observe and guide him in his day to day activities.
   - Assess monthly the progress of work of the Health Worker Male.
   - Carry out supervisory home visits in the area of the health worker male.

2. Team Work
   - Help the health workers to work as part of the health team.
   - Coordinate his activities with those of the Health Assistant Female and other health personnel including the dais and health guide.
   - Coordinate the health activities in his area with the activities of workers of other departments and agencies and attend meeting at PHC level.
   - Conduct staff meetings fortnightly with the health workers in coordination with the Health Assistant Female at one of the Sub-centres by rotation.
   - Attend staff meetings at the Primary Health Centre.
   - Assist the medical officer of the Primary Health Centre in the organization of the different health services and conducting training programmes for various categories of health personnel.
   - Participate as a member of the health team in mass camps and campaigns in health programmes.

3. Supplies, equipment and maintenance of Sub-centres
   - In collaboration with the Health Assistant Female, check at regular intervals the stores available at the Sub-centre and ensure timely placement of indent for and procure the supplies and equipment in good time.
   - Check that the drugs at the Sub-centre are properly stored and that the equipment is well maintained.

4. Records and Reports
   - Scrutinize the maintenance of records by the Health Worker Male and guide him in their proper maintenance.

5. Malaria
   - He will supervise the work of Health Worker Male. He should check minimum of 100 of the houses in a village to verify the work of the Health Worker Male.
   - He will carry with him a kit for collection of blood smears during his visit to the field and collect thick and thin smears from any fever case he comes across and he will administer presumptive treatment of prescribed dosage of Anti-malarial drugs.
   - He will be responsible for prompt radical treatment to positive cases in his area.
   - Supervise the spraying of insecticides during local spraying along with the Health Worker Male. Where Kala-Azar and JE is endemic he will supervise the work of Health Worker Female.
   - He should verify that the Health Worker Male really visited those houses and identified suspected Kala-Azar and JE cases and ensured complete treatment has been done properly.
   - He will carry with him the proper record forms, diary and guidelines for identifying suspected Kala-Azar and JE cases.
   - He will be responsible for ensuring complete coverage treatment of Kala-Azar and JE patients in his area.
   - He will be responsible for ensuring complete coverage during the spray activities and search operation.
   - He will also undertake health education activities particularly through interpersonal communication, arranging group meetings with leaders and organizing and conducting training of community leaders with the assistance of health team.

6. Communicable Disease
   - Be alert to the sudden outbreak of epidemics of diseases, such as diarrhoea/dysentery, fever with rash, jaundice, encephalitis, diphtheria, whooping cough or tetanus poliomyelitis, tetanus neonatorum, acute eye infections and take all possible remedial measures.
   - Take the necessary control measures when any noticeable disease is reported to him.
   - Carryout the destruction of stray dogs with the help of the Health Worker Male.

7. Leprosy
   - In cases suspected of having leprosy take skin smears and send them for examination.
   - Ensure that all case of leprosy take regular and complete treatment and inform the medical officer PHC about any defaulters to treatment.

8. Tuberculosis
   - Check whether all cases under treatment for Tuberculosis are taking regular treatment, motivate defaulters to take regular treatment and bring them to the notice of the Medical Officer, PHC.
   - Ensure that all cases of Tuberculosis take regular and complete treatment and inform the Medical Officer, PHC about any defaulters to treatment.

9. Environmental Sanitation
   - Help the community sanitation for safe water sources, Soakage pits, Manure pits, Compost pits, Sanitary latrines, Smokeless chullas and supervise their construction.
   - Supervise the chlorination of water sources including wells.

10. Universal Immunization Programme
    - Conduct immunization of all school going children with the help of the
Health Workers Female.

11. Family Planning
- Personally motivate resistant case for family planning.
- Guide the Health Worker Male in establishing female depot holders.
- Assist M.O. PHC in organization of family planning camps and drives.
- Provide information on the availability of services for medical termination of pregnancy and refer suitable cases to the approved institutions.
- Ensure follow up of all cases of vasectomy, tubectomy, IUD and other family planning acceptors.

Job Responsibilities of Health Worker Female (ANM)

1. Maternal and Child Health: She will register and provide care to pregnant women throughout the period of pregnancy. She will ensure that every pregnant woman makes at least 3 (three) visits for ante natal check-up, estimate their haemoglobin level and test urine of these women for albumin and sugar. She will refer all pregnant women to PHC for RPR test for syphilis and refer cases of abnormal pregnancy and cases with medical and gynaecological problems to Health Assistant Female (LHV) or the Primary Health Centre. She will conduct deliveries in her area when called for and supervise deliveries conducted by Dais and assist them whenever called in. She will refer cases of difficult labour and newborns with abnormalities, help them to get institutional care and provide follow up to the patients referred to or discharged from hospital. She will identify the ultimate beneficiaries, complete necessary formalities and obtain necessary approvals of the competent authority before disbursement to the beneficiaries under Janani Suraksha Yojana. She will make at least two post-natal visits for each delivery in her areas and render advice regarding care of the mother and care and feed of the newborn. She will also assess the growth and development of the infant and take necessary action required to rectify the defect. She will educate mothers individually and in groups in better family health including maternal and child health, family planning, nutrition, immunization, control of communicable diseases, personal and environmental hygiene.

2. Family Planning: She will utilise the information from the eligible couple and child register for the family planning programme. She will be responsible for maintaining eligible couple registers and updating at all times. She will spread the message of family planning to the couples and motivate them for family planning individually and in groups. She will distribute conventional contraceptives and oral contraceptives to the couples, provide facilities and help prospective acceptors in getting family planning services, if necessary, by accompanying them or arranging for the Dais/ASHA to accompany them to hospital. Provide follow-up services to female family planning acceptors, identify side effects, give treatment on the spot for side effects and minor complaints and refer those cases that need attention by the physician to the PHC/Hospital. She will establish female depot holders, help the Health Assistant Female in training them, and provide a continuous supply of conventional contraceptives to the depot holders.

3. Medical Termination of Pregnancy: She will identify the women requiring help for medical termination of pregnancy and refer them to nearest approved institution. Educate the community of the consequences of septica abortion and inform them about the availability of services for medical termination of pregnancy.

4. Nutrition: She will identify cases of malnutrition among infants and young children (zero to five years) give the necessary treatment and advice and refer serious cases to the Primary Health Centre. She will distribute Iron and Folic Acid (IFA) tablets as prescribed to pregnant nursing mothers and administer Vitamin A solution to children. She will educate the community about nutritious diet for mothers and children in coordination with Anganwadi Workers.

5. Universal Programme on Immunization (UIP): She will immunize pregnant women with tetanus toxoid, administer DPT, oral polio, measles and BCG vaccine to all infants and children, (Hepatitis-B in pilot areas) as per immunization schedule.

6. Dai Training: She will list Dais in her area and involve them in promoting Family Welfare and help the Health Assistant Female / LHV in the training programme of Dais.

7. Communicable Diseases: She will notify the Health Worker Male/MO PHC immediately about any abnormal increase in cases of diarrhoea/dysentery, fever with rigors, fever with rash, fever with jaundice or fever with unconsciousness which she comes across during her home visits, take the necessary measures to prevent their spread. If she comes across a case of fever during her home visits she will take blood smear, administer presumptive treatment and inform Health Worker male for further action. She will identify cases of skin patches, especially if accompanied by loss of sensation, which she comes across during her homes visits and bring them to the notice of the Health Worker Male/MO (PHC). She will give oral rehydration solution to all cases of diarrhoea/dysentery/vomiting and identify and refer all cases of blindness including suspected cases of cataract to MO PHC.

8. Vital Events: She will record and report to the health authority of vital events including births and deaths, particularly of mothers and infants.

9. Record Keeping: She will register (a) pregnant women from three months of pregnancy onward (b) infants zero to one year of age; and (c) women aged 15 to 44 years. She will maintain the pre-natal and maternity records and child care records and prepare the eligible couple and child register. She will maintain the records as regards contraceptive distribution, IUD insertion, couples sterilized, clinics held at the sub-centre and supplies received and issued. While maintaining passive surveillance register for malaria cases, she will record: No. of fever cases, No. of blood slides prepared, No. of malaria positive cases reported, No. of cases given radical treatment.

10. Treatment of minor ailments: She will provide treatment for minor ailments, provide first-aid for accidents and emergencies and refer cases beyond her competence to the PHC/CHC/hospital.

11. Team Activities: She will attend and participate in staff meetings at PHC/Community Development Block or both. She will coordinate her activities with the Health Worker Male and other health workers including the Health volunteers/ASHA.
During his visits and direct such a case to report to PHC for presentation. He will identify the fever cases detected by him and training of field spraying staff. The Health Supervisor Male in supervising spraying operations receiving radical treatment with primaquine. He shall contact down action if toxic manifestations are observed in a patient instructions issued by the Medical Officer PHC and take laid the positive cases as per drug schedule prescribed and as per any during his visit. He shall administer radical treatment to verify the radical treatment administered by the ASHA, FTD if during their visit in his area to the PHC Laboratory twice a fortnightly visit to the village and (i) collect blood smears (A) Malaria and other diseases under NVBDCP: From each family, he shall enquire about presence of any fever cases; whether there was any fever case in the family in between his fortnightly visits; whether any guest had come to the family and had fever; whether any member of the family who had fever in between his fortnightly visit had left the village. He shall collect thick and thin blood smears on one glass slide from case having fever or giving history of fever. He shall begin presumptive treatment for Malaria after blood smear has been collected. He will follow the instructions given to him regarding administration of presumptive treatment under NVBDCP. He shall contact the ASHA, FTD during their fortnightly visit to the village and (i) collect blood smears already taken by the ASHA, FTD (ii) also collect details of each case in MF-2 (iii) replenish both drugs and glass-slides and Rapid Diagnostic Kits (RDKs) and look into the account of consumption of Anti malarial drugs and use of RDKs. He shall dispatch blood smears along with MF-2 collected from the ASHA, FTD, multipurpose worker female and those collected during their visit in his area to the PHC Laboratory twice a week. He shall see the results obtained by the use of RDKs and verify the radical treatment administered by the ASHA, FTD if any during his visit. He shall administer radical treatment to the positive cases as per drug schedule prescribed and as per instructions issued by the Medical Officer PHC and take laid down action if toxic manifestations are observed in a patient receiving radical treatment with primaquine. He shall contact the ASHA and FTD and inform him of the spray dates and assist the Health Supervisor Male in supervising spraying operations and training of field spraying staff.

Where Kala-Azar / Japanese Encephalitis is endemic: From each family he shall enquire about presence of any fever cases of more than 15 days duration or fever with encephalitic presentation. He will identify the fever cases detected by him during his visits and direct such a case to report to PHC for confirmatory diagnosis. He will guide the suspected cases to the nearest diagnostic and treatment centre for diagnosis and treatment by the MO. He will keep a record of all such cases and shall verify from PHC about their diagnosis during the monthly meeting or through health supervisor during his visit. He will carry a list of all Kala-azar/JE cases in his area for follow up and will ensure administration of complete treatment. He will assist during the spray activities in his area. He will conduct all health education activities particularly through interpersonal communication by carrying proper charts etc. and also assist health supervisors and other functionaries in their education activities.

(B) National Leprosy Eradication Programme: He will identify cases of skin patches especially if accompanied by loss of sensation, refer the above cases to PHC Medical Officer for diagnosis. If Leprosy patients want to take MDT from sub-centre, he will provide treatment and maintain patient card.

(C) National Blindness Control Programme: He will identify and refer all cases of blindness including suspected cases of cataract to Medical Officer, PHC.

(D) Revised National Tuberculosis Control Programme: He will identify persons especially with fever for 15 days and above with prolonged cough or spitting blood and take sputum smears from these individuals and refer these cases to the M. O. PHC for further investigations. He will check whether all cases under treatment for Tuberculosis are taking regular treatment, motivate defaulters to take regular treatment and bring them to the notice of the medical officer PHC.

(E) Universal Immunization Programme: He will administer DPT, oral Polio, measles and BCG vaccine to all infants and children in his area in collaboration with health worker female and assist her in administration of tetanus toxoid to all pregnant women. He will assist the health supervisor male/health supervisor female in the school health programme.

(F) Reproductive and Child Health Programme: He will utilize the information from the eligible couple and child register for the family planning programme. He will distribute conventional contraceptives and oral contraceptives to the couples and provide follow up services to male family planning acceptors, and refer those cases that need attention by the physician to PHC/Hospital. He will assist the health supervisor male in training the community and its leaders in family welfare. He will identify the women requiring help for medical termination of pregnancy, refer them to the nearest approved institution and inform the health worker female.

(G) Other Communicable Diseases: He will identify cases of diarrhoea/dysentery, fever with rash, jaundice encephalitis, diphtheria, whooping cough and tetanus, poliomyelitis, neonatal tetanus, acute eye infections and notify the health supervisor male and MO PHC immediately about these cases. He will carry out control measures until the arrival of the health supervisor male and assist him in carrying out these measures.

(H) Environment Sanitation: He will chlorinate the public water sources including wells at regular intervals. Educate the community on (a) The method of disposal of liquid wastes (b) The method of disposal of solid waste (c) Home sanitation
(d) Advantage and use of sanitary type of latrines
(e) Construction and use of smokeless chulhas.

(J) Primary Medical Care: He will provide treatment for minor ailments provide first aid for accidents and emergencies and refer cases beyond his competence to the PHC/hospital.

(J) Health Education: He will educate the community about various health services.

(K) Nutrition: He will identify cases of malnutrition among infants and young children (0-5 years) in his area, give the necessary treatment and advice or refer to the ASHAs for supplementary feeding and refer serious cases to the PHC. Educate the community about the nutrition diet for mothers and children from locally available food.

(L) Vital Events: He will Enquire about births and deaths occurring in his area, record them in the births and deaths register and report them to the Health Supervisor Male / ANM and educate the community on the importance of registration of births and deaths.

**Accredited Social Health Activists (ASHA)**

A trained female community health worker - ASHA - is being provided in each village in the ratio of one per 1000 population. For tribal, hilly, desert areas, the norm could be relaxed for one ASHA per habitation depending on the workload. ASHA must be a primary resident of the village with formal education upto Class VIII and preferably in the age group 25-45. She would be selected by the Gram Sabha following an intense community mobilization process. She would be fully accountable to the Panchayat. Induction training of ASHA is to be of 23 days in all (five modules), spread over 12 months. On the job training would continue throughout the year.

Though she would not be paid any honorarium, she would be entitled for performance based compensation. It is expected that on an average an ASHA working with reasonable efficiency would be able to earn Rs. 1000 per month. Since as per the existing approval, the compensation for ASHA is not factored in the scheme, it is proposed to modify the programmes mentioned in the ASHA compensation package, wherever necessary, to enable the payment of compensation to her. The cost of training and drug kits to ASHAs would be supported by the Centre in the 18 high focus states. The other states would have the flexibility to have Health link workers to support it out of the RCH II flexible fund. As a special case, ASHAs could be supported in very remote backward regions in non-focus States. ASHAs would reinforce community action for universal immunization, safe delivery, newborn care, prevention of water-borne and other communicable diseases, nutrition and sanitation. She will also help the villagers promote preventive health by converging activities of nutrition, education, drinking water, sanitation etc. In order that ASHAs work in close coordination with the AWW, she would be fully anchored in the Anganwadi system. ASHAs would also be provided with a ‘drug kit’ which would help her in providing immediate and easy access for the rural population to essential health supplies like ORS, contraceptives, a set of ten basic drugs. She would also have a health communication kit and other IEC materials developed for villages.

At present, Health Day's are organized every month at the Anganwadi level in each village in which immunization, ante/post natal check ups and services related to mother and child health care including nutrition are being provided. Space at each Anganwadi to serve as the hub of health activities in the village could be considered under other Rural Development Programmes. This space could also serve as depot for medicines and contraceptives.

A revolving fund would be set up at the village level for providing referral and transport facilities for emergency deliveries as well as immediate financial needs for hospitalization. The fund would be operated by the VHSC. Untied fund would also be made available to VHSC for various health activities including IEC, household survey, preparation of health register, organization of meetings at the village level etc. Since VHSC would be asked to play a leading role in the health matters of the village, its members would be given orientation training to equip them to provide leadership as well as plan and monitor the health activities at the village level.

For those villages which are far away from the Sub-Centre, a TBA with requisite educational qualifications would be identified for training and support. She would assist the ANM at the Sub Centre. ASHAs willing to play this role would be given preference. In places where even an ANM’s services are not reaching and there is no accredited ASHA available, the RMPs would be identified for training so that they could upgrade their skills and get accredited. Efforts would also be made to regulate quacks and untrained dais. ASHA will assist the villagers in referral services for AYUSH/testing HIV/AIDS, STI, RTI, also preventive, promotive health already with AWW/SHGs etc. ASHA will provide them information on the treatments available under AYUSH.

**Summary**

The health care services’ organization in the country extends from the national level to village level. At the national level it consists of the Union Ministry of Health and Family Welfare, which has three departments, viz. - Department of Health & Family Welfare, Department of AYUSH and Department of Health Research. Each of these departments is headed by respective secretaries to Govt of India. The department of Health & Family Welfare is supported by a technical wing, the Directorate General of Health Services, headed by Director General of Health Services (DGHS). At State level it is under the State Department of Health and Family Welfare in each State headed by Minister and with a Secretariat under the charge of Secretary/Commissioner (Health and Family Welfare). The State Directorate of Health Services, as the technical wing, is an attached office of the State Department of Health and Family Welfare and is headed by a Director of Health Services. At Regional level, in some states each regional/zonal set-up covers three to five districts and acts under authority delegated by the State Directorate of Health Services. At District level, all health care programmes are placed under a unified control and is a link between the State/ regional structure on one side and the peripheral level structures such as PHC/Sub-centre on the other side. The district officer with the overall control is designated as the Chief Medical and Health Officer (CM & HO).
or as the District Medical and Health Officer (DM & HO).

One Community Health Centre (CHC) has been established for every 80,000 to 1,20,000 population, and this centre provides the basic specialty services in general medicine, pediatrics, surgery, obstetrics and gynecology. CHCs are being established and maintained by the State Government. It is manned by four medical specialists i.e. Surgeon, Physician, Gynecologist and Pediatrician supported by 21 paramedical and other staff. It has 30 in-door beds with one OT, Xray, Labour Room and Laboratory facilities. It serves as a referral centre for 4 PHCs.

PHCs are the cornerstone of rural health services- a first port of call to a qualified doctor of the public sector in rural areas for the sick and those who directly report or referred from Sub-centres for curative, preventive and promotive health care. One Primary Health Centre covers about 30,000 (20,000 in hilly, desert and difficult terrains) or more population. At present, a PHC is manned by a Medical Officer supported by 14 paramedical and other staff. It acts as a referral unit for 6 sub-centres and refer out cases to Community Health Centres (CHCs-30 bedded hospital)/sub-district/district hospitals. It has 4-6 indoor beds for patients.

The Sub-centre is the most peripheral and first contact point between the primary health care system and the community. Sub-centres are assigned tasks relating to interpersonal communication in order to bring about behavioral change and provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoea control and control of communicable diseases programmes. The Sub-centres are provided with basic drugs for minor ailments needed for taking care of essential health needs of men, women and children. Currently a Sub-centre is staffed by one Female Health Worker commonly known as Auxiliary Nurse Midwife (ANM) and one Male Health Worker commonly known as Multi Purpose Worker (Male). One Health Assistant (Female) commonly known as Lady Health Visitor (LHV) and one Health Assistant (Male) located at the PHC level are entrusted with the task of supervision of all the Sub-centres (generally six sub-centres) under a PHC.

The overall objective of Indian Public Health Standards (IPHS) is to provide health care that is quality oriented and sensitive to the needs of the community. In order to provide optimal level of quality health care, a set of standards are being recommended for Community Health Centre /Primary Health Centre/Sub centre with reference to Infrastructure, Functioning and Staffing including responsibilities of each.

The Medical Officer of Primary Health Centre (PHC) is responsible for implementing all activities grouped under Health and Family Welfare delivery system in PHC area. He/she is responsible in his individual capacity, as well as over all in charge for his curative, preventive and promotive care of the patients. He will organize training programmes including continuing education for the staff and carry out all administrative activities required for smooth running of the PHC.

The health assistant female will supervise, guide and train the Health Worker Female, Dais and ASHAs; and also visit each Sub-centre at least once a week. The Health Assistant Male will strengthen the knowledge and skills of the health worker male and supervise and guide him in the delivery of health care service to the community; and visit each Health Worker Male at least once a week. They maintain records and carry out a team work at PHC.

Health Worker Female (ANM) provides MCH care, Family planning, identify the women requiring help for MTP and identify cases of malnutrition among infants and young children and refer them. She will immunize pregnant women with tetanus toxoid, administer DPT, oral polio, measles and BCG vaccine to all infants and children, (Hepatitis-B in pilot areas) as per immunization schedule. Dai Training, identifying, notifying and referring various Communicable Diseases and recording the vital events are some of her important jobs. The Health worker Male will make a visit to each family once a fortnight and performs the prescribed duties pertaining to different National Health Programmes like NVBDCP, NLEP, RNTCP, UIP, National Blindness Control Programme and others. He will chlorinate the public water sources including wells at regular intervals and educate the community.

A trained female community health worker - ASHA - is being provided in each village in the ratio of one per 1000 population. She must be a primary resident of the village with formal education upto Class VIII and preferably in the age group 25-45. She would be selected by the Gram Sabha and would be fully accountable to Panchayat. Though she would not be paid any honorarium, she would be entitled for performance based compensation. ASHAs would reinforce community action for universal immunization, safe delivery, newborn care, prevention of water-borne and other communicable diseases, nutrition and sanitation.

Study Exercises

Long Questions: (1) Describe the Health care organization in India. Explain how “Primary Health Care” is provided to all. (2) Describe the Staffing and functioning of PHC. (3) Describe the duties of Medical Officer at PHC.

Short Notes: (1) ASHA (2) Duties of Health worker Male (3) Duties of Health worker Female (ANM) (4) Duties of Health Assistant Female (5) Duties of Health Assistant Male. (6) Staffing pattern of PHC (7) Functioning of CHC (8) Functioning of Sub-centre

MCQs

(1) According to the national health policy, one sub-centre for the hilly areas covers a population of (a) 3000 (b) 5000 (c) 1000 (d) 4000

(2) All are grass root workers except (a) Anganwadi workers (b) Traditional birth attendants (c) Village health guide (d) Health assistants.

(3) A female multipurpose worker should be able to detect all of the following except (a) Anemia (b) Renal disease (c) Hydramnios (d) Malpresentation

(4) Which is true about Community health centre : (a) It covers a population of one lakh (b) It has 60 beds with specialties in surgery, medicine and gynecology (c) Community health officer is selected with a minimum of 5 years of exposure (d) New medical post of community health officer is created

(5) One PHC should be present in hilly areas for every
(a) 10,000 people (b) 20,000 people (c) 30,000 people (d) 50,000 people

6. Guideline for selection of village health guide are all except
(a) They should be permanent resident of local community
(b) They should have minimum formal education at least upto 10th standard
(c) Acceptable to all sections of society
(d) They should be able to spare at least 2-3 hrs daily for community health work

7. A dai is trained for (a) 30 working days (b) 90 working days (c) four months (d) six months

8. Govt trains a health guide from a village (a) every year (b) once in three years (c) once in five years (d) only once

9. Which is not a duty of a traditional birth attendant
(a) Aseptic delivery (b) Health education (c) Injection of Tetanus toxoid (d) Registration of birth

10. The minimum number of beds recommended for CHC by IPHS is (a) 30 (b) 55 (c) 40 (d) 60

11. Health Assistants visit Sub-centre / Health Workers once in
every (a) week (b) 2 weeks (c) 3 weeks (d) month

12. One Health Assistant (Male) is entrusted with the task of supervision of ____ Sub centres (a) 2-3 (b) 5-6 (c) 7-8 (d) only 2

13. Which is false regarding ASHA: (a) Provided in each village in the ratio of one per 1000 population (b) A primary resident of the village with formal education upto Class IV (c) Preferably in the age group 25-45 (d) Selected by the Gram Sabha

Answers : (1) a; (2) d; (3) b; (4) a; (5) b; (6) b; (7) a; (8) b; (9) c; (10) a; (11) a; (12) b; (13) b.

Reports of Health Committees

Sunil Agrawal

In the pre-independence period, the British had started a number of Public Health initiatives. Quarantine act was passed in 1825. Commission of Public Health in 1859 had pointed out the need of safe water and environmental sanitation to prevent occurrence of epidemics. In 1864, Sanitary commissioners were appointed in all three provinces of Bombay, Madras and Bengal to study the health problems and initiate measures for improvement. Local self government act was passed in 1885. Decentralization of health administration had begun in 1919 with Montague - Chelmsford constitutional reforms. The colonial era was marked by the dichotomy which continues to operate in the country’s health policy to date. They acknowledged the existence of the gaps in coverage of health services, proclaiming the responsibility for the same and recommending suitable action while simultaneously not providing resources for implementation. This trend was unfortunately perpetuated even in free India.

In 1940, the resolution adopted by the National Planning Committee based on the Sokheys Committee’s recommendations recommended integration of preventive and curative functions and the training of a large number of health workers. Bhore committee constituted in 1943 laid the framework on which the health care was eventually built in the independent India. The health care in India has since moved from bureaucratic government based top down approach to decentralized community based bottom - up system after the Panchayati Raj came into being. This model was long ago propagated by the Father of the nation “Mahatma Gandhi”.

Bshore Committee (1943-1946)

During pre independence era, to improve the preventive, promotive and curative heath services of country, a National Planning Commission was set up by the Indian National Congress in 1938. The rulers of that time, the British Empire realised the importance of Public Health and instituted the ‘Health Survey and Development Committee.’ in the year 1943 under the chairmanship of Sir Joseph Bhore. The committee was tasked to survey the then health conditions and health organisations in the country, and to make recommendations for future development. The committee submitted its report in 1946. The integration of preventive, promotive and curative health services and establishment of Primary Health Centres in rural areas were the major recommendations made by this committee (Box - 1).

**Box-I : Important recommendations of the Bhore committee**

- Integration of Preventive, Promotive and Curative services at all administrative levels.
- The development of Primary Health Centres for the delivery of comprehensive health services to the rural India. Each PHC should cater to a population of 40,000 with a Secondary Health Centre (now called Community Health Centre) to serve as a supervisory, coordinating and referral institution.
- In the long term (5 million plan), the PHC would have a 75 bedded hospital for a population of 10,000 to 20,000.
- It also reviewed the system of medical education and research and included compulsory 3 months training in Community Medicine.
- Committee proposed the development of National Programmes of health services for the country.
This document laid the utmost emphasis on primary health care; it needs no emphasis that primary health care was later on recognised as the key strategy to achieve Health for All (HFA) by 2000 during Alma-Ata conference. The Bhore committee model was based on the allopathic system of medicine. The traditional health practices and indigenous system of medicine prevalent in rural India, which had great influence and were part of their socio-cultural milieu were not included in the model proposed by Bhore committee. The approach was not entirely decentralized but had a top down approach. However it provided a ready-made model at the time of independence and thus was adopted as a blueprint for both health policy and development of the country.

Post Independence Era: Since, the dawn of independence, rapid strides have been made in effecting improvements in the quality and out reach of health care services to the people. After Independence in 1947, the Indian Government constituted Planning Commission in 1950, and started Five year plan system for socioeconomic development of the country of which health was the important and integral part. Besides the planning commission the government also set up various committees to plan specific public health services or review existing health situations.

Mudaliar committee (1962)
During second five year plan, Government decided to relook at the health needs and resources of the country to provide necessary guidelines to national health planning. Also to review the progress made since submission of Bhore committee report, Government appointed “Health Survey and Planning Committee” under the chairmanship of Dr A Lakshmanswami Mudaliar in 1959 to make future recommendations for development and expansion of health services. It admitted that the basic health facilities had not reached at least half the nation and there was gross mal distribution of hospitals and beds in favour of urban areas. The committee found that the quality of services provided by PHCs were grossly inadequate with poor functioning, lack of referral system, and gross under staffing due to insufficient resources. Important recommendations of the Mudaliar committee are depicted in Box - 2.

Mukerji Committee, 1965
By recommending basic health workers to take on additional responsibilities and work as multi purpose worker, both NMEP and family planning programme got a major set back. A committee under the chairmanship of Shri Mukerji, then Health Secretary to GOI was appointed to review the health system at different levels from the point of manpower and financial planning. Important recommendations of the Mukerji committee are in Box - 4.

Jungalwalla Committee, 1967
In 1967, Central Council of Health appointed “Committee on integration of Health Services” headed by Dr N. Jungalwalla, then Director, National Institute of Health Administration and Education. Important recommendations of the Jungalwalla committee are represented in Box - 5.

Chadah Committee (1963)
Dr MS Chadha, the then DGHS, was appointed to study the details of the necessary requirements related to PHCs and maintenance of National Malaria Eradication Program. Important recommendations of the Chadah committee are shown in Box - 3.

Kartar Singh Committee, 1973
The Committee headed by then additional secretary, MOH and Family planning, Shri Kartar Singh, was constituted to study and make recommendations on the structure for integrated health services at peripheral and supervisory levels. It was to
study the feasibility of bi purpose and multipurpose workers in the field. Important recommendations of the Kartar Singh committee are shown in Box - 6.

Shrivastav Committee (1974-75)
This is known as “Group on Medical Education and Support Manpower” constituted in 1974 by the Government. The concept of community participation in the health sector originated which has given concept of “people’s health in people’s hand”. Convened under the chairmanship of Dr J B Shrivastav, Director General Health Services, this committee made the recommendations as in Box - 7.

**Box - 6 : Important recommendations of the Kartar Singh committee**
- It recommended “Female Health Worker” in place of ANM and “Male Health Worker” in place of malaria surveillance worker, vaccinators, health education assistants and family planning health assistants.
- The committee proposed a PHC per 50,000 population with 16 subcentres, each covering a population of 3000-3500. (4)
- Each subcentre to have one male and one female health worker.
- There should be one male and one female health supervisor at PHC to monitor and supervise the activities of staffs of 3-4 sub centres.
- The MO i/c PHC will be the overall in charge of all peripheral staff.
- Training for all workers engaged in the field of health, family planning and nutrition should be integrated.

**Box - 7 : Important recommendations of the Shrivastav committee**
- Creation of Village Health Guide (VHG) or community health volunteers from the community itself like teachers, postmasters, gram sevaks who can provide comprehensive health services as paraprofessionals.
- Primary health care be provided within the community itself through specially trained workers so that the health of the people is placed in the hands of people themselves.
- Creation of MPW and Health Assistants (HA) in between the VHG and MO i/c PHC.

Based on these recommendations “Rural Health Scheme” was launched by the government in 1977-78. The programme of training of community health workers was initiated during 1977-78. The major steps initiated were:

a) Involvement of medical colleges in health care of selected PHCs with the objective of reorienting medical education according to rural population called Re Orientation of Medical education (ROME). It led to teaching and training of undergraduate students and Interns at PHCs.

b) Training of Village Health Guides and utilising their services in the general health service system.

Shivaraman Committee health report
A Committee on Basic Rural Doctors was framed under the guidance of Shri Shivaraman, then member of planning commission. The committee recommended establishment of countrywide cadre of basic rural doctors consisting of trained paraprofessionals to extend comprehensive health care delivery to rural community.

V Ramalingaswamy Committee Health Report
This committee under the chairmanship of Dr V Ramalingaswamy, then DGHS, recommended as in Box-8.

**Box - 8 : Important recommendations of the Ramalingaswamy committee**
- Involvement of community for health planning and health programme implementation
- 30 bedded hospital for every 1 lakh population
- Integration of health services at all levels
- Redefined the role of doctor in the community
- Recommended that PHC and District health centres should be under the control of three tier Panchayati Raj System.

Bajaj Committee health report 1986
A expert committee for ‘health manpower planning, production and management’ was constituted under the chairmanship of Dr JS Bajaj, then member of planning commission, to tackle the problem of health manpower planning, production and management. Important recommendations of the Bajaj committee are in Box - 9.

**Box-9 : Important recommendations of the Bajaj committee**
- Recommended for Formulation of National Health Manpower planning based on realistic survey.
- Educational Commission for health sciences should be developed on the lines of UGC.
- Recommended for National and Medical education policy in which teachers are trained in health education science technology.
- Uniform standard of medical and health science education by establishing universities of health sciences in all states.
- Establishment of health manpower cells both at state and central level.
- Vocational courses in paramedical sciences to get more health manpower.

Krishnan Committee Health Report 1992
The committee under the chairmanship of Dr Krishnan reviewed the achievements and progress of previous health committee reports and also made comments on shortfalls. The committee address the problems of urban health and devised the health post scheme for urban slum areas. The committee had recommended one voluntary health worker (VHW) per
2,000 population with an honorarium of Rs 100. Its report specifically outlines which services have to be provided by the health post. These services have been divided into outreach, preventive, family planning, curative, support (referral) services and reporting and record keeping. Outreach services include population education, motivation for family planning, and health education. In the present context, very few outreach services are being provided to urban slums.

Summary

Public Health initiatives like Quarantine act, safe water and environment sanitation, appointment of sanitary inspectors were stared in the pre-independence era. Bhave committee laid the framework on which the Indian health care is built in independent India. The health care in India has since moved from top down approach to bottom-up approach. The Health Survey and Development Committee, ' was instituted in the year 1943 under the chairmanship of Sir Joseph Bhowre. The committee submitted its report in 1946 with following important recommendations like the integration of preventive, promotive and curative health services and establishment of Primary Health Centres (for 40,000 population) in rural areas. Later on it forms the key strategy to achieve Health for All (HFA) by 2000 during Alma-Ata conference. It was based on allopathic system. It provided a ready-made model adopted as a blueprint for both health policy and development of the country.

In post independent era planning commission and several committees were set up to plan specific public health services or review existing health situations. Mudaliar committee (1962) found that the quality of services provided by PHCs were grossly inadequate with poor functioning, lack of referral system, and gross under staffing due to insufficient resources and its major recommendations were strengthening of existing PHCs and development of referral centres, strengthening of subdivisional and district hospitals, integration of medical and health services, and suggested constitution of an All India Health Service in the pattern of Indian Administrative service etc. Chadha committee (1963) was appointed to study the details of the necessary requirements related to PHCs and maintenance of National Malaria Eradication Program. Main recommendations were basic health worker for every 10,000 population who will supervise malaria activities along with additional duties of family planning. Due to set back in both malaria and family planning Mudaliar committee (1965) was appointed. It recommended separate staff for family planning. In 1967, Central Council of Health appointed “Committee on integration of Health Services” headed by Dr N. Jungalwalla (1967) which recommended no private practice for govt doctors. The Committee (1973) headed by Shri Kartar Singh, was constituted to study and make recommendations on the structure for integrated health services at peripheral and supervisory levels. The committee proposed a PHC per 50,000 population with 16 sub-centres, each covering a population of 3000-3500. Each sub-centre to have one male and one female health worker. There should be one male and one female health supervisor at PHC to monitor and supervise the activities of staffs of 3-4 sub centres. The MO i/c PHC will be the overall in charge of all peripheral staff. Srivastava committee (1974) recommended Creation of Village Health Guide (VHG) or community health volunteers based on its recommendation rural health scheme was launched. It recommended establishment of countrywide cadre of basic rural doctors consisting of trained paraprofessionals to extend comprehensive health care delivery to rural community. Important recommendations of the Ramalingaswamy committee were 30 bedded hospital for every 1 lakh population, PHC and District health centres should be under the control of three tier Panchayati Raj System. A expert committee for ‘health manpower planning, production and management’ was constituted under the chairmanship of Dr JS Bajaj and recommended (1986) Formulation of National Health Manpower planning based on realistic survey etc. The committee under the chairmanship of Dr Krishnan (1992) reviewed the achievements and progress of previous health committee reports and also made comments on shortfalls.

Study Exercises

Long Question: Describe various health committees in post-independent era.

Short Notes: (1) Recommendation of Bhore committee (2) Recommendation of Jungalwala committee (3) Recommendation of Kartar Singh committee.

MCQs:
1. Quarantine act was passed in______ (a) 1840 (b) 1825 (c) 1852 (d) 1882
2. Bhore committee was formed in______ (a) 1943 (b) 1934 (c) 1948 (d) 1938
3. According to Bhore committee each PHC cater for _______ population (a) 20,000 (b) 40,000 (c) 25,000 (d) 30,000
4. Which committee recommended a Basic Health worker per 10,000 population (a) Bhore committee (b) Mudaliar committee (c) Chadha committee (d) Kartar Singh committee
5. Which committee recommended ‘No private practise’ for govt. Doctor (a) Mudaliar committee (b) Chadha committee, (c) Kartar Singh committee (d) Jungalwalla committee
6. Rural health scheme was based on recommendation of which committee (a) Srivastava committee (b) Chadha committee (c) Kartar Singh committee (d) Jungalwalla committee
7. Which committee proposed a PHC per 50,000 population with 16 subcentres, each covering a population of 3000-3500 (a) Mudaliar committee (b) Chadha committee (c) Kartar Singh committee (d) Jungalwalla committee
8. Which committee suggested constitution of an All India Health Service in the pattern of Indian Administrative Service (a) Mudaliar committee (b) Chadha committee (c) Kartar Singh committee (d) Jungalwalla committee
9. Which committee recommended establishment of countrywide cadre of basic rural doctors consisting of trained paraprofessionals to extend comprehensive health care delivery to rural community (a) Shivaraman committee (b) Chadha committee (c) Kartar Singh committee (d) Jungalwalla committee
Health Planning Process in India

Sunit Agrawal

Health of a nation is an essential component of development, vital to a nation’s economic growth and internal stability. Assuring a minimal level of health care to the population is a critical constituent of the development process. Since Independence, India has built up a vast health infrastructure and health personnel at primary, secondary, and tertiary care in public, voluntary, and private sectors. For producing skilled human resources, a number of medical and paramedical institutions including Ayurveda, Yoga and Naturopathy, Unani, Siddha & Homeopathy (AYUSH) institutions have been set up.

The strong link between poverty and ill health needs to be recognized. The onset of a long and expensive illness can drive the non-poor into poverty. Ill health creates immense stress even among those who are financially secure. High health care costs can lead to entry into or exacerbation of poverty. The importance of public provisioning of quality health care to enable access to affordable and reliable health services cannot be underestimated. This is specially so, in the context of preventing the non-poor from entering into poverty or in terms of reducing the suffering of those who are already below poverty line. The country has to deal with rising costs of health care and growing expectations of the people. The challenge of quality health services in remote rural regions has to be urgently met. Given the magnitude of the problem, we need to transform public health care into an accountable, accessible, and affordable system of quality services. The role of scientific health planning at the national level, to achieve this goal, needs no highlighting.

Among socialist countries, India is the first and foremost country to show tradition of health planning. During British India, the National congress had a planning committee under the chairmanship of Pandit Jawaharlal Nehru. A committee was appointed by the British, with Sir Joseph Bhore as Chairman, for survey and planning; their report is a major event in the history of Indian Health Planning.

As on today, India is the world’s 12th largest economy and the third largest in Asia behind Japan and China, with total GDP of around 1 trillion ( $1,000 billion). Nearly two-thirds of the population depends on agriculture for its livelihood. 700 million Indians live on Rs.42 per day or less, but there is a large and growing middle class of 325-350 million with disposable income for consumer goods. Real GDP growth for the fiscal year ending March 31, 2007 was 9.4% up from 9.0% growth in the previous year. Growth for the year ending March 31, 2008 is expected to be between 8.5-9.0%.

The Planning Commission

After independence in 1950 the present Planning Commission was established, which launched first five year plan in 1951. The Planning Commission was set up to make an assessment of the material, capital and human resources of the country, and to draft developmental plans for the most effective utilisation of these resources addressing the needs of the community and country at large. It gives suggestions and recommendations to the cabinet on the various issues of the country’s development in consultation with ministers of the state and central government. There are 29 divisions in the Planning Commission like agriculture, health, nutrition, education, environment, family welfare, housing, water supply, manpower, rural development, multilevel planning and monitoring, etc. In 1957, the Planning Commission was provided with a Perspective Planning Division which makes projections into the future over a period of 20-25 years.

The membership of the planning commission is highly distinguished and from the very beginning it is chaired by the Prime Minister of the country. The planning commission consists of Chairman, Deputy Chairman and 5 members. The Planning Commission works through 3 major divisions:

- Programme Advisors
- General Secretariat
- Technical Divisions
Planning Commission reviews, from time to time, the progress made in various directions and makes recommendations to Government on problems and policies relevant to rapid and balanced economic development.

Health Sector Planning

The Planning Commission gave considerable importance to health programmes in overall development of the country. The health sector is divided into the following subsectors:

<table>
<thead>
<tr>
<th>Subsectors of Health in Planning Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Water supply and sanitation</td>
</tr>
<tr>
<td>● Communicable diseases</td>
</tr>
<tr>
<td>● Medical education, training and research</td>
</tr>
<tr>
<td>● Curative services i.e., Hospitals, PHCs, etc.</td>
</tr>
<tr>
<td>● Public Health Services</td>
</tr>
<tr>
<td>● Family Planning</td>
</tr>
<tr>
<td>● Indigenous Systems of Medicine</td>
</tr>
</tbody>
</table>

All the above subsectors receive due importance in five year plans, however the priority changes from plan to plan depending upon the felt needs of the community, technical considerations and the progresses made. A Bureau of Planning was constituted in 1965 in the Ministry of Health to have better coordination between Centre and State Governments. The working of the national plans is reviewed time to time by National Development Council (NDC), which decides the social and economic policy affecting national development.

Health Finance Indicators

Health finance indicators include allocations under five year plans, expenditure on health, trends in public and private spending. It provides an understanding of patterns of investments, expenditure, sources of funding and proportion of allocation in the health sector, vis-a-vis other total allocations.

Budgetary Allocations: Health in India, like most social sectors, is a state subject and the contribution of the state governments to health spending is between 80 and 85 per cent. While in the recent years the Union government has substantially hiked its contribution to the health budget increasing at 30 per cent per annum, in itself this makes a very small impact on the overall health budget. Presently, the health budget of state and central governments combined is less than one percent of GDP.

In India there has been a growing analysis of health budgets and health expenditures. The economic reforms of the 90’s have created a trajectory of public health spending that shows a downward trend both in terms of share of the government budget as well as a proportion of the Gross Domestic Product. Prior to economic reforms in the mid-80s, public health expenditures had peaked 1.6 per cent of the GDP and was 3.95 per cent of government’s budget. By 2001, these figures read a dismal 0.9 per cent and 2.7 per cent, respectively, and further down to 0.8 and 2.4 per cent in 2005. What was worse was the decline in new investments by the Ministry of Health as reflected in the decline in capital expenditures from a robust 12 per cent in 1986-87 to a mere four per cent in 2000-01 and only a slight improvement in 2004-05 at five per cent.

Government expenditure on health as percentage of total expenditure on health is 24.8% while that of Private Expenditure is 75.2%. Public spending on health has increased from 0.22% of GDP in 1950-51 to 1.05% of GDP during the mid 1980s and stagnated at around 0.9% of GDP during the later years. India spent approx Rs 1,08,732 Crores on health and health related expenditure during 2001-02. This amounted to about 4.8% of the estimated GDP at market prices in 2001-02. National health expenditures, when taken as a proportion of GDP at factor cost, were 5.2%. Since 1995-96 household expenditure on health has been growing at the current rate of approx 14% overall. In 1995-96, households in India spends an estimated Rs 33,253 crores at nominal prices which is estimated to have increased to Rs 72,759 crores in 2001-02. With an overall growth rate of 14% household spending, it is likely to be close to Rs 1,00,000 crores in nominal terms during 2003-04.

| Table - 1 : Allocations for Selected Key Programs in the Union Health Budget (Rs Crores) |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Programme                                     | 2004-05                                      | 2005-06                                      | 2006-07                                      |
| Hospitals & Dispensaries                      | 240.75                                       | 268.70                                       | 263.25                                       |
| Medical edn & Research                        | 912.82                                       | 1397.33                                      | 1436.64                                      |
| AYUSH                                         | 225.73                                       | 405.98                                       | 447.89                                       |
| NACO - HIV/AIDS                               | 232.00                                       | 476.50                                       | 636.67                                       |
| RCH                                           | 710.51                                       | 881.73                                       | 1765.83                                      |
| Pulse Polio                                   | 852.00                                       | 1004.00                                      |                                               |
| Routine Immunisation                          | 1186.40                                      | 472.60                                       | 326.50                                       |
| FW services & contraception                  | 1948.71                                      | 2412.41                                      | 1942.61                                      |
| Area Projects                                 | 123.01                                       | 501.26                                       | 205.57                                       |
| NRH Mission Flexible Funds                    |                                             |                                               | 1530.88                                      |

Source: Demand for Grants, respective Budget years, Ministry of Finance, GOI, New Delhi

Table - 1 looks at and summarises some of the key programmatic allocations in the Union Health Budget. Here we see that traditional sectors like hospitals, medical education and family planning services are now receiving a smaller chunk of the health budget in comparison to the “new” sectors like RCH, HIV/AIDS, immunization (especially pulse polio). From the 2005-06 budget onwards, NRHM has taken a large share of the RCH and Family Planning budgets giving a boost to rural health allocations.

Five Year Plans

The five year plans were conceived for organised development of the country by planning a long term road map focussing on sustained development instead of short term gains. It lays main emphasis on rebuilding rural India, industrial development, health for all and balanced development in all sectors. Planning Commission laid special emphasis on health programmes with the broad objectives of:

a) Control and eradication of major communicable diseases of public health importance.
b) Strengthening basic rural health services by establishing...
Sub-centres and Primary Health Centres.
c) Population Control.
d) Development of health manpower resources.
Health planning has been ensured of proper investment through successive five year plans, which is as under showing pattern of allocation since inception. The overall outlays during the various plan periods are shown in Fig. - 1 & Table-2 respectively.

**First plan (1951-1956)**
The first Indian Prime Minister, Shri Jawaharhlal Nehru presented the first five-year plan to the Parliament of India on December 8, 1951. The total plan budget of 206.8 billion INR (23.6 billion USD in the 1950 exchange rate) was allocated to seven broad areas: irrigation and energy (27.2 percent), agriculture and community development (17.4 percent), transport and communications (24 percent), industry (8.4 percent), social services (16.64 percent), land rehabilitation (4.1 percent), and other (2.5 percent).
The target growth rate was 2.1 percent annual gross domestic product (GDP) growth; the achieved growth rate was 3.6 percent. During the first-five year plan the net domestic product went up by 15 percent. Lower increase of per capita income as compared to national income was due to rapid population growth. The World Health Organization, with the Indian government, addressed children's health and reduced infant mortality, contributing to population growth.

**Second plan (1956-1961)**
The second five-year plan focused on industry, especially heavy industry. Domestic production of industrial products was encouraged, particularly in the development of the public sector.

**Third plan (1961-1966)**
The third plan stressed on agriculture and improving production of rice, but the brief Sino-Indian War in 1962 exposed weaknesses in the economy and shifted the focus towards defence. In 1965-1966, the Green Revolution in India advanced agriculture. The war led to inflation and the priority was shifted to price stabilization.

In an effort to bring democracy to the grassroot level, Panchayat elections were started and the states were given more development responsibilities.

Gross Domestic Product rate during this duration was lower at 2.7% due to 1962 Sino-Indian War and Indo-Pakistani War of 1965.

**Table - 2 : Pattern of central Allocation (Rs in Crores) in Five Year Plans**

<table>
<thead>
<tr>
<th>S No</th>
<th>Period</th>
<th>Total Investment</th>
<th>Health</th>
<th>Family Welfare</th>
<th>AYUSH</th>
<th>SubTotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First Plan (1951-56)</td>
<td>1960.00</td>
<td>65.2 (3.3)</td>
<td>0.1 (0.1)</td>
<td></td>
<td>65.3 (3.4)</td>
</tr>
<tr>
<td>2</td>
<td>Second Plan (1956-61)</td>
<td>4672.00</td>
<td>140.8 (3.0)</td>
<td>5.0 (0.1)</td>
<td>145.8 (3.1)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Third Plan (1961-66)</td>
<td>8576.5</td>
<td>225.9 (2.6)</td>
<td>24.9 (0.3)</td>
<td>250.8 (2.9)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Annual Plans (1966-69)</td>
<td>6625.4</td>
<td>140.2 (2.1)</td>
<td>70.4 (1.1)</td>
<td>210.6 (3.2)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Fourth Plan (1969-74)</td>
<td>15778.8</td>
<td>335.5 (2.1)</td>
<td>278.0 (1.8)</td>
<td>613.5 (3.9)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Fifth Plan (1974-79)</td>
<td>39426.2</td>
<td>760.8 (1.9)</td>
<td>491.8 (1.2)</td>
<td>1252.6 (3.1)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Annual Plan (1979-80)</td>
<td>12176.5</td>
<td>223.1 (1.8)</td>
<td>118.5 (1.0)</td>
<td>341.6 (2.8)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Sixth Plan (1980-85)</td>
<td>109291.7</td>
<td>2025.2 (1.8)</td>
<td>1387.0 (1.3)</td>
<td>3412.2 (3.1)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Seventh Plan (1985-90)</td>
<td>218729.6</td>
<td>3688.6 (1.7)</td>
<td>3120.8 (1.4)</td>
<td>6809.4 (3.1)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Annual Plan (1990-91)</td>
<td>61518.1</td>
<td>960.9 (1.6)</td>
<td>784.9 (1.3)</td>
<td>1745.8 (2.9)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Annual Plan (1991-92)</td>
<td>65855.8</td>
<td>1042.2 (1.6)</td>
<td>856.6 (1.3)</td>
<td>1898.8 (2.9)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Eight Plan (1992-97)</td>
<td>434100.0</td>
<td>7494.2 (1.7)</td>
<td>6500.0 (1.5)</td>
<td>108.0 (0.02)</td>
<td>14102.2 (3.2)</td>
</tr>
<tr>
<td>13</td>
<td>Ninth Plan (1997-02)</td>
<td>859200.0</td>
<td>19818.4 (2.31)</td>
<td>15120.2 (1.76)</td>
<td>266.35 (0.03)</td>
<td>35204.95 (4.09)</td>
</tr>
<tr>
<td>14</td>
<td>Tenth Plan (2002-07)</td>
<td>1484131.3</td>
<td>31020.3 (2.09)</td>
<td>27125.0 (1.83)</td>
<td>775.0 (0.05)</td>
<td>58920.3 (3.97)</td>
</tr>
<tr>
<td>15</td>
<td>Eleventh Plan (2007-12)</td>
<td>2156571.0</td>
<td>156147.0 (6.5%)</td>
<td>3988.0 (0.18%)</td>
<td>140155.0 (6.5%)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:- (a) Dept of ISM & H (now AYUSH) was created during 8th plan period (b) Figures in bracket indicate percentage to total plan investment outlay (c) Dept of Health and Family Welfare were merged from 2005
Fourth plan (1969-1974)
At this time Smt Indira Gandhi was the Prime Minister. The Indira Gandhi government nationalized 19 major Indian banks. In addition, the situation in East Pakistan (now independent Bangladesh) was becoming dire as the Indo-Pakistani War of 1971 and Bangladesh Liberation War took place.

Fifth plan (1974-1979)
Stress was laid on employment, poverty alleviation, and justice. The plan also focused on self-reliance in agricultural production and defense. In 1978, the newly elected Morarji Desai government rejected the plan.

Sixth plan (1980-1985)
Called the Janata government plan, the sixth plan marked a reversal of the Nehruvian model. When Rajiv Gandhi was elected as the prime minister, the young prime minister aimed for rapid industrial development, especially in the area of information technology. Family planning was expanded in order to prevent overpopulation. In contrast to China’s harshly-enforced one-child policy, Indian policy did not rely on the threat of force. More prosperous areas of India adopted family planning more rapidly than less prosperous areas, which continued to have a high birth rate.

Seventh plan (1985-1989)
The Seventh Plan marked the comeback of the Congress Party to power. The plan lay stress on improving the productivity level of industries by upgradation of technology.

Period between 1989-91
1989-91 was a period of political instability in India and hence no five year plan was implemented. Between 1990 and 1992, there were only Annual Plans. At that time Dr. Manmohan Singh (currently, Prime Minister of India) launched India’s free market reforms that brought the economic stability in the country. It was the beginning of privatization and liberalization in India.

Eighth plan (1992-1997)
Modernization of industries was a major highlight of the Eighth Plan. This plan can be termed as Rao and Manmohan model of Economic development. The major objectives include Containing population growth, poverty reduction, employment generation, strengthening the infrastructure, institutional building, HUMAN RESOURCE DEVELOPMENT, Involvement of Panchayat raj, Nagarapalikas, NGOs and Decentralisation and people’s participation.

Ninth plan (1997-2002)
During the Ninth Plan period, the growth rate was 5.35 per cent, a percentage point lower than the target GDP growth of 6.5 per cent.

Tenth plan (2002-2007)
The main objectives of the 10th Five-Year Plan were:
- Reduction of poverty ratio by 5 percentage points by 2007;
- Providing gainful and high-quality employment to the labour force;
- All children in India in school by 2003; all children to complete 5 years of schooling by 2007;
- Reduction in gender gaps in literacy and wage rates by at least 50% by 2007;
- Reduction in the decadal rate of population growth between 2001 and 2011 to 16.2%;
- Increase in Literacy Rates to 75 per cent within the Tenth Plan period (2002-3 to 2006-7);
- Reduction of Infant mortality rate (IMR) to 45 per 1000 live births by 2007 and to 28 by 2012;
- Reduction of Maternal Mortality Ratio (MMR) to 2 per 1000 live births by 2007 and to 1 by 2012;
- All villages to have sustained access to potable drinking water within the Plan period.

Goals & Achievements during Tenth Plan are given in Table-3.

Table - 3 : Goals and Achievements during Tenth Plan

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Goal for Tenth Plan</th>
<th>Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decadal Rate of Population Growth</td>
<td>16.2%</td>
<td>15.9% for 2001-11 (Projected)</td>
</tr>
<tr>
<td>Infant Mortality Rate</td>
<td>45 per 1000 live births</td>
<td>58 per 1000 live births</td>
</tr>
<tr>
<td>Maternal Mortality Ratio</td>
<td>2 per 1000 live births</td>
<td>3.01 per 1000 live births</td>
</tr>
</tbody>
</table>


Review of Tenth Plan Schemes: The Tenth Five-Year Plan (2002-07) indicated the dismal picture of the health services infrastructure and emphasized the need to invest more on building good primary-level care and referral services. To review the health services framework, design, and approach within which the policies were formulated the National Rural Health Mission was launched.

The original approved health and family welfare outlay for the Tenth Plan centrally sponsored and central sector schemes was Rs 36,378 crore. However, the sum of annual outlay increased to Rs 41,585 crore. Against this, the actual expenditure has been Rs 34,950.45 crore, that is, 84.05% of the sum of annual outlay. In 2005-06, all family welfare schemes and major disease control programmes were put under the umbrella of the National Rural Health Mission.

Review of the National Rural Health Mission at the end of the Tenth Plan reveals that in order to improve the public health delivery, the situation needs to change on a fast track mode at the grassroots.

The status as on 30 April, 2008 is as under:

(a) State Health Missions have been constituted in all states.
(b) ASHA training modules developed and revised.
(c) Over 1500 management professionals (CA/MBA) appointed in Program Management Units (PMU) to support the programme management. This is being planned at the level of the block also.
(d) RCH-II launched and under implementation.
(e) IMNCI started in 142 districts.
Legal changes brought about to allow ANMs to dispense medication and MBBS doctors to dispense anesthesia.

At 1,611 PHCs AYUSH doctors have been co-located

228413 Village Health & Sanitation Committees (VHSCs) have been constituted and operational by 30 April 2008.

Against the target of 5 lakh fully trained Accredited Social Health Activists (ASHAs) by 2008, the initial phase of training (first module) has been imparted to 5.36 lakh. ASHAs in position with drug kits are 224951 in number.

Out of the 145272 Sub-centres (SCs) expected to be functional with 2 Auxiliary Nurse Midwives (ANMs) by 2008, only 22471 had the same.

22,370 Primary Health Centres (PHCs) are functional and out of which 3450 PHCs are functional with three staff nurses by 2008.

There has been a shortfall of 5,498 (>50%) specialists at the Community Health Centres (CHCs). Total CHCs functional are 4,045 out of which 2,966 have been selected to be upgraded to IPHS.

Number of Districts where annual integrated action plan under NRHM have been prepared for 2007-08 are 485.

Eleventh plan (2007-2012)
The Eleventh Five Year Plan provides an opportunity to restructure policies to achieve a New Vision based on faster, broad-based, and inclusive growth.

Goal: To achieve good health for people, especially the poor and the underprivileged.

Strategies
1. A comprehensive approach that encompasses individual health care, public health, sanitation, clean drinking water, access to food, and knowledge of hygiene and feeding practices.
2. To increase aggregate spending on health by the Centre and the states.
3. The contribution of the private sector in providing primary, secondary, and tertiary services.
4. Good governance, transparency, and accountability in the delivery of health services.
5. Health as a right for all citizens is the goal that the Plan will strive towards.

Time-Bound Goals for the Eleventh Five Year Plan
1. Income & Poverty
   - Accelerate GDP growth from 8% to 10% and then maintain at 10% in the 12th Plan in order to double per capita income by 2016-17.
2. Education
   - Reduce dropout rates of children from elementary school from 52.2% in 2003-04 to 20% by 2011-12
   - Increase literacy rate for persons of age ≥ 7 years to 85%
   - Lower gender gap in literacy to 10 percentage points
   - Increase the percentage of each cohort going to higher education from the present 10% to 15% by the end of the plan
3. Health
   - Reduce infant mortality rate to 28 and maternal mortality ratio to 1 per 1000 live births
   - Reduce Total Fertility Rate to 2.1
   - Provide clean drinking water for all by 2009 and ensure that there are no slip-backs
   - Reduce malnutrition among children of age group 0-3 to half its present level
   - Reduce anaemia among women and girls by 50% by the end of the plan

4. Women and Children
   - Raise the sex ratio for age group 0-6 to 935 by 2011-12 and to 950 by 2016-17
   - Ensure that all children enjoy a safe childhood, without any compulsion to work

5. Infrastructure
   - Provide homestead sites to all by 2012 and step up the pace of house construction for rural poor to cover all the poor by 2016-17

6. Environment
   - Attain WHO standards of air quality in all major cities by 2011-12
   - Treat all urban waste water by 2011-12 to clean river waters

Eleventh Five Year Plan Agenda in Health Sector: Thrust areas to be pursued during the Eleventh Five Year Plan are summarized below:

1. Improving Health Equity
   i. National Rural Health Mission (NRHM)
   ii. National Urban Health Mission (NUHM)

2. Adopting a system-centric approach rather than a disease-centric approach
   i. Strengthening Health System through upgradation of infrastructure and public private partnership
   ii. Converging all programmes and not allowing vertical structures below district level under different programmes

3. Increasing Survival
   i. Reducing Maternal mortality and improving Child Sex ratio through Gender Responsive Health care
   ii. Reducing Infant and Child mortality through Home Based Neonatal Care (HBNO) and Integrated Management of Neonatal and Childhood Illnesses (IMNCI)

4. Taking full advantage of local enterprise for solving local health problems
   i. Integrating AYUSH in Health System
   ii. Increasing the role of Registered Medical Practitioners
   iii. Training the Traditional Birth Attendants (TBAs) to make them Skilled Birth Attendants (SBAs)
   iv. Propagating low cost and indigenous technology

5. Preventing indebtedness due to expenditure on health/protecting the poor from health expenditures
   i. Creating mechanisms for Health Insurance
   ii. Health Insurance for the unorganized sector

6. Decentralizing Governance
   i. Increasing the role of PRIs, NGOs, and Civil Society
   ii. Creating and empowering Health committees at various levels
7. Establishing e-Health
   i. Adapting IT for governance
   ii. Establishing e-enabled Health Management Information System
   iii. Increasing role of telemedicine
8. Improving access to and utilization of essential and quality health care
   i. Implementing flexible norms for health care facilities (based on population, distance and terrain)
   ii. Reducing travel time to two hrs for emergency obstetric care
   iii. Implementing Indian Public Health Service Standards for health care institutions at all levels
   iv. Accrediting private health care facilities and providers
   v. Redeveloping hospitals/institutions
   vi. Mirroring of centres of excellence like AIIMS
9. Increasing focus on Health Human Resources
   i. Improving Medical, Paramedical, Nursing, and Dental education and availability
   ii. Reorienting AYUSH education and utilization
   iii. Reintroducing licentiate course in medicine
   iv. Making India a hub for health care and related tourism
10. Focusing on excluded/neglected areas
   i. Taking care of the Older persons
   ii. Reducing Disability and integrating disabled
   iii. Providing humane Mental Health services
   iv. Providing Oral health services
11. Enhancing efforts at disease reduction
   i. Reversing trend of major diseases
   ii. Launching new initiatives (Rabies, Fluorosis, Leptospirosis)
12. Providing focus to Health System and Bio-Medical research
   i. Focusing on conditions specific to our country
   ii. Making research accountable
   iii. Translating research into application for improving health

Schemes and Outlays for Eleventh Five Year Plan: To achieve the desired outcomes in the health sector, a substantially enhanced outlay for the Department of Health and Family Welfare has been earmarked during the Eleventh Five Year Plan (2007-12). The total projected GBS for the Eleventh Plan is Rs 1,20,374.00 crore (at current prices). This enhanced outlay is about four times the initial outlay for the Tenth Plan (Rs 36,378.00 crore). A large proportion of this amount i.e. Rs 89,478.00 crore (65.72 %) is for NRHM, the flagship of the Government of India. Another Rs 625 crore is to be contributed by the Dept. of AYUSH to make a total of Rs 90,103 crore for NRHM during the Eleventh Five Year Plan. For the other ongoing schemes, a total of Rs 23,995.05 crore has been earmarked. For the new initiatives it is Rs. 20,846.95 crore. Rs. 1,827.00 crore has also been earmarked for Oversight Committee.

Summary
Since Independence, India has built up a vast health infrastructure and health personnel at primary, secondary, and tertiary care in public, voluntary, and private sectors. The country has to deal with rising costs of health care and growing expectations of the people. The role of scientific health planning at the national level, to achieve this goal, needs no highlighting. Among socialist countries, India is the first and foremost country to show tradition of health planning. After Independence in 1950 the present Planning Commission was established, which launched first five year plan in 1951. The Planning Commission was set up to make an assessment of the material, capital and human resources of the country, and to draft developmental plans for the most effective utilisation of these resources addressing the needs of the community and country at large. There are 29 divisions in the Planning Commission. The planning commission consists of Chairman, Deputy Chairman and 5 members. The Planning Commission works through 3 major divisions: Programme Advisors, General Secretariat & Technical Divisions. The health sector is divided into the following subsectors: Water supply and sanitation, Communicable diseases, Medical education, training and research; Curative services i.e., Hospitals, PHCs, etc, Public Health Services, Family Planning & Indigenous Systems of Medicine. A Bureau of Planning was constituted in 1965 in the Ministry of Health to have better coordination between Centre and State Governments. The working of the national plans is reviewed time to time by National Development Council (NDC), which decides the social and economic policy affecting national development. The five year plans were conceived for organised development of the country by planning a long term road map focusing on sustained development instead of short term gains. It lays main emphasis on rebuilding rural India, industrial development, health for all and balanced development in all sectors. Planning Commission laid special emphasis on health programmes with the broad objectives of: a) Control and eradication of major communicable diseases of public health importance, b) Strengthening basic rural health services by establishing Subcentres and Primary Health Centres, c) Population Control, d) Development of health manpower resources. Health planning has been ensured of proper investment through successive five year plans, which is as under showing pattern of allocation since inception.

Study Exercises
Long Question: Discuss the strategies, time bound goals & schemes of 11th five yr plan.
Short Notes: (1) Planning commission (2) Health sector planning (3) Achievements of 10 five yr plan.
MCQs:
1. The 3 major divisions of Planning Commission are all except: (a) Programme Advisors (b) General Secretariat
2. All are the sub-sectors of health in planning commission except (a) Water supply and sanitation (b) Medical education, training and research (c) Indigenous Systems of Medicine (d) Agriculture

3. Broad objectives of Five year plan are: (a) Control and eradication of major communicable diseases of public health importance (b) Strengthening basic rural health services by establishing Sub-centres and Primary Health Centres (c) Population Control (d) All

4. One of the following is not the strategies of 11th plan: (a) To increase aggregate spending on health by the Centre and the states (b) The contribution of the private sector in providing primary, secondary, and tertiary services (c) To establish medical colleges in rural sectors of country (d) Health as a right for all citizens is the goal.

5. 11th Plan will strive towards: (a) Accelerate GDP growth from 8% to 10% and then maintain at 10% in the 12th Plan in order to double per capita income by 2016-17 (b) Raise the sex ratio for age group 0-6 to 935 by 2011-12 and to 950 by 2016-17 (c) Attain WHO standards of air quality in all major cities by 2011-12 (d) All

6. India is the world’s 10th largest economy and the third largest in Asia behind Japan and China, with total GDP of around 1 trillion. True / False

7. Growth for the year ending March 31, 2008 is expected to be between 8.5-9.0%. True / False

8. There are 22 divisions in the Planning Commission. True / False

9. A Bureau of Planning was constituted in 1965 in the Ministry of Health to have better coordination between Centre and State Governments. True / False

10. The working of the national plans is reviewed time to time by National Development Council (NDC), which decides the social and economic policy affecting national development. True / False

11. Contribution of the state governments to health spending is between 80 and 85 per cent. True / False

12. Presently, the health budget of state and central governments combined is less than one percent of GDP. True / False

13. Traditional sectors like hospitals, medical education and family planning services are now receiving a greater chunk of the health budget in comparison to the “new” sectors like RCH, HIV/AIDS, immunization (especially pulse polio). True / False

14. From the 2005-06 budget onwards, NRHM has taken a large share of the RCH and Family Planning budgets giving a boost to rural health allocations. True / False

15. Government expenditure on health as a percentage of total expenditure on health is 24.8% while that of Private Expenditure is 75.2%. True / False

16. Public spending on health has increased from 0.22% of GDP in 1950-51 and stagnated at around 10% of GDP during the later years. True / False

17. Planning Commission was provided with a Perspective Planning Division which makes projections into the future over a period of 20-25 years. True / False

Answers: (1) d; (2) d; (3) d; (4) c; (5) d; (6) False; (7) True; (8) False; (9) True; (10) True; (11) True; (12) True; (13) False; (14) True; (15) True; (16) False; (17) True.

Further Suggested Reading
1. India’s Five Year Plans, Complete Documents, Academic Foundation, New Delhi.
3. League of Nations Health Organisation, European Conference on Rural Hygiene (1931), Recommendations on the principles governing the organization of Medical Assistance, the Public Health Services and Sanitation in Rural Districts, Geneva.
National Health Policy (NHP) - 2002

Policies are “courses” or “principles” of action adopted or proposed by a Government. In the developing countries like India, resources often fall short of requirements, the Government policies then guide us to set priorities and allocate resources to achieve our objectives. Health policies are intended to achieve a level of health status for most of the persons in the community. The policies enacted by various Government bodies have formal framework with legal backup. Health policy aims at the improvement of the conditions under which people live, including housing, education, nutrition, child care, reproductive health, transportation, information and communication.

Background

In 1977, the World Health Assembly at Alma Ata decided to launch an ambitious movement known as, “Health for All (HFA) by 2000 AD”. This broadly means attainment of level of health that will permit all people to lead economically and socially productive life. As a signatory to HFA strategy, the Government of India was committed to frame its own policy and implement to attain Health For All by 2000 AD. In pursuance of this objective, two important committees were framed to study this strategy in detail keeping in view local percept. These were, firstly, the Report of the study Group on ‘Health for All - an alternative strategy’, Sponsored by ICSSR and ICMR, and, secondly, Report of the working group on ‘Health For All by 2000 AD’ sponsored by Ministry of Health and Family Welfare (MOHFW), Government Of India. These reports formed the basis of the National Health Policy formulated by MOHFW, GOI in 1983. Since, the inception of National Health Policy there have been marked changes in the determinants of health. Some of the policy initiatives outlined in the NHP-1983 yielded results, while in several other areas, the outcome was not as expected. These include remarkable successes like eradication of Guinea Worm. Polio is on the verge of being eradicated. Leprosy, Kala Azar, and Filariasis can be expected to be eliminated in the foreseeable future. There has been a substantial drop in the total fertility rate and infant mortality rate. The success of the initiatives taken in the public health field is reflected in the progressive improvements of many demographic, epidemiological and infrastructural indicators over the period 1951 to 2007 (Box - 1).

Improvement of these health indicators were the outcome of several complementary initiatives of development sector covering rural development, agriculture, food production, animal husbandry, drinking water, sanitation, education etc. Despite the impressive public health gains, the morbidity and mortality levels in the country were high as compared to developed countries. Over the years the incidence of some of the communicable diseases like Malaria, Tuberculosis, HIV/ AIDS, hepatitis and non communicable diseases like Cancers, lifestyle diseases, diabetes etc were on the rise and much more dedicated efforts were required to achieve goal of, “Health For All by 2000 AD”. After the passage of year 2000, it was the time to take stock of situation and progress ahead with extra zeal to achieve ultimate goal of Health For All. Accordingly, the NHP -
1983 was revised and a new, extensive NHP was enunciated by the Govt of India in 2002.

**Objective of National Health Policy (NHP) 2002**

The main objective of this policy is to achieve an acceptable standard of good health amongst the general population of the country. The noteworthy initiatives are presented in Box - 2

**Box - 2 : Noteworthy initiatives under the National Health Policy 2002**

- Comprehensive primary health care services
- Health volunteers
- Well worked out referral system
- Integrated network of evenly spread speciality and super speciality services

**Strategies**

The revised strategies adopted by GOI to achieve above objective are:

(a) Increase access to the decentralized public health system by establishing new infrastructure in deficient areas, and by upgrading the infrastructure in the existing institutions.

(b) Ensuring a more equitable access to health services across the social and geographical expanse of the country.

(c) Increasing the aggregate public health investment through a substantially increased contribution by the Central Government. It is expected that this initiative will strengthen the capacity of the public health administration at the state level to render effective service delivery.

(d) The contribution of the private sector in providing health services would be much enhanced.

(e) Primacy to preventive and first-line curative initiative at the primary health level.

(f) Emphasis will be laid on rational use of drugs within the allopathic system.

(g) Increased access to tried and tested systems of traditional medicine.

The endeavour of NHP-2002 is to achieve the time-bound goals mentioned in Box - 3, within the framework of strategies mentioned above.

On a short term basis, within the context of the NHP, the Important health related targets for the eleventh five year plan (2007 - 2012) are:

- Reducing Maternal Mortality Ratio (MMR) to 1 per 1,000 live births.
- Reducing Infant Mortality Rate (IMR) to 28 per 1,000 live births.
- Reducing Total Fertility Rate to 2.1.
- Providing clean drinking water for all by 2009 and ensuring no slip-backs.
- Reducing malnutrition among children of age group 0-3 to half its present level.
- Reducing anaemia among women and girls by 50%.
- Raising the sex ratio for age group 0-6 to 935 by 2011-12 and 950 by 2016-17.

**Major Strategies of NHP-2002**

(a) **Financial Resources :** It is concerning that Public Health expenditure has declined from 1.5% of GDP in 1990 to 0.9% of GDP in 1999. Given the difficult fiscal position of the State Governments, the Central Government will have to play a key role in ensuring that the aggregate public health investment increases substantially in order to meet the targets set for the NHP-2002.

**Box - 3 : Goals to be achieved by 2000 - 2015**

<table>
<thead>
<tr>
<th>Goals for which the target year is already over</th>
<th>Target Year</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eradicate Polio</td>
<td>2005</td>
<td>Not achieved</td>
</tr>
<tr>
<td>Eradicate Yaws</td>
<td>2005</td>
<td>Achieved</td>
</tr>
<tr>
<td>Eliminate Leprosy</td>
<td>2005</td>
<td>Achieved</td>
</tr>
<tr>
<td>Achieve Zero level growth of HIV/AIDS</td>
<td>2007</td>
<td>Not achieved</td>
</tr>
<tr>
<td>Establish an integrated system of surveillance, National Health Accounts and Health Statistics.</td>
<td>2005</td>
<td>IDSP has been launched</td>
</tr>
<tr>
<td>Increase State Sector Health spending from 5.5% to 7% of the total budget</td>
<td>2005</td>
<td>Not achieved</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goals for which time is available</th>
<th>Target Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminate Kala Azar</td>
<td>2010</td>
</tr>
<tr>
<td>Reduce Mortality by 50% on account of TB, Malaria and Other Vector and Water Borne diseases</td>
<td>2010</td>
</tr>
<tr>
<td>Reduce Prevalence of Blindness to 0.5%</td>
<td>2010</td>
</tr>
<tr>
<td>Reduce IMR to 30/1000 and MMR to 100/Lakh</td>
<td>2010</td>
</tr>
<tr>
<td>Increase utilization of public health facilities from current Level of &lt;20 to &gt;75%</td>
<td>2010</td>
</tr>
<tr>
<td>Increase health expenditure by Government from the existing 0.9% to 2.0% of GDP</td>
<td>2010</td>
</tr>
<tr>
<td>Increase share of Central grants to Constitute at least 25% of total health expenditure</td>
<td>2010</td>
</tr>
<tr>
<td>Increase State Sector Health spending from 5.5% to 7% of the budget and further increase to 8%</td>
<td>2010</td>
</tr>
<tr>
<td>Eliminate Lymphatic Filariasis</td>
<td>2015</td>
</tr>
</tbody>
</table>
role in augmenting public investments. It is planned, under the policy, to increase health sector expenditure by both central and state government as stated in Box 3 above. However, the higher public health investment should also be gainfully utilised by the public health administration for upliftment of health status of the community.

(b) Equitable distribution: To meet the objective of reducing various types of inequities and imbalances, i.e., interregional; across the rural - urban divide; and between economic classes - the most cost-effective method would be to increase the sectoral outlay in the primary health sector. Such outlets afford access to a number of individuals, and also facilitate preventive and early stage curative initiative. NHP-2002 sets out an increased allocation of 55 percent of the public health investment for the primary health sector, the secondary and tertiary health sectors being targeted for 35 percent and 10 percent respectively, for strengthening existing facilities and opening additional public service outlets.

(c) Delivery of National Public Health Programmes: The policy envisages a key role for the Central Government in designing national programmes with the active participation of the State Governments. Also, the policy ensures the provisioning of financial resources, in addition to technical support, monitoring and evaluation at the national level by the Centre. However, to optimize the utilization of the public health infrastructure at the primary level, NHP-2002 envisages the gradual convergence of all health programmes under a single field administration. Vertical programmes for control of major diseases like TB, Malaria, HIV/AIDS, as also the RCH and Universal Immunization programmes, would need to be continued till these diseases are no more a public health threat. The major change in programme implementation is through autonomous bodies at State and district levels whereas the role of district and state health departments will be limited to overall monitoring of achievements of programme targets and technical aspects. This will give better planning and operational flexibility and public health projects will be more suited to the local needs.

(d) The State of Public Health Infrastructure: The NHP 2002 envisages kick-starting the revival of the Primary Health System by providing some essential drugs under Central Government funding. This policy recognizes the need for more frequent in service training of public health medical personnel, at the level of medical officers as well as paramedics. Further, it also recognizes the practical need for levying reasonable user-charges for certain secondary and tertiary public health care services for those who can afford to pay.

(e) Extending Public Health Services: For better availability and distribution of medical personnel in their jurisdiction, State Governments will expand the pool of medical practitioners to include a cadre of licentiates of medical practice, practitioners of Indian Systems of Medicine and Homoeopathy. Simple services/procedures can be provided by such practitioners even outside their disciplines, as part of the basic primary health services in under-served areas after adequate training and subject to the monitoring of their performance through professional councils. The scope of expanding services of paramedical personnel from existing usage will be examined on lines of services rendered by nurse practitioners in several developed countries.

(f) Role of Local Self-Government Institutions: NHP-2002 lays great emphasis upon the implementation of public health programmes through local self government institutions. The financial incentives will be provided by Central Government.

(g) Norms for Health Care Personnel: Minimal statutory norms for the development of doctors and nurses in medical institutions need to be introduced urgently under the provisions of the respective MCI and INC acts.

(h) Education of Health Care Professionals: Keeping in view the uneven distribution of colleges in the country, the policy envisages the setting up of a Medical Grants Commission for funding new Government Medical and Dental Colleges and upgradation of existing colleges in different parts of the country. The existing curriculum can be modified to a more need-based, realistic, skill oriented syllabus, at undergraduate level with a more significant component of practical training. This would make fresh doctors contribute effectively to providing of primary health services immediately after graduation. The policy recommends periodic skill updating through Continuing Medical Education (CME) programmes on important health issues.

(i) Need for Specialists In Public Health and Family Medicine: In order to alleviate the acute shortage of medical personnel in public health, the policy envisages to raise the proportion of postgraduate seats in the field of ‘Public Health’ and ‘Family Medicine’ progressively to reach a stage wherein 1/4th of the seats are earmarked for these disciplines. Since the public health discipline has an interface with many other developmental sectors, specialization in public health may be encouraged not only for medical doctors, but also for non-medical graduates from the allied fields of public health engineering, microbiology and other natural sciences.

(k) Nursing Personnel: In the interest of patient care, the policy emphasises the need for an improvement in the ratio of nurses vis-a-vis doctors/beds and an increase in degree holding nurses vis-a-vis diploma holding nurses and training of super speciality nurses.

(l) Use of Generic Drugs and Vaccines: NHP emphasizes the need for basing treatment regimens on generic drugs rather than proprietary drugs, except in special circumstances. This is a pre-requisite for cost effective public health care and production and sale of irrational combination of drugs would be prohibited through the drug standard statute. The UIP should be assured of uninterrupted supply of vaccines mainly from public sector institutions so that they are available at an affordable price.

(m) Urban Health: NHP-2002 envisages the setting up of an organized urban primary health care structure based on appropriate population norms. The structure conceived under NHP-2002 is a two-tiered one; the Primary centre covering a population of one lakh, with a dispensary providing an OPD facility and essential drugs, to enable access to all the national health programmes, and a second-tier of the urban health organization at the level of the Government general hospital, where referral is made from the primary centre. The funding of UHC will be jointly borne by state and centre. The policy
also recommends establishment of fully equipped trauma care networks to reduce accidental mortality and morbidity.

(n) Mental Health: NHP-2002 envisages a network of decentralized mental health services and the diagnosis of common disorders, and the prescription of common therapeutic drugs by general duty medical staff. Central Government has also committed to upgrade physical infrastructure of mental health institutions for indoor treatment of patients.

(o) Information, Education And Communication (IEC): NHP-2002 envisages an IEC policy, which maximizes the dissemination of information to those population groups which cannot be effectively approached by using only the mass media. The focus would therefore be on the interpersonal communication of information and on folk and other traditional media to bring about behavioral change. Dispelling of myths and misconceptions about religious and ethical issues by the community leaders, particularly religious leaders is an effective way for behavioural change in the community. NHP 2002 also gives priority to school health programmes which aim at preventive health education, providing regular health check-ups and promotion of health seeking behaviour amongst children.

(p) Health Research: The policy envisages an increase in Government funded health research to a level of 2 percent by 2010. Domestic medical research would be focused on new therapeutic drugs and vaccines for tropical diseases, such as TB and Malaria, as also on the sub-types of HIV / AIDS prevalent in the country. Private entrepreneurship will be encouraged in the field of medical research.

(q) Role of The Private Sector: In principle, this policy welcomes the participation of the private sector in all areas of health activities - primary, secondary or tertiary. It envisages the enactment of suitable legislation for regulating minimum infrastructure and quality standards in private clinical establishments / medical institutions along with statutory guidelines for the conduct of clinical practise. The NHP envisages the co-operation of private practitioners and NGOs in the national disease control programmes.

(r) The Role of the Civil Society: The policy emphasizes the need to simplify procedures for government - civil society interfacing in order to enhance the involvement of civil society in public health programmes.

(s) National Disease Surveillance Network: This Policy envisages the setting up of an integrated disease control network from the lowest rung of public health administration to the Central Government. This public health surveillance network will also encompass information from private health care institutions and practitioners. It is expected that real-time information will greatly strengthen the capacity of the public health system to counter local outbreaks of seasonal diseases.

(t) Health Statistics: The policy envisages the compilation of baseline estimates for the incidence of the common diseases. The policy proposes to enable the periodic updating of these baseline estimates through representative sampling, under an appropriate statistical methodology, so that the public health system would move closer to the objective of evidence-based policy-making.

(u) Women’s Health: The policy envisages the increased access of women and underprivileged groups to basic health care of primary health sector and gives highest priority to the identified programmes relating to women’s health.

(v) Regulation of standards of Para Medical Disciplines and Medical Ethics: The NHP 2002 recognises the need for the establishment of statutory professional councils for paramedical disciplines to register paramedic practitioners, maintain standards of training, and monitor performance. The policy also recommends that a contemporary code of ethics be notified and rigorously implemented by the Medical Council of India as well as the need to watch newer areas like gene manipulation, and stem cell research.

(w) Enforcement of Quality Standards for Food and Drugs: The NHP-2002 envisages that the food and drug administration will be progressively strengthened, in terms of both laboratory facilities and technical expertise. Food standards will be similar to Codex specifications and drug standards will be at par with the most rigorous ones adopted elsewhere.

(x) Environmental and Occupational Health: The policies and programmes of the environment related sectors be smoothly interfaced with the policies and the programmes of the health sector.

(y) Providing Medical Facilities to Users from Overseas: The policy strongly encourages the provision of secondary and tertiary health services on a payment basis to service seekers from overseas (Medical Tourism), due to comparatively cheaper cost.

(z) Impact of Globalisation on the Health Sector: The policy envisages a national patent regime for the future, which avails of all opportunities to secure for the country under its patent laws, affordable access to the latest medical and therapeutic discoveries.

National Population Policy (NPP) - 2000

In 1952, India became the first country in the world to launch a national program, emphasizing family planning to the extent necessary for reducing birth rates “to stabilize the population at a level consistent with the requirement of national economy”. The evolution of the national family planning programme is presented in Box - 4.

The National Health Policy, 1983, stated that replacement levels of fertility rate (TFR) should be achieved by the year 2000. On 11 May 2000, India had 1 billion (100 crore) people, i.e., 16 percent of the world’s population on 2.4 percent of the globe’s land area. If current trends continue, India may overtake China in 2045, to become the most populated country in the world. While global population has increased threefold during 20th century, from 2 billion to approximately 6 billion, the population of India has increased nearly five times from 238 million (23 crores) to 1 billion in the same period. India’s current yearly increase in population of 15.5 million is enough to neutralize efforts to conserve our efforts towards resource endowment and environment.

The National Population Policy (NPP) 2000 provides a policy framework for advancing goals and prioritizing strategies during the next decade, to meet the reproductive and child
health needs of the people in India, and to achieve net replacement levels (TFR) by 2010. It is based upon the need to simultaneously address issues of child survival, maternal health and contraception, while increasing outreach and coverage of a comprehensive package of reproductive and child health service by government, industry and voluntary non-government sector, working in partnership. The NPP affirms the commitment of government towards voluntary and informed choice and consent of citizens while availing reproductive health care services, and continuation of the target free approach in administering family planning services. The objectives of NPP - 2000 are shown in Box - 5.

The major differences between the earlier approach and the newer approach, based on NPP - 2000 and RCH-II programme are shown in Box - 6.

National Socio Demographic Goals
In pursuance of these objectives, the following National Socio-Demographic Goals to be achieved by 2010 are formulated:

(a) Address the unmet needs for basic reproductive and child health services, supplies and infrastructure.
(b) Make school education up to age 14 free and compulsory, and reduce drop outs at primary and secondary school levels to below 20 percent for both boys and girls.
(c) Reduce infant mortality rate to below 30 per 1000 live births.
(d) Reduce maternal mortality ratio to below 100 per 100,000 live births.
(e) Achieve universal immunization of children against all vaccine preventable diseases.
(f) Promote delayed marriage for girls, not earlier than age 18 and preferably after 20 years of age.
(g) Achieve 80 percent institutional deliveries and 100 percent deliveries by trained persons.
(h) Achieve universal access to information / counselling, and services for fertility regulation and contraception with a wide basket of choices.
(j) Achieve 100 percent registration of births, deaths, marriages and pregnancies.
(k) Prevent and control communicable diseases.

<table>
<thead>
<tr>
<th>Year</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1925</td>
<td>Prof Raghunath Dhondo Karve opened the first birth control clinic in Mumbai</td>
</tr>
<tr>
<td>1938</td>
<td>National Planning Committee of the Indian National Congress set up in 1938 strongly supported Family Planning as a state policy</td>
</tr>
<tr>
<td>First five-year plan (1951-56)</td>
<td>India was the first country to have officially launched a well-defined family planning programme in 1951</td>
</tr>
<tr>
<td>Third five year plan (1961-66)</td>
<td>Extension wing was added to the existing programme, introduction of intrauterine device, integrated approach was adopted in 1966 and family planning formed an integral part of maternal and child health and nutritional services.</td>
</tr>
<tr>
<td>1968</td>
<td>Social marketing for condoms was introduced under which condoms or Nirodh were made available at highly subsidized price. And at this stage Lippies loop was introduced.</td>
</tr>
<tr>
<td>Fourth five year plan (1969-74)</td>
<td>Family planning services were integrated with Primary health care at this stage. 1970-All India Hospital Post Partum Programme (AIHPP) was launched. 1971-liberalisation of abortions by the govt. by passing MTP act.</td>
</tr>
<tr>
<td>Fifth five-year plan (1974-79)</td>
<td>The programme took the recourse in this time period with Mass Vasectomy Camp Approach leading to national emergency in 1975. The programme was renamed at this stage as Family Welfare Programme. Family welfare basket was filled with nutrition and child health programmes. 1975-Integrated Child Development Scheme. 1978-Child Marriage Restraint Act. India became signatory of Alma Ata declaration in 1978.</td>
</tr>
<tr>
<td>Sixth five-year plan (1980-85)</td>
<td>The national health policy diluted family planning and it became a part of concept of positive health and one of the means to achieve Health for All by 2000.</td>
</tr>
<tr>
<td>Seventh five-year plan (1986-90)</td>
<td>There was strengthening of Mother and child (MCH) services along with family welfare services. Other programmes as Oral Rehydration Therapy (ORT), control of respiratory group of infections and universal immunization programme were also included.</td>
</tr>
<tr>
<td>Eighth five-year plan (1992-97)</td>
<td>The programme was renamed again as Child survival and Safe Motherhood programme (CSSM) in 1992(7).</td>
</tr>
<tr>
<td>Ninth five-year plan (1997-2002)</td>
<td>Reproductive and Child Health programme was launched in 1997 comprising of Child Survival and Safe Motherhood (CSSM), Sexually transmitted infections (STI) and other components.</td>
</tr>
<tr>
<td>Tenth five year plan (2002-2007)</td>
<td>RCH II was launched with few modifications after evaluating RCH I</td>
</tr>
</tbody>
</table>
Integrate Indian System of Medicine (ISM) in the provision of RCH services, and in reaching out to households.

Promote vigorously the small family norm to achieve replacement level of TFR.

Contain the spread of Acquired Immuno Deficiency Syndrome (AIDS), and promote greater integration between the management of RTI and STI.

Bring about convergence in implementation of related social sector programmes so that family welfare becomes a people centered programme.

Targets set by NPP 2000 and Current Scenario

These are shown in Box - 7 and 8.

If the NPP - 2000 is fully implemented, we anticipate a population of 1107 million (110 crores) in 2010, instead of 1162 million (116 crores) projected by Technical Group on population Projections.

Causes of High Population Growth in India

Population growth in India continues to be high on account of following -

(a) Large size of population in the reproductive age group (estimated contribution 58 percent).
(b) Higher fertility due to unmet needs of contraception. (estimated contribution 20 percent).
(c) High desire for fertility due to high Infant Mortality Rate (estimated contribution about 20 percent).
(d) Approximately 50 percent of girls marry below the age of 18, resulting in a typical reproductive pattern of ‘too early

Major Strategies in NPP - 2000

There are 12 strategic themes in order to achieve the socio demographic goals by 2010. These are enumerated below:

(a) Decentralized Planning and Program Implementation.
(b) Convergence of Service Delivery at Village Levels.
(c) Empowering Women for Improved Health and Nutrition.
(d) Meeting the Unmet Needs for Family Welfare Services.
(e) Focus on Under-Served Population Groups.
(f) Involvement of men in planned parenthood.
(g) Action through diverse Health Care Providers.
(h) Collaboration with and Commitments from Non-Government Organizations and the Private Sector.
(i) Mainstreaming Indian System of Medicine and Homeopathy.
(j) Contraceptive Technology and Research on Reproductive and Child Health.
(k) Providing for the Older Population.
(l) Information, Education and Communication.

Operational Strategies

These include the following:

Box 5: Objectives of NPP - 2000

<table>
<thead>
<tr>
<th>Immediate objective</th>
<th>Medium-term objective</th>
<th>Long-term objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>To address the unmet needs for contraception</td>
<td>To bring the TFR to replacement levels by 2010</td>
<td>To achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development, and environmental protection</td>
</tr>
</tbody>
</table>

Box 6: Differences between older and newer approach (8).

<table>
<thead>
<tr>
<th>Old Approach (Family Planning)</th>
<th>New Approach (Reproductive and Child Health)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population-Centered</td>
<td>People-centered</td>
</tr>
<tr>
<td>Over-emphasis on sterilisation</td>
<td>Informed Choice of contraceptives</td>
</tr>
<tr>
<td>Quantitative targets</td>
<td>Qualitative targets</td>
</tr>
<tr>
<td>Family Planning in a separate basket</td>
<td>FP merged with Health: One package for Health, MCH &amp; FP</td>
</tr>
<tr>
<td>Focus on 30+ women with 3 or 4 children</td>
<td>Focus on new operation, in particular, adolescents (15-25 years)</td>
</tr>
<tr>
<td>Insensitive to gender issues</td>
<td>Focus on gender issues and concern for gender equity and elimination of discrimination against women</td>
</tr>
<tr>
<td>No consultation with people at the grassroot level</td>
<td>Decentralised programme run through panchayats &amp; nagarpalikas</td>
</tr>
<tr>
<td>Family Welfare Department - the sole custodian of population matters</td>
<td>Abolish the Department and establish a Population and Social Development Communion and Fund</td>
</tr>
</tbody>
</table>

- Preference of male child.
- More children are preferred by poor parents as more work force.
- ‘too frequent- too many’.
- Urban Slums
- Tribal communities, hill areas, displaced/migrant populations
- Adolescents
- Involvement of men in planned parenthood
- Action through diverse Health Care Providers
- Collaboration with and Commitments from Non-Government Organizations and the Private Sector
- Mainstreaming Indian System of Medicine and Homeopathy
- Contraceptive Technology and Research on Reproductive and Child Health
- Providing for the Older Population
- Information, Education and Communication
(a) Utilize village self help groups to organize and provide basic services for reproductive and child health care, combined with the ongoing ICDS scheme.

(b) Implement, at village levels, a one-stop integrated and coordinated service delivery package for basic health care, family planning and maternal and child health related services, provided by the community and for the community.

(c) Wherever these village self-help groups have not developed for any reason, community midwives, practitioners of ISM, retired school teachers and ex-defence personnel may be organized to perform similar functions.

(d) At village levels, the Anganwadi centre may become the pivot of basic health care activities, contraceptive counselling and supply, nutrition education and supplementation, as well as preschool activities. The Anganwadi centres can also function as depots for ORS/basic medicines and contraceptives.

(e) A maternity hut should be established in each village to be used as the village delivery room with storage space for supplies and medicines. It should be adequately equipped with kits for midwifery, ante-natal care, and delivery; basic medication for obstetric emergency aid; contraceptives, drugs and medicines for common ailments.

(f) Trained birth attendants as well as the vast pool of traditional dais should be trained and made familiar with emergency and referral procedures.

(g) Provide wider basket of choices in contraception, through innovative social marketing schemes to reach household levels.

(h) Improve district, sub-district and panchayat-level health management with coordination and collaboration between district health officer, sub-district health officer and the panchayat for planning and implementation activities.

(i) Strengthen Community Health Centres (CHCs) and PHCs to provide comprehensive essential and emergency obstetric and neo-natal care.

(j) Strengthening skills of health personnel and health providers through classroom and on-the-job training.

(k) Focus attention on men in the information and education campaigns to promote the small family norm.

(l) Sensitize, train and equip rural and urban health centres and hospitals towards providing geriatric health care.
Promotional and Motivational Steps for Adopting Small Family Norm in NPP
(a) Rewards for Panchayats and Zila Parishads for exemplary performance.
(b) *Balika Samridhi Yojana* - A cash incentive of Rs 500 is awarded at the birth of the girl child of birth order 1 or 2 to promote survival and care of girl child.
(c) *Maternity Benefit Scheme* - A cash incentive of Rs 500 is awarded to mothers who have their first child after 19 years of age for the birth of first or second child only.
(d) *Family Welfare* - linked Health Insurance Plan.
(e) Couples below the poverty line, who marry and produce two children after age of 21 are rewarded.
(f) Opening/Establishing creches and child care centres in rural areas and urban slums, to promote participation of women in paid employment.
(g) Provision of wider and affordable choices of contraceptives.
(h) Strengthening and expansion of safe abortion facilities.
(i) Increased vocational training schemes for girls leading to self-employment.
(j) Villagers will be provided soft loans and encouraged to run ambulance services for referrals.
(k) Village level self help groups will be set up.

**National Nutrition Policy**
The adoption of National Nutrition Policy (NNP) by the Government under the aegis of the Deptt. of Women & Child Development in 1993 has been one of the significant achievements on Nutrition scene in the country. The Nutrition Policy recognized that “Nutrition affects development as much as development affects nutrition”. The Policy advocates a series of actions in different spheres like food production, food distribution, education, health and family welfare, people with special needs and nutritional surveillance. The direct and indirect instruments of Nutrition Policy were recommended to be institutionalized through inter-sectoral co-ordination mechanism at Central and State levels. It gives an integrated approach between broad sectors of agriculture, food and nutrition, Environment, animal husbandry etc and thereby improving the nutritional status of the society.

The major nutrition problems of India can be classified as follows:
1. Under-nutrition resulting in:
   (a) Protein Energy Malnutrition (PEM);
   (b) Iron deficiency;
   (c) Iodine deficiency
   (d) Vitamin A deficiency and other hypovitaminoses.
   (e) Low Birth Weight children
2. Seasonal dimensions of Nutrition;
3. Natural calamities & the landless.
4. Market Distortion and Disinformation;
5. Urbanisation.
6. Special Nutritional Problems of Hill People, Industrial Workers, Migrant Workers, and other special categories;
7. Problems of over nutrition, overweight and obesity for a small section of urban population.

**Goals**
The National Nutrition Policy had following goals:
1. Reduction in the incidence of malnutrition and stunted growth among children.
2. Reduction in the incidence of low birth weight to less than 10 percent.
3. Elimination of blindness due to Vit A deficiency.
4. Reduction in the iron deficiency anemia among pregnant women to 25 percent.
5. Universal iodisation of salt for reduction of iodine deficiency disorders to below endemic level.
6. Special emphasis to geriatric nutrition.
7. Annual production of 250 million tonnes of food grain.
8. Improving household food security through poverty alleviation programme.
9. Promoting appropriate diets and healthy life style.

**The Strategy**
Nutrition is a multi-sectoral issue and needs to be tackled at various levels. It is important to tackle the problem of nutrition both through direct nutrition intervention for specially vulnerable groups as well as through various development policy instruments which will create conditions for improved nutrition.

**A. Direct Short Term Interventions**
(i) *This envisages Nutrition Intervention for specially vulnerable groups:*
   (a) Expanding the Safety Net through the Universal immunization Programme, oral rehydration therapy and the Integrated Child Development Services (ICDS)
   (b) With the objective of reducing the incidence of severe and moderate malnutrition by half by the year 2000 A.D.
   (c) Reaching the Adolescent Girls : The Government’s recent initiative of including the adolescent girl within ‘the ambit of’ ICDS should be intensified so that they are made ready for a safe motherhood.
   (d) Ensuring better coverage of expectant women in order to achieve a target of 10% incidence of low birth weight by 2000 A.D.

(ii) *Fortification of Essential Foods*: Essential food items shall be fortified with appropriate nutrients. e.g. salt with iodine and/or iron.

(iii) *Popularisation of Low Cost Nutritious Food*: Efforts to produce and popularise low cost nutritious foods from indigenous and locally available raw material shall be intensified.

(iv) *Control of Micro-Nutrient Deficiency amongst vulnerable Groups*: Deficiencies of Vitamin A, iron and folic acid and iodine among children, pregnant women and nursing mothers shall be controlled through intensified programmes.

**B. Indirect Policy Instruments**: Long Term Institutional & Structural Changes:
(i) *Food Security*: In order to ensure aggregate food security a per capita availability of 215 kg/person/year of foodgrains needs to be attained.
(ii) Improvement of Dietary pattern through Production and Demonstration

(iii) Policies for Effecting Income transfers so as to improve the entitlement package of the rural and urban poor.

(a) Improving the purchasing power: Poverty alleviation programmes, like the Integrated Rural Development Programme (IRDP) and employment generation schemes like Jawahar Rozgar Yojana, Nehru Rozgar Yojana and DWCRA are to be re-oriented and restructured to make a forceful dent on the purchasing power of the lowest economic segments of the population.

(b) Public Distribution System: Ensuring an equitable food distribution, through the expansion of the public-distribution system.

(iv) Land Reforms: Implementing land reform measures so that the vulnerability of the landless and the landed poor could be reduced.

(v) Health & Family Welfare: The health and family welfare programmes are an inseparable part of the strategy through “Health for All by 2000AD”.

(vi) Basic Health and Nutrition Knowledge: Basic health and nutrition knowledge. With special focus on wholesome infant feeding practices, shall be imparted to the people extensively and effectively.

(vii) Prevention of Food Adulteration: Prevention of food adulteration must be strengthened by gearing up the enforcement machinery.

(viii) Nutrition Surveillance: Nutritional surveillance is an essential area requiring immediate attention.

(ix) Monitoring of Nutrition Programmes: Monitoring of Nutrition Programmes (viz ICDS), and of Nutrition Education and Demonstration by the Food & Nutrition Board, through all its 67 centres & field units, should be continued.

(x) Research: Research into various aspects of nutrition, both on the consumption side as well as the supply side, is another essential aspect

(xi) Equal Remuneration: Special efforts should be made to improve the effectiveness of programmes related to women.

(xii) Communication: Communication through established media is one of the most important strategies to be adopted for the effective implementation of the Nutrition Policy.

(xiii) Minimum Wage Administration: Closely related to the market, is the need to ensure an effective minimum wage administration to ensure its strict enforcement and timely revision and linking it with price rise through a suitable nutrition formula.

(xiv) Community Participation: The active involvement of the community is essential not only in terms of being aware of the services available to the community but also for deriving the maximum benefit from such services by giving timely feedback necessary at all levels.

(xv) Education and Literacy: It has been shown that Education & Literacy particularly that of women, is a key determinant for better nutritional status.

(xvi) Improvement of the Status of Women: The most effective way to implement Nutrition with mainstream activities in Agriculture, Health, Education and Rural Development is to focus on improving the status of women, particularly the economic status.

Administration and Monitoring

The policy have been implemented and administered by several ministries and departments of Government of India and NGOs. The administration and monitoring of the programme is as under:

1. Implementation of National Nutrition Policy

(a) The measures enumerated above have to be administered by several ministries/departments of the Government of India and various governmental and non-governmental organisations. There should be a close collaboration between the Food Policy, the Agricultural Policy the Health Policy, the Education Policy, the Rural Development Programme and the Nutrition Policy as each complements the other.

(b) An Inter-Ministerial Co-ordination Committee will function in the Ministry of Human Resource Development under the Chairmanship of Secretary, Department of Women and Child Development, to oversee and review the implementation of nutrition intervention measures.

(c) A National Nutrition Council will be constituted in the Planning Commission, with Prime Minister as chairperson.

2. Monitoring of Nutrition situation

Nutritional surveillance of the country's population especially children and mothers, shall be the responsibility of the National Institute of Nutrition.

3. Role of State Governments

In a federal polity like ours, the cutting edge of governmental interventions commences from the state level. Full implementation of various special programmes being run for upliftment of nutritional status of country, will go a long way in ensuring success of the nutritional policy. The programmes have been discussed in detail in the section on nutrition in this book and include ICDS, Special Nutrition Programme, Balwadi Nutrition Programme, Wheat Based Supplementary Nutrition Programme, Tamil Nadu Integrated Nutrition Programme, Mid Day Meals Programme, Nutritional Anaemia Prophylaxis Programme, Goitre Control Programme and Programme for Prevention of Nutritional Blindness due to Vitamin A Deficiency.

Functions of the Food & Nutrition Board

The Food & Nutrition Board, as reconstituted on 26 July 1990, advises Government, coordinates and reviews the activities in regard to food and nutrition extension/education; development, production & popularisation of nutritious Foods and Beverages; measures required to combat deficiency diseases; and ‘Conservation and efficient utilisation as well as augmentation of food resources by way of food preservation and processing.

National Nutrition Mission (NNM) was set up in 2002 with overall responsibility of reducing both macro and micro nutritional deficiency in the country. As part of NNM, a new programme for adolescent girls and expectant and nursing
mothers is being launched by Department of Women and Child Development during 2002-03. Under this programme food grains are supplied free of cost through targeted public distribution system (PDS) directly to identified families.

**National Blood Policy**

A well organised Blood Transfusion Service (BTS) is a vital component of any health care delivery system. An integrated strategy for Blood Safety is required for elimination of transfusion transmitted infections and for provision of safe and adequate blood transfusion services to the people. The main component of an integrated strategy include collection of blood only from voluntary, non-remunerated blood donors, screening for all transfusion transmitted infections and reduction of unnecessary transfusion.

The Blood Transfusion Service in our country is quite decentralised and lacks resources and good management. In spite of hospital based system, many large hospitals and nursing homes do not have their own blood banks and this has led to proliferation of stand-alone private blood banks. The blood component production/availability and utilisation is extremely limited. There is shortage of trained health-care professionals in the field of transfusion medicine and the requirements of good manufacturing practices and implementation of quality system management.

Thus, a need for modification and change in the blood transfusion service has necessitated formulation of a National Blood Policy and development of a National Blood Programme which will also ensure implementation of the directives of Supreme Court of India in 1996. Hon'able Supreme court directed to phase out unlicensed blood banks by May 2007 and professionals blood donors by December 1997.

**Mission Statement** : The policy aims to ensure easily accessible and adequate supply of safe and quality blood and blood components and transfusion under supervision of trained personnel for all who need it through comprehensive, efficient and a total quality management approach. The broad objectives and strategies to achieve as given in National Blood Policy are as under:

**Objective - 1** : To reiterate firmly the Govt. commitment to provide safe and adequate quantity of blood, blood components and blood products.

**Strategy**

1. A National Blood Transfusion Programme (NBTP) shall be developed to ensure establishment of non-profit integrated National and State Blood Transfusion Services in the country.
2. National Blood Transfusion Council (NBTC) shall be the policy formulating apex body in relation to all matters pertaining to operation of blood centres. National AIDS Control Organisation (NACO) shall allocate a budget to NBTC for strengthening Blood Transfusion Service.
3. State/UT Blood Transfusion Councils shall be responsible for implementation of the Blood Programme at State/UT level.
4. The enforcement of the blood and blood products standards shall be the responsibility of Drugs Controller General India.
5. Trading in blood i.e. Sale & purchase of blood shall be prohibited.
6. The practice of replacement donors shall be gradually phased out in a time bound programme to achieve 100% voluntary non-remunerated blood donation programme.
7. State Blood Transfusion Councils shall organise the blood transfusion service through the network of Regional Blood Centres and Satellite Centres and other Government, Indian Red Cross Society & NGO run blood centres and monitor their functioning.
8. The Regional Centres shall be autonomous for their day to day functioning and shall act as a referral centre for the region assigned to it.
9. Due to the special requirement of Armed Forces in remote border areas, necessary amendments shall be made in the Drugs & Cosmetics Act/Rules to provide special licences to small garrison units. These units shall also be responsible for the civilian blood needs of the region.

**Objective - 2** : To make available adequate resources to develop and re-organise the blood transfusion service in the entire country.

**Strategy**

1. National & State/UT Blood Transfusion Councils shall be supported/strengthened financially.
2. Efforts shall be directed to make the blood transfusion service viable through non-profit recovery system.
3. Efforts shall be made to raise funds for the blood transfusion service for making it self-sufficient.
4. The mechanism shall be introduced in government sector to route the amounts received through cost recovery of blood/blood components to the blood banks for improving their services.

**Objective - 3** : To make latest technology available for operating the blood transfusion services and ensure its functioning in an updated manner.

**Strategy**

1. Minimum standards for testing, processing and storage shall be set and ensured.
2. All mandatory tests as laid down under provisions of Drugs & Cosmetics Act/Rules shall be enforced.
3. Inspectorate of Drugs Controller of India and State FDA shall be strengthened to ensure effective monitoring and a vigilance cell shall be created under Central/State Licensing Authorities.
4. Quality Assurance Manager shall be designated at each Regional Blood Centre(any blood centre collecting more than 15,000 units per year.
5. An External Quality Assessment Scheme (EQAS) through the referral laboratories approved by the National Blood Transfusion Council shall be introduced to assist participating centres in achieving higher standards and uniformity.
6. NBTC shall identify a centre of national repute for quality control of indigenous as well as imported consumables, reagents and plasma products.
7. Each blood centre shall develop its own Standard Operating Procedures on various aspects of Blood Banking.
8. All blood centres shall adhere to bio-safety guidelines as provided in the Ministry of Health & Family Welfare manual “Hospital-acquired Infections : Guidelines for Control” and disposal of bio-hazardous waste as per the provisions of the existing Biomedical Wastes(Management & Handling) Rules - 1996 under the Environmental Protection Act - 1986.

Objective - 6: To strengthen the manpower through Human Resource Development.

Strategy
1. Transfusion Medicine shall be treated as a speciality.
2. A separate Department of Transfusion Medicine shall be established in Medical Colleges.
3. Medical Colleges/Universities in all States shall be encouraged to start PG degree (MD in transfusion medicine) and diploma courses in Transfusion Medicine.
4. In all the existing courses for nurses, technicians and pharmacists, Transfusion Medicine shall be incorporated as one of the subjects.
5. In-service training programmes shall be organised for all categories of personnel working in blood centres as well as drug inspectors and other officers from regulatory agencies.
6. Short orientation training cum advocacy programmes on donor motivation and recruitment shall be organised for Community Based Organisations(CBOs)/NGOs who wish to participate in Voluntary Blood Donor Recruitment Programme.
7. States/UTs shall create a separate cadre and opportunities for promotions for suitably trained medical and para medical personnel working in blood transfusion services.

Objective - 7: To encourage Research & Development in the field of Transfusion Medicine and related technology.

Strategy
1. A corpus of funds shall be made available to NBTC/SBTCs to facilitate research in transfusion medicine and technology related to blood banking.
2. A technical resource core group at national level shall be created to co-ordinate research and development in the country.

Objective - 8: To take adequate legislative and educational steps to eliminate profiteering in blood banks.

Strategy
1. For grant/renewal of blood bank licenses including plan of a blood bank, a committee, comprising of members from State/UT Blood Transfusion Councils including Transfusion Medicine expert, Central & State/UT FDAs shall be constituted which will scrutinise all applications as per the guidelines provided by Drugs Controller General India.
2. Fresh licenses to stand-alone blood banks in private sector shall not be granted.
3. Approved regional blood centres/government blood centres/Indian reduction cross blood centres shall be permitted to supply blood and blood products to satellite centres which are approved by the committee. The Regional Centre shall be responsible for transportation, storage, cross-matching and distribution of blood and blood products through satellite centres.
4. A separate blood bank cell shall be created under a senior officer not below the rank of DC(I) in the office of the DC(I) at the headquarter. State/UT Drugs Control Department shall create such similar cells with the trained officers including inspectors for proper inspection and enforcement.
5. The existing provisions of drugs & Cosmetics Rules will be periodically reviewed to introduce stringent penalties for unauthorised/irregular practices in blood banking system.

Summary
In 1978, the World Health Assembly at Alma Ata launched an ambitious movement known as, “Health for All (HFA) by 2000 AD”. As a signatory to HFA strategy, the Government of India was committed to frame its own policy and implement to attain Health For All by 2000 AD. This formed the basis of the National Health Policy formulated by MOHPW, GOI in 1983. Since its inception, there have been marked changes in the determinants of health. Improvement of these health indicators were the outcome of several complementary initiatives of development sector covering rural development, agriculture, food production, animal husbandry, drinking water, sanitation, education etc. Despite the impressive public health gains, the morbidity and mortality levels in the country were high. In the year 2000, it was the time to take stock of situation and progress ahead with extra zeal to achieve ultimate goal of Health For All. Accordingly, the NHP -1983 was revised and a new, extensive NHP was enunciated by the Govt of India in 2002. The main objective of this policy is to achieve an acceptable standard of good health amongst the general population of the country. The revised strategies adopted by GOI to achieve above objective are: (a) Increase access to the decentralized public health system. (b) Ensuring a more equitable access to health services across the country. (c) Increasing the aggregate public health investment through a substantially increased contribution by the Central Government. (d) The contribution of the private sector in providing health services would be much enhanced. (e) Primacy to preventive and first-line curative initiative at the primary health level. (f) Emphasis will laid on rational use of drugs within the allopathic system. (g) Increased access to tried and tested systems of traditional medicine.

On a short term basis, within the context of the NHP, the important health related targets for the eleventh five year plan (2007 - 2012) are: Reducing Maternal Mortality Ratio (MMR) to 1 per 1,000 live births; Reducing Infant Mortality Rate (IMR) to 28 per 1,000 live births; Reducing Total Fertility Rate to 2.1; Providing clean drinking water for all by 2009 and ensuring no slip-backs; Reducing malnutrition among children of age group 0-3 to half its present level; Reducing anemia among women and girls by 50% and Raising the sex ratio for age group 0-6 to 935 by 2011-12 and 950 by 2016-17.

In 1952, India became the first country in the world to launch a national program, emphasizing family planning to the extent necessary for reducing birth rates. The National Health Policy, 1983, stated that replacement levels of fertility rate (TFR) should be achieved by the year 2000. The National population Policy (NPP) 2000 provides a policy framework for advancing goals and prioritizing strategies during the next decade, to meet the reproductive and child health needs of the people in India, and to achieve net replacement levels (TFR) by 2010. The NPP affirms the commitment of government towards voluntary and informed choice and consent of citizens while availing reproductive health care services, and continuation of the target free approach in administering family planning services. In pursuance of these objectives, the National Socio-Demographic Goals to be achieved by 2010 are formulated. If the NPP -2000 is fully implemented, we anticipate a population of 1107 million (110 crores) in 2010, instead of 1162 million (116 crores) projected by Technical Group on population Projections.

Study Exercises
Long Question: Discuss the objectives and strategies adopted in National Health Policy 2000
Short Notes: National Socio Demographic Goals to be achieved by 2010.

MCQs
1. World Health Assembly at Alma Ata launched movement known as, “Health for All (HFA) by 2000 AD” in the year (a) 1988 (b) 1998 (c) 1978 (d) 1983.
2. The remarkable success of NHP 1983 includes elimination of: (a) Leprosy (b) Kala Azar (c) Filariasis (d) All.
3. Noteworthy initiatives under the National Health Policy 2002 includes all except: (a) Comprehensive primary health care services (b) Non involvement of health volunteers (c) Well worked out referral system (d) Integrated network of evenly spread speciality and super speciality services.
4. Important health related targets for the eleventh five year plan (2007 - 2012) are: (a) Reducing Maternal Mortality Ratio (MMR) to 1 per 1,000 live births (b) Reducing Infant Mortality Rate (IMR) to 28 per 1,000 live births (c) Reducing Total Fertility Rate to 2.1 (d) All.
5. The immediate/short term objectives of NPP 2000 are: (a) To address the unmet needs for contraception (b) Strengthen health care infrastructure, and health personnel (c) Provide integrated service delivery for basic reproductive and child health care (d) All.
6. The major strategies under NPP 2000 include all except: (a) Empowering Women for Improved Health and Nutrition (b) Meeting the Unmet Needs for Family Welfare Services (c) Providing Medical Facilities to Users from Overseas (d) Focus on Under-Served Population Groups.

Fill in the blanks
1. NHP -1983 was revised and a new, extensive NHP was enunciated by the Govt of India in _________.
2. In 2006 nation’s CBR was at _________ & CDR was _________.
3. One of the targets for the eleventh five year plan (2007 - 2012) is to raise the sex ratio for age group 0-6 to ______ by 2011-12 and ______ by 2016-17.
4. NHP 2002 envisages to raise the proportion of postgraduate seats in the field of ‘Public Health’ and ‘Family Medicine’ wherein ________ of the seats are earmarked for these disciplines.
5. By 2010 the NHP 2002 envisages an increase in Government funded health research to a level of ________ percent.
6. India’s current yearly increase in population is ________ million.
7. NPP 2000 aims at Promote delayed marriage for girls, not earlier than age ________ and preferably after 20 years of age.
In health infrastructure, pooling resources, integration of public expenditure on health, reducing regional imbalance to facilitate health care. The Plan of Action includes increasing it also aims at mainstreaming the Indian systems of medicine sanitation, education, nutrition, social and gender equality.

Action on a wide range of determinants of health like water, inter sectoral convergence at all levels, to ensure simultaneous community owned, decentralized health delivery system with areas with unsatisfactory health indicators were classified as poorest households in the remotest rural regions. The difficult affordable and accountable quality health services even to the prime minister on 12th April 2005, to provide accessible, the next five years of its term with a focus on primary health care. The National Rural Health Mission was launched by the Hon'ble Prime Minister on 12th April 2005, to provide accessible, affordable and accountable quality health services even to the poorest households in the remotest rural regions. The difficult areas with unsatisfactory health indicators were classified as special focus states to ensure greatest attention where needed. The thrust of the Mission was on establishing a fully functional, large cadre of health care providers (Auxiliary Nurse Midwives, Male Health workers, Lady Health Visitors and Health Assistant Male). Yet, this vast infrastructure is able to cater to only 20% of the population, while 80% of health care needs are still being provided by the private sector. Rural India is suffering from a long - standing health care problem. Studies have shown that only one trained health care provider including a doctor with any degree is available per every 16 villages. Although, more than 70% of its population lives in rural areas, but only 20% of the total hospital beds are located there. Most of the health problems that people suffer in the rural community and in urban slums are preventable and easily treatable. In view of the above issues, the National Rural Health Mission (NRHM) has been launched by Government of India (GOI).

National Rural Health Mission (NRHM) : Will It Make A Difference?

Since independence, our country has created a vast public health infrastructure of Sub - centres, Public Health Centres (PHCs) and Community Health Centres (CHCs). There is also a large cadre of health care providers (Auxiliary Nurse Midwives, Male Health workers, Lady Health Visitors and Health Assistant Male). Yet, this vast infrastructure is able to cater to only 20% of the population, while 80% of health care needs are still being provided by the private sector. Rural India is suffering from a long - standing health care problem. Studies have shown that only one trained health care provider including a doctor with any degree is available per every 16 villages. Although, more than 70% of its population lives in rural areas, but only 20% of the total hospital beds are located there. Most of the health problems that people suffer in the rural community and in urban slums are preventable and easily treatable. In view of the above issues, the National Rural Health Mission (NRHM) has been launched by Government of India (GOI).

What is NRHM ?

The National Rural Health Mission (2005 - 12) was launched in April 2005 to provide effective health care to rural population throughout the country with special focus on 18 states, which have weak public health indicators and/or weak infrastructure. These states are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu and Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa,
The expected outcomes of NRHM are listed below:

- Specific Targets
  - Promote healthy lifestyles.
  - Revitalize local health traditions and mainstream AYUSH.
  - Population stabilization, gender and demographic balance.
  - Prevention and control of communicable and non-communicable diseases, including locally endemic diseases.
  - Access to integrated comprehensive primary health care.
  - Population stabilization, gender and demographic balance.
  - Revitalize local health traditions and mainstream AYUSH.
  - Promotion of healthy lifestyle.

- Goals - The major goals of NRHM are:
  - Reduction in Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR).
  - Universal access to public health services such as women's health, child health, water, sanitation & hygiene, immunization, and nutrition.
  - Prevention and control of communicable and non-communicable diseases, including locally endemic diseases.
  - Access to integrated comprehensive primary health care.
  - Population stabilization, gender and demographic balance.
  - Revitalize local health traditions and mainstream AYUSH.
  - Promotion of healthy lifestyle.

- Specific Targets
  - IMR - to be reduced to 30/1,000 live births by 2012.
  - Maternal Mortality - to be reduced to 100/100,000 live births by 2012.

- Objectives
  - Train and enhance the capacity of Panchayati Raj Institutions (PRIs) to own, control and manage public health services.
  - Preparation of Health plan for each village through Village Health Committee of the Panchayat.
  - Strengthening sub-centers through an untied fund to enable local planning and action (each sub-center will have an Untied Fund of Rs. 10,000 per annum). This Fund will be deposited in a joint Bank Account of the ANM and Sarpanch and operated by the ANM, in consultation with the Village Health Committee.
  - Provision of 24 hour service in 50% PHCs by addressing shortage of doctors, especially in high focus States, through mainstreaming AYUSH manpower.
  - Preparation and implementation of an Intersectoral District Health Plan prepared by the District Health Mission, including drinking water, sanitation and hygiene and nutrition.
  - Integrating vertical Health and Family Welfare programs at National, State, Block, & District levels.

- Box - 1: Key Components of NRHM
  - Provision of health activist in each village
  - Village health plan to be prepared by village panchayat
  - Strengthening of rural hospitals
  - Integration of vertical health and family welfare programs at district level
  - Strengthening delivery of Primary Health Care

- Principles
  - The NRHM is conceived within the following set of guiding principles:
    1. Promote equity, access, efficiency, quality and accountability in Public Health System.
    2. Enhance people oriented and community based approaches.
    3. Decentralize and involve local bodies.
    4. Ensure Public Health Focus.
    5. Recognized value of traditional knowledge base of communities.
    6. Promote new innovations, method and process development.

The NRHM will cover all the villages in these 18 states through approximately 2.5 lakh village-based Accredited Social Health Activists (ASHA) who would act as a link between the health centers and the villagers. One ASHA will be raised from every village, who would be trained to advise village populations about Sanitation, Hygiene, Contraception, and Immunization to provide Primary Medical Care for Diarrhoea, Minor Injuries, and Fevers; and to escort patients to Medical Centers. They would also be expected to deliver direct observed short course therapy for tuberculosis and oral rehydration, to give folic acid tablets and chloroquine to patients and to alert authorities to unusual outbreaks. ASHA will receive performance-based compensation for promoting universal immunization, referral and escort services for RCH, construction of household toilets, and other health care delivery programs (See Box - 1).
Duration of NRHM

The duration of NRHM will be from 2005 to 2012. The total allocation for the Departments of Health and Family Welfare has been hiked from Rs. 8,420 crores to Rs. 90,103 crores in the budget proposals for the year 2007 - 08.

Core Strategies

The main focus in NRHM would be on the following issues:
(a) Decentralized village and district level health planning.
(b) Appointment of Accredited Social Health Activist (ASHA):
   The selection criteria would be “women, resident of the concerned village, married / widow / divorced, 25 - 45 years age, formal education up to 8th, to be selected out of a panel by village health and action committee of Gram Sabha”. Norm would be 1 per 1000 population, but this norm may be changed for different areas. There would be NO pay or honorarium but she will be given compensation for various health and sanitation services provided. They will be given a kit of suitable drugs. They would be guided by Anganwadi Workers (AWW) and ANM. In 4 years, 2.5 lakh ASHAs will be deployed.
(c) Strengthening the public health service delivery system, particularly at village, primary and secondary level, by developing and implementing the Indian Public Health Standards; Developing CHCs as the First Referral Units (FRUs) by providing special care in the specialities of Medicine, Surgery, Obs & Gyn, and Pediatrics. Presently minimum standards of Indian Public Health for CHCs have been developed; later they will be developed for PHCs & subcentres also.
(d) Mainstreaming of AYUSH (Indian Systems of Medicine).
(e) Improved management capacity to organise health systems and services in public health.
(f) Emphasizing evidence based planning and implementation.

(g) Prompting non-profit factor to increase social participation, promoting health behaviors and improving intersectoral convergence.

Supplementary Strategies

(a) Regulation of private sector to improve equity and reduce “out of pocket” expenses.
(b) Foster Public Private Partnership (PPP) to meet national public health goals.
(c) Re-Orientation of Medical Education (ROME).
(d) Raising health security / insurance for the poor.

Organisational Structure

Organisational structure of NRHM from the apex till district level is shown in Box - 2.

To support the District Health Mission, every district will have an integrated District Health Society (DHS) and all the existing societies as vertical support structures for different national and state health programmes will be merged in the DHS. The DHS will be responsible for planning and managing all health and family welfare programmes in the district, both in the rural as well as urban areas.

The Delivery System

A generic public health delivery system envisioned under NRHM from the village to block level is illustrated in Figure - 1

Progress Under NRHM

The status as on 30 April, 2008 is as under:
(a) State Health Missions have been constituted in all states.
(b) ASHA training modules developed and revised.
(c) Over 1500 management professionals (CA/MBA) appointed in program management units (PMU) to support the programme management. This is being planned at the level of the block also.
(d) RCH - II launched and under implementation.
(e) IMNCI started in 142 districts.

Box - 2 : Organisational structure of NRHM

<table>
<thead>
<tr>
<th>Level</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central level</td>
<td>Mission Steering Group (MSG) headed by the Union Minister for Health &amp; Family Welfare and an Empowered Programme Committee (EPC) headed by the Union Secretary for Health &amp; FW.</td>
</tr>
<tr>
<td>State level</td>
<td>State Health Mission and State Health Society</td>
</tr>
<tr>
<td></td>
<td>State Health Mission headed by the Chief Minister of the State. The functions under the Mission would be carried out through the State Health &amp; Family Welfare Society</td>
</tr>
<tr>
<td></td>
<td>Composition</td>
</tr>
<tr>
<td></td>
<td>● Chairperson : Chief Minister</td>
</tr>
<tr>
<td></td>
<td>● Co - Chairperson : Minister of Health and Family Welfare, State Government</td>
</tr>
<tr>
<td></td>
<td>● Convener : Principal Secretary/ Secretary (Family Welfare)</td>
</tr>
<tr>
<td></td>
<td>● Nominated non-official members (5 to 8 members) such as health experts, representatives of medical associations, NGOs and Representatives of Development Partners</td>
</tr>
<tr>
<td></td>
<td>Frequency of meetings : At least once in every six months</td>
</tr>
<tr>
<td>District level</td>
<td>District Health Mission</td>
</tr>
<tr>
<td></td>
<td>Chairperson : Chairman, Zilla Parishad</td>
</tr>
<tr>
<td></td>
<td>Co - Chairperson : District Collector/DM</td>
</tr>
<tr>
<td></td>
<td>Vice Chairperson : CEO Zilla Parishad</td>
</tr>
<tr>
<td></td>
<td>Mission Director : Chief Medical Officer/ CMHO/ Civil Surgeon</td>
</tr>
</tbody>
</table>
Fig. - 1 : NRHM - Illustrative Structure

Box - 3 : Eligibility criteria for JSY

<table>
<thead>
<tr>
<th>Category of states &amp; cash assistance</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Performing States (LPS)</td>
<td>All pregnant women / All SC/ST Women delivering in SC/PHC/CHC/FRU/ Distt or state hospital or accredited private hospital</td>
</tr>
<tr>
<td>(Cash assistance in rural areas is Rs 1400 and Rs 600 for the mother &amp; ASHA respectively; in urban areas it is Rs. 1000 and Rs 200 respectively).</td>
<td></td>
</tr>
<tr>
<td>High Performing States (HPS)</td>
<td>BPL pregnant women aged 19 yrs and above/ All SC/ST Women delivering in SC/PHC/CHC/FRU/ Distt or state hospital or accredited private hospital</td>
</tr>
<tr>
<td>(Cash assistance for the mother in rural areas is Rs 700 and in urban areas it is Rs. 600).</td>
<td></td>
</tr>
</tbody>
</table>

National Urban Health Mission (NUHM)

The National Urban Health Mission (NUHM) will meet health needs of the urban poor, particularly the slum dwellers by making available to them essential primary health care services. This will be done by investing in high - caliber health professionals, appropriate technology through public - private partnership, and health insurance for urban poor. Recognizing the seriousness of the problem, urban health will be taken up as a thrust area for the Eleventh Five Year Plan. NUHM will be launched with focus on slums and other urban poor. The Eleventh Five Year Plan will aim for inclusive growth by introducing National Urban Health Mission (NUHM), which along with NRHM, will form Sarva Swasthya Abhiyan. The organisation would be:

At the state level : Besides the State Health Mission and State Health Society and Directorate, there would be a State Urban Health Programme Committee.

At the district level : There would be a District Urban Health Committee.

At the city level : A Health and Sanitation Planning Committee.

At the ward slum level : There will be a Slum Cluster Health, Water and Sanitation Committee.

For promoting public health and cleanliness in urban slums, the Eleventh Five Year Plan will also encompass experiences of civil society organizations working in urban slum clusters. It will seek to build a bridge of NGO - GO partnership and develop community level monitoring of resources and their rightful use. NUHM would ensure the following :

- Resources for addressing the health problems in urban areas, especially among urban poor.
- Need based city specific urban health care system to meet the diverse health needs of the urban poor and other vulnerable sections.
- Partnership with community for a more proactive involvement in planning, implementation, and monitoring of health activities.
• Institutional mechanism and management systems to meet the health-related challenges of a rapidly growing urban population.
• Framework for partnerships with NGOs, charitable hospitals, and other stakeholders.
• Two-tier system of risk pooling: (a) Women's Mahila Arogya Samiti to fulfill urgent hard - cash needs for treatments; (b) A Health Insurance Scheme for enabling urban poor to meet medical treatment needs.

NUHM would cover all cities with a population of more than 100,000. It would cover slum dwellers and other marginalized urban dwellers like rickshaw pullers, street vendors, railway and bus station coolies, homeless people, street children, construction site workers, who may be in slums or on sites.

The existing Urban Health Posts (UHPs) and Urban Family Welfare Centres (UFWCs) would continue under NUHM. They will be marked on a map and classified as the Urban Health Centres on the basis of their current population coverage. All the existing human resources will then be suitably reorganized and rationalized. These centres will also be considered for upgradation. Intersectoral coordination mechanism and convergence will be planned between the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the National Urban Health Mission.

The Challenges before NRHM and its key approaches: A Critique

It is clearly a gigantic task to bring about major changes in outcomes by simultaneous action on a wide range of determinants of health. NRHM has identified communitization, flexible financing, innovations in human resource management, monitoring against IPHS Standards, and building capacities at all levels as the principal approaches to ensure quality service delivery, efficient utilization of scarce resources, and most of all, to ensure service guarantees to local households.

Health is a state subject and the NRHM will build partnership with the States to ensure meaningful reforms with more resources. Ultimately, the success of NRHM will depend on the ability of the Mission interventions to galvanize State Governments into action, pursuing innovations and flexibility in all spheres of public health action. Ensuring availability of fully trained and equipped resident health functionaries at all levels and large scale financing under initiatives like the Janani Suraksha Yojana for institutional deliveries are a few priorities for action. Partnerships with non-governmental providers to strengthen public health delivery are also an important need given the distribution of Specialist doctors in India. While we have 30,000 MBBS graduates coming out of our Colleges every year, the entire rural health system for more than 750 million people never has more than 26000 doctors.

There is need to shift to decentralization of functions to hospital units/health centres and local bodies. The States need to move away from the narrow focus on the implementation of budgeted programmes and vertical schemes. They need to develop systems that comprehensively address the health needs of all citizens. Thus, in order to improve the health care services in the country, the Eleventh Five Year Plan will insist on Integrated District Health Plans and Block Specific Health Plans, mandate involvement of all health related sectors and emphasize partnership with PRIs, local bodies, communities, NGOs, Voluntary and Civil Society Organizations.

Summary

The National Rural Health Mission was launched by the Hon'ble Prime Minister on 12th April 2005, to provide accessible, affordable and accountable quality health services even to the poorest households in the remotest rural regions. NRHM will give special focus to 18 states, which have weak public health indicators and/or weak infrastructure. The duration of NRHM will be from 2005 to 2012. The total allocation for the Departments of Health and Family Welfare has been hiked from Rs. 8,420 crores to Rs. 90,105 crores in the budget proposals for the year 2007-08.

Key component of NRHM are provision of health activist in each village, village health plan to be prepared by village panchayat, strengthening of rural hospitals, integration of vertical health and family welfare programs at district level, strengthening delivery of Primary Health Care.

The major goals of NRHM are (a) Reduction in Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR), (b) Universal access to public health services, (c) Prevention and control of communicable and non-communicable diseases, including locally endemic diseases, (d) Access to integrated comprehensive primary health care (e) Population stabilization, gender and demographic balance (f) Revitalize local health traditions and mainstream AYUSH (g) Promotion of healthy life styles.

The expected outcomes of NRHM are by 2012 reduction in IMR and MMR to 30/1000 live births and 100/100,000 live birth respectively, reduction of TFR to 2.1 by 2012, Malaria Mortality - 50% reduction by 2010, additional 10% by 2012, Kala Azar Mortality Reduction - 100% by 2010 and sustaining elimination until 2012, Filaria / Microfilaria Reduction - 70% by 2010, 80% by 2012, and elimination by 2015, Dengue Mortality Reduction - 50% by 2010 and sustaining at that level until 2012, Cataract operations - increasing to 46 lakh until 2012, Leprosy Prevalence Rate - reduce from 1.8 per 10,000 in 2005 to less than 1 per 10,000 thereafter, Tuberculosis DOTS - maintain 85% cure rate through entire Mission Period and also sustain planned case detection rate, Upgrading all health establishments in the district to Indian Public Health Standards (IPHS), Increase utilization of First Referral units from bed occupancy by referred cases of less than 20% to over 75%, Over 5 lakh ASHAs, one for every 1,000 population/large habitation, in 18 Special Focus States and in tribal pockets of all states by 2008, All Sub-centres (nearly 1.75 lakh) functional with two ANMs by 2010, All Primary Health Centres (nearly 30,000) with three staff nurses to provide 24x7 services by 2010, 6,500 Community Health Centres strengthened/established with seven specialists and nine staff nurses by 2012, 1,800 Taluk/Sub Divisional Hospitals and 600 District Hospitals strengthened to provide quality health services by 2012, Mobile Medical Units for each District by 2009, Functional Hospital Development Committees in all CHCs, Sub Divisional Hospitals, and District Hospitals by 2009, Untied grants and annual maintenance grants to every SC, PHC, and CHC released regularly and utilized for local health action by 2008, All District Health Action Plans...
completed by 2008.

The main focus in NRHM would be on (a) Decentralized village and district level health planning, (b) Appointment of Accredited Social Health Activist (ASHA) - “women, resident of the concerned village, married / widow / divorced, 25 - 45 years age, formal education up to 8th, to be selected out of a panel by village health and action committee of Gram Sabha”. Norm would be 1 per 1000 population, (c) Strengthening the public health service delivery system, particularly at village, primary and secondary level, (d) Mainstreaming of AYUSH (Indian Systems of Medicine), (e) Improved management capacity in health systems, (f) Emphasizing evidence based planning and implementation, (g) Prompting non - profit factor to increase social participation, promoting health behaviors and improving intersectoral convergence. Supplementary Strategies are (a) Regulation of private sector to improve equity and reduce “out of pocket” expenses, (b) Foster Public - Private Partnership (PPP) to meet national public health goals, (c) Re - orientation Of Medical Education (ROME), (d) Raising health security / insurance for the poor.

At centre level there will be Mission Steering Group (MSG) headed by the Union Minister for Health & Family Welfare and an Empowered Programme Committee (EPC) headed by the Union Secretary for Health & FW. At state level State Health Mission headed by the Chief Minister of the State and will have minister of health and family welfare, state government and principal secretary (Family Welfare) plus 5 - 8 non - official members. At district level, district health mission with Chairman Zilla Parishad, District Collector / DM, CEO Zilla Parishad and Chief Medical Officer/ CMHO/ Civil Surgeon as its members. The delivery system is through strengthening health system.

Janani Suraksha Yojana is 100% centrally sponsored and integrates cash assistance with maternal care. It is funded through the flexi - pool mechanism. Low Performing States (LPS) beneficiaries are all pregnant women; cash assistance in rural areas is Rs 1400 and Rs 600 for the mother & ASHA respectively; in urban areas it is Rs. 1000 & Rs 200 respectively. High Performing States (HPS) : cash assistance for the mother in rural areas is Rs 700 and in urban areas it is Rs. 600. Beneficiaries are all pregnant ladies below poverty line.

The National Urban Health Mission (NUHM) will meet health needs of the urban poor, particularly the slum dwellers, by making available to them essential primary health care services. The organisation would be At the state level : the State Health Mission, State Health Society and Directorate; and State and Urban Health Programme Committee. At the district level - District Urban Health Committee At the city level - A Health and Sanitation Planning Committee. At the ward slum level - Slum Cluster Health, Water and Sanitation Committee.

NUHM would ensure Resources for addressing the health problems in urban areas, especially among urban poor, need based city specific urban health care system to meet the diverse health needs of the urban poor and other vulnerable sections, Partnership with community for a more proactive involvement in planning, implementation, and monitoring of health activities, Institutional mechanism and management systems to meet the health - related challenges of a rapidly growing urban population, Framework for partnerships with NGOs, charitable hospitals and other stakeholders, Two - tier system of risk pooling : (i) women's Mahila Arogya Samiti to fulfil urgent hard - cash needs for treatments; (ii) a Health Insurance Scheme for enabling urban poor to meet medical treatment needs.

Study Exercises

Long Question : How does NRHM envisage to achieve goals of NHP - 2002 7

Short Notes : (1) Key components of NRHM (2) Specific targets of NRHM (3) JSY (4)Functions of ASHA.

MCQs

1. NRHM was launched in (a) Apr 2005 (b) Mar 2006 (c) Nov 2003 (d) Dec 2004
2. According to NRHM IMR should be less than ___ per 1000 live births by 2012 (a) 30 (b) 28 (c) 32 (d) 35
3. According to NRHM MMR should be less than ___ per 1000 live births by 2012 (a) 1 (b) 2 (c) 1.5 (d) 3
4. According to NRHM Dengue mortality should be reduced by ____ by 2010 (a) 40% (b) 50% (c) 75% (d) 60%
5. According to NRHM target for cataract operation by the year 2012 (a) 40 lakh (b) 46 lakh (c) 51 lakh (d) 55 lakh
6. One ASHA is for ______ population in plain areas (a) 700 (b) 1000 (c) 300 (d) 1500

Answers : (1)a; (2)a; (3)a; (4)b; (5)b; (6)b.

References & Further Suggested reading

The International Conference of Population and Development (ICPD) at Cairo in 1994 was the basis for the launch of RCH programme in our country in 1997. The RCH Programme is an umbrella programme to provide need based, client centered, demand driven, high quality services the beneficiaries with a view to enhancing the quality of reproductive life of the population and enabling country to achieve the population stabilization. The vision is to bring about outcomes as envisioned in the Millennium Development Goals, the National Population Policy 2000 (NPP 2000), the Tenth Plan document, the National Health Policy 2002 and Vision 2020 India, minimizing the regional variations in the areas of reproductive and child health and population stabilization through an integrated, focused, participatory program, meeting the unmet demands of the target population and provision of assured, equitable, responsive quality services. The programme now intends to gradually make a shift to address the entire gamut of women's health issues. The program will pay substantially more attention on the 8 states, (Empowered Action Group: EAG states) lagging behind in population stabilisation efforts viz. Bihar, Chattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh & Uttaranchal. The programme also focuses on universalisation of immunization, ante-natal care, skilled attendance during delivery and other features of common childhood care.

**Definition**

World Health Organization (WHO) has defined reproductive health as follows:

Within the framework of WHO's definition of health as a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity; reproductive health addresses the reproductive processes, functions and systems at all stages of life. Reproductive health therefore implies that people are able to have a responsible, satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide, if when, and how often to do so(1). This definition focuses on right of men and women to be informed of and to have access to safe, effective, affordable, and acceptable methods of fertility regulation of their choice, and the right to access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant.

Accordingly, RCH - I was launched in 1997 as a part of 9th plan, while RCH - II was launched in 2002 as a part of 10th five year plan. Many lessons have been learned from RCH Phase I. The design of RCH Phase II specifically seeks to address the lessons learnt from RCH Phase I to effectively reach the national long-term goals through flexible, cohesive and strategic planning.

**Essential Components of RCH-II Programme**

The essential components of RCH - II programme (8) are illustrated in Fig. - 1. The individual components are discussed in detail herewith (See Table - 1).

**Population Stabilization**

The details of national family planning programme have been given in another chapter, in this book, on national health policy and national population policy (1-6) and you are advised to refer to the same.

Unmet need for family planning, 'which refers to the condition of wanting to avoid or postpone childbearing but not using any method of contraception' has been a core concept in international population for more than three decades(10). Unmet need for contraception arises from several reasons, such as weak motivation, low female autonomy, perceived health risks, and moral objection to the use of contraception. On a nationwide basis the family planning program currently offers five modern contraceptive options. The methods currently available for spacing are - oral contraceptive pills, condoms and intra-uterine devices. Male and female sterilization is often used for limiting family size.

*Expanding contraceptive choices in RCH Phase II:* International evidence shows that increasing the availability of method choice increases acceptance rates. It is estimated that every additional method increases the contraceptive prevalence rate by 12%. A wider contraceptive choice, including natural methods, helps meet the changing needs of couples during their lives. Multiple methods make switching easier, reduce method-specific discontinuation, and improve user satisfaction. Contraceptive choice can be expanded both by adding new methods to the existing range as well as increasing access to the services providing the choice. The details of contraceptives are dealt with in an exclusive chapter in the section on family health.
Strategies to expand contraceptive choice in RCH Phase II

1. Expanding the range of FP services: Each CHC and PHC having an OT (operation theatre) facility will have at least one Medical Officer trained in one method of sterilization.

2. Improving and integrating RCH services in PHCs and sub-centers: The capacity of Lady Health Visitors (LHVs) and Auxiliary Nurse Midwives (ANMs) will be built through skill-based clinical training for spacing methods including IUCD insertion and removal, lactational amenorrhea method (LAM), standard days method (SDM) and emergency contraception (EC). They will also be trained in infection prevention, counseling and follow-up for different family planning methods.

3. Training of District Hospital/CHC/PHC staff to offer an expanded choice of services: Training providers to offer LAM, SDM, EC and injectables will help to increase the range of choice and ensure quality services and follow-up for clients.

4. Forging linkages with the ICDS division of women and child development department.

5. Engaging the private sector to provide quality family planning services.

6. Stimulating demand for quality family planning services by increasing compensation and by using media.

7. Involving Panchayati Raj Institutions, Urban Local Bodies and NGOs.

Maternal Health

The programme envisages a holistic strategy for bringing about a total intersectoral coordination at the grass root level and involving the NGOs, Civil Societies, Panchayati Raj Institutions and Womens' group in bringing down maternal mortality rate. The National Population Policy 2000 and National Health Policy 2002 have set the goal of reducing MMR to less than 10 per 100,000 live births by the year 2010[11]. The maternal mortality rate in India is 301 per 100,000 live births (SRS, RGI 2001-03 Maternal Mortality Report). Various schemes under the programme are as under:

Essential Obstetric Care: The complete package of essential obstetric care includes antenatal care, institutional/ safe delivery services & postnatal care. It has been seen that a total of three antenatal checkups to be conducted where all components of essential obstetric care can be provided.

 Provision of 24 hrs Delivery Services at PHC: Under RCH II all the CHCs and 50% of the proposed PHCs will be providing...
round the clock delivery services.

**Postnatal care for mother and new born:** To ensure postnatal care within 24 hours of delivery and subsequent home visits on day 3 and 7 are the important components for identification and management of emergencies occurring during post natal period. The ANMs, LHV ands the staff nurses are being made aware of and also oriented for tackling these emergencies identified during these visits.

**Skilled Attendance at Birth:** To manage and handle some common obstetric emergencies at the time of birth the staff has been trained to give certain injections and perform certain interventions in emergency to save life.

**Provision of Emergency Obstetric and Neonatal Care at First Referral Unit (FRU):** There are three critical elements of a facility being declared as FRU. They are availability of surgical interventions, newborn care and blood storage facility on a 24 hr basis.

**Referral Services at both Community and Institutional level:** Establishing referral linkages between the community and FRUs is an essential component for utilization of services particularly during emergencies. Since emergencies during the process of birth can not be predicted, it is essential to place effective referral linkages which can be accessed by all pregnant women in case of emergency.

**Setting of Blood Storage Centers at FRUs:** Timely treatment of complications associated with pregnancy is sometimes hampered due to non availability of Blood Transfusion services at FRUs. The drugs and cosmetics act has been amended to facilitate establishment of Blood Storage Centers at such FRUs.

**Training of MBBS Doctors in Life Saving Anesthetics Skills for Emergency Obstetric Care:** Provision of adequate and timely Emergency obstetric care has been recognized globally as the most important intervention for saving lives of pregnant women who may develop complications during pregnancy and child birth. It has not been possible till now due to lack of specialist man power gynecologist and anesthetist particularly at the district and subdistrict level. In view of above, a 18 weeks programme for training MBBS doctors in anesthetic skills has been started by govt. but at the same time it will not be a replacement of specialist.

**Obstetric Management skills:** GOI has also introduced training of MBBS doctors in obstetric management skills and has prepared a 16 weeks training programme in obstetric management skills including cesarean section operation.

**Safe Abortion Services Medical Termination of Pregnancy (MTP):** Two thirds of all abortions take place outside the authorized health services by unauthorized often unskilled providers. Eight percent of all maternal deaths are due to complicated abortions. This is a preventable tragedy and an indication of unmet need for abortion. Provision of 24x7 MTP services at PHCs, CHCs and FRUs are being strengthened by training of medical manpower in techniques of MTP by the states. Following Strategies are being implemented:

**Community Level**
- Spread awareness regarding safe MTP in the community and the availability of services thereof
- Enhance access to confidential counseling for safe MTP, train ANMs, AWWs and link workers ASHA and AWWs while maintain confidentiality

**Facility Level**
- Provide quality Manual Vaccum Aspiration (MVA) facilities at all CHCs and at least 50% of PHCs that are being strengthened for 24 hrs deliveries
- Provide comprehensive and high quality MTP services at all FRUs
- Encourage private and NGO sectors to establish quality MTP services

**Other interventions for improving maternal health**

**National Nutritional Anemia Prophylaxis Program (Now under RCH):** As per NFHS III, 56.1% of ever married women aged 15-49 yrs are anemic. The problem is more severe during pregnancy with 57.8% being anemic. A program for prophylaxis and treatment of nutritional anemia has been under implementation in the country since 1997-98. Under this programme all pregnant and lactating women are provided with one tablet (containing 100 mg of elemental iron and 0.5mg Folic acid) for 100 days. Those who have severe anemia are provided with double dose of these tablets; and health education apart from other services.

**Village Health and Nutrition Day:** Organizing village health and nutrition day at Anganwadi center at least once a month to provide antenatal / postpartum care for pregnant women, promote institutional delivery and health education apart from other services.

**Janani Suraksha Yojana (JSY):** It is a safe motherhood intervention under NRHM being implemented with the objective of reducing maternal and neonatal mortality by promoting institutional delivery among the poor pregnant women. It was launched on 12 April 2005 and is being implemented in all states and is a 100 % centrally sponsored scheme. The main element in the yojana is ASHA who will act as a link between govt and the poor pregnant woman. She is to facilitate pregnant women to avail services of maternal care and to arrange for transport services. Cash assistance will be given both to the mother and ASHA worker on getting an institutional delivery.

**Reproductive Tract Infections (RTIs) and Sexually Transmitted Diseases (STDs)***

RTIs and STDs were not recognized as a public health problem till recently. The spread of HIV infection and the role that RTI and STD play in the transmission of HIV have brought urgency to the problem. Strategies under RCH II are:

1. The prevention, early detection and effective management of common lower reproductive tract infections have been included as a component of essential care through the existing primary health care infrastructure.
2. Convergence with National AIDS Control Programme is envisaged in provision of these services, in terms of utilization of these services for case management, laboratory services, counseling services, drugs, equipment, blood safety etc.
3. Under RCH II programme there is a commitment for implementing the RTI/STI services at the sub district level i.e. in 50% of the PHCs and all FRUs, including drugs.
training, disposable equipment and provision of laboratory
technicians.
4. National Guidelines for management of RTIs and STDs
have been developed and disseminated to the states.

**Newborn and Child Health**

Under RCH II, the activities being undertaken to achieve the
NRHM goals under newborn and child health are:

1. Integrated Management of newborn and childhood illnesses
2. Home Based Newborn Care (HBNC)
3. Promotion of breastfeeding and complementary feeding
4. Control of deaths due to ARI
5. Control of Deaths due to Diarrhoeal Diseases
6. Supplementation with micronutrients
7. Universal Immunization Programme

**Integrated Management of newborn and childhood illnesses:** India is faced with an unparalleled challenge in the
area of child survival and health. The country contributes 2.4
million of the global burden of 10.8 million under-five child
deaths, which is the highest for any nation in the world. Nearly
26 million infants are born each year, of whom 1.2 million die
before completing the first four weeks of life and 1.7 million die
before reaching the first birthday.

**Why integrated approach?** Many well-known prevention and
treatment strategies have already proven effective for saving
young lives like Childhood vaccinations, Oral rehydration therapy, Effective antibiotics for pneumonia, Prompt treatment
of malaria, breastfeeding practices etc have reduced childhood
deaths. While each of these interventions has been successful,
accumulating evidence suggests that an integrated approach
is needed to manage sick children to achieve better outcomes.
Because many children present with overlapping signs and
symptoms of diseases, a single diagnosis can be difficult, and
may not be feasible or appropriate. This is especially true for
first-level health facilities where examinations involve few
instruments, negligible laboratory tests, and no X-ray.

**History:** During the mid-1990s, the World Health Organization
(WHO), in collaboration with UNICEF developed a strategy
known as the Integrated Management of Childhood Illness
(IMCI). This strategy has been expanded in India to include all
neonates and renamed as ‘Integrated Management of Neonatal
and Childhood Illness (IMNICI)’. India has included care of new
born and has modified generic IMCI and named it as IMNICI.

The differences are given in Table-2.

**Components:**

1. Improvements in the case-management skills of health
staff through the provision of locally-adapted guidelines on
Integrated Management of Neonatal and Childhood illness and activities to promote their use;
2. Improvements in the overall health system required for
effective management of neonatal and childhood illness;
3. Improvements in family and community health care
practices.

**(Details of IMNICI are discussed in a chapter exclusively in the
section on family health)**

**Home Based New Born Care:** The Govt of India has approved
the implementation of home based new born care where ASHAs
will be trained in identified aspects of new born care during the
second year training. The underlying principle of effective care
at birth is that wherever an infant is born, home or facility, he/she is provided clean care, warmth, resuscitation, and
exclusive breastfeeding. He/she is weighed and examined, and
if the clinical needs are not manageable at the place of delivery, he/she is referred and managed at an appropriate facility. A
large proportion of deliveries would continue to occur at homes
by the TBAs for some more years to come, especially in the
EAG states. It is therefore, considered desirable to continue to
impart newborn care skills to TBAs in areas with high rates of
home deliveries. They will also be provided clean delivery
kits. At the same time, the overall effort would be to promote
childbirth by skilled birth attendants and in institutions, both
in the public and private sector. Interventions for newborn have
been summarized in Table-3.

**Promotion of Breast Feeding and Complementary Feeding:**
Revival of the Baby Friendly Hospital initiative (BFHI) has been
approved and implementation shall be initiated.

**Control of Deaths due to Acute Respiratory Infections (ARI):**
Acute respiratory infections (ARI) in children can involve the
upper respiratory tract (nose, throat) or the lower respiratory tract (bronchi, lungs). The lower respiratory tract infections (broadly termed as pneumonias) are a major cause of
deaths of infants and children in India accounting for about
30% of under-five deaths. The actual deaths are much higher
as many children die at home (12). Timely treatment based on
well-researched algorithms can save most children with ARI.
The ARI control program was initiated as a pilot project in

<table>
<thead>
<tr>
<th><strong>Table 2 : Differences in generic IMCI and IMNICI</strong></th>
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<tbody>
<tr>
<td><strong>Features</strong></td>
</tr>
<tr>
<td>Coverage of 0-6 days (early new born period)</td>
</tr>
<tr>
<td>Basic health worker module</td>
</tr>
<tr>
<td>Home visit module by provider for care of newborn and young infant</td>
</tr>
<tr>
<td>Sequence of training</td>
</tr>
<tr>
<td>Home-based training</td>
</tr>
<tr>
<td>Duration of training on Newborn/young infant</td>
</tr>
<tr>
<td>Sequence of training</td>
</tr>
</tbody>
</table>
In 1990, 14 districts in the country were identified. In 1992, the ARI control strategy became a part of CSSM, which continued into the RCH Phase I project in 1997. Co-trimoxazole tablets are being provided at subcenters and above. ANMs are being trained to treat children with ARI.

Control of Deaths due to Diarrhoeal Diseases:
Diarrhoeal diseases account for 17 percent of under-five mortality in post-neonatal period, and 3 percent of neonatal deaths. The Oral Rehydration Therapy (ORT) program was started in 1986-1987. The main objective of the program was to prevent deaths due to dehydration caused by diarrhoeal disease. Health education aimed at rapid recognition and appropriate management of diarrhoea has been a major component of the CSSM and RCH Phase I project. ORS packets are provided at sub-centers as part of the drug kit-A, under the RCH program. The use of home available fluids and ORS has resulted in a substantial decline in the mortality associated with diarrhoea from an estimated 1.0-1.5 million children every year prior to 1985 to six to seven lakh deaths in 1996. In addition, social marketing and supply of ORS through the public distribution system is being done in some states.

Supplementation with micronutrients: National Programme for Prophylaxis against Blindness in Children caused due to Vitamin A deficiency is being implemented through RCH programme (See Box - 1). The objectives are to decrease the prevalence of Vit A deficiency to 0.3%.

Anemia among Children: Iron deficiency anaemia is widely prevalent in young children. NFHS II (1998-99) revealed that 74.3% children under the age of three years are anemic. Under the National Nutritional Anemia Prophylaxis Program (now part of RCH) Iron & Folic acid tablet containing 20 mg of elemental Iron and 0.1mg of Folic acid are provided at sub center level. 100 tablets are given to children who are clinically anemic. As per the revised policy, infants between 6-12months of age are also included in the program as a significant proportion of these infants are anemic. For children aged 6-60 months, Ferrous sulphate and Folic acid is to be provided in a liquid formulation. For safety sake liquid formulation should be dispensed in bottles so designed that only 1ml can be dispensed each time. School children 6-10yrs of age are also included in the programme. Children 6-10 yrs are to be provided 30 mg of elemental Iron 250mcg and Folic acid per child per day for 100

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Table-3: Interventions for newborn care

<table>
<thead>
<tr>
<th>Level</th>
<th>Interventions</th>
<th>Key Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home and Community level</td>
<td>ANC : Focus to be on enhancing coverage among the poor and marginalized women, improving quality and promoting institutional deliveries, birth preparedness and care seeking for danger signs.</td>
<td>ANMs, AWWs</td>
</tr>
<tr>
<td></td>
<td>Skilled care at birth : Institutional deliveries to be promoted through Janani Suraksha Yojana involving TBA; deliveries by ANMs to be encouraged ; piloting Community Skilled Birth Attendants (C-SBA) program to be completed; in populations where access to skilled birth attendants or institutional deliveries not available, clean deliveries by trained TBAs to be accepted.</td>
<td>ANMs, C-SBAs TBAs</td>
</tr>
<tr>
<td></td>
<td>Home - based newborn and post-partum care : Using IMNCI protocol, AWWs to provide home-based care for neonates with emphasis on warmth, breastfeeding, prevention of infection, extra care of LBW infants, early detection of sickness; at least three contacts in the first week of life stipulated starting with the first day, extra contracts for LBW and sick neonates; maternal post-partum care also provided healthy family practices; TBAs to reach neonates and mothers and promote healthy family practices; ANMs to supervise, especially the care of LBW and sick babies and mothers.</td>
<td>AWWs supervised by ANMs ; TBAs</td>
</tr>
<tr>
<td></td>
<td>Community - based management of sick neonates : Using IMNCI protocols, ANMs to assess neonates with sickness and manage mild/moderate sickness.</td>
<td>ANMs</td>
</tr>
<tr>
<td></td>
<td>Referral of sick mothers and neonates : Funds for referral transport to be made available at village level, communities to be encouraged to map facilities and development mechanisms, AWWs and TBAs to facilitate referrals.</td>
<td>Families communities, AWWs, TBAs</td>
</tr>
<tr>
<td></td>
<td>Behaviour Change Communication (BCC) : BCC strategy to aim at promoting early and complete ANC, institutional deliveries birth preparedness recognition and early care-seeking for maternal and neonatal danger signs, healthy newborn and maternal care practices.</td>
<td>Community, media, ANMs, AWWs, TBAs</td>
</tr>
<tr>
<td>Facility level</td>
<td>PHCs/CHCs • 50% of PHCs (1000) and all CHCs ( 600) to be upgraded to provide 24 hour basic emergency obstetric care (EmOC) and inpatient care to inborn and outborn sick neonates and children; outpatient IMNCI to be implemented, neonatal, antenatal and post-partum care to be strengthened. • Rest of the PHCs to provide antenatal care ANC, outpatient IMNCI and post-partum care.</td>
<td>Nurse, ANMs LHV, MOs</td>
</tr>
</tbody>
</table>
health challenges for adolescents include pregnancy, excess active, and are exposed to peer pressure. Some of the public get married early, work in vulnerable situations, are sexually of the population. A large number of them are out of school,

Adolescents (10-19 years) in India represent almost one-third of the population. A special campaign was stated for slum areas in 1998 with assistance from UNICEF. In 1999-2000, 50 cities were covered. The emphasis is on covering all unprotected children up to age of 3 years with single dose of measles vaccine.

**Neonatal Tetanus elimination** : All women in reproductive age group should be covered with three doses of tetanus toxoid vaccine through a campaign approach. Such campaigns have been implemented in Rajasthan and Madhya Pradesh to achieve early elimination of neonatal tetanus.

**Adolescent Health**

Adolescents (10-19 years) in India represent almost one-third of the population. A large number of them are out of school, get married early, work in vulnerable situations, are sexually active, and are exposed to peer pressure. Some of the public health challenges for adolescents include pregnancy, excess

days. Adolescents are to be supplemented in the same dosage and duration as adults.

**Universal Immunization Programme** : National Immunization schedule is given in Table - 4. The impact of the UIP is measured in terms of Vaccine Preventable Diseases (VPD) burden. Over the last 15 years there has also been a general decline in the reported number of cases of the six main VPD. Despite the improvement indicated above, the stated goals were not fully achieved, thus there is an urgent need to address the immunization system deficiencies and emphasize the need for strengthening the system and vigilant monitoring and surveillance.

<table>
<thead>
<tr>
<th>Box - I : Strategy for National Programme for Prophylaxis against Blindness in Children due to Vit ' A ' deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infancy</strong></td>
</tr>
<tr>
<td>Health and nutrition education is being taken up to encourage breastfeeding, exclusive breastfeeding for the first six months and the introduction of complimentary feeding thereafter 1,00,000IU of vitamin A is being given at nine months</td>
</tr>
</tbody>
</table>

**Table - 4: National Immunization schedule**

<table>
<thead>
<tr>
<th>Age</th>
<th>Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>BCG, OPV</td>
</tr>
<tr>
<td>6 Weeks</td>
<td>DPT, OPV, Hepatitis B</td>
</tr>
<tr>
<td>10 Weeks</td>
<td>DPT, OPV, Hepatitis B</td>
</tr>
<tr>
<td>14 Weeks</td>
<td>DPT, OPV, Hepatitis B</td>
</tr>
<tr>
<td>9 months</td>
<td>Measles</td>
</tr>
<tr>
<td>16-24 months</td>
<td>DPT (1st Booster), OPV</td>
</tr>
<tr>
<td>5 years</td>
<td>DPT (2nd Booster)</td>
</tr>
<tr>
<td>10 years</td>
<td>TT</td>
</tr>
<tr>
<td>Pregnant unimmunized</td>
<td>2 doses of TT with one month interval</td>
</tr>
<tr>
<td>Pregnant immunized</td>
<td>One booster dose of TT</td>
</tr>
</tbody>
</table>

**Urban Measles Campaign** : A special campaign was stated for slum areas in 1998 with assistance from UNICEF. In 1999-2000, 50 cities were covered. The emphasis is on covering all unprotected children up to age of 3 years with single dose of measles vaccine.

**Neonatal Tetanus elimination** : All women in reproductive age group should be covered with three doses of tetanus toxoid vaccine through a campaign approach. Such campaigns have been implemented in Rajasthan and Madhya Pradesh to achieve early elimination of neonatal tetanus.

**Adolescent Health**

Adolescents (10-19 years) in India represent almost one-third of the population. A large number of them are out of school, get married early, work in vulnerable situations, are sexually active, and are exposed to peer pressure. Some of the public health challenges for adolescents include pregnancy, excess

risk of maternal and infant mortality, sexually transmitted infections and reproductive tract infections in adolescence, and the rapidly rising incidence of HIV in this age group. In context of the RCH program goals, with special reference to reduction in IMR, MMR and TFR, addressing adolescents in the program framework will yield dividends in terms of delaying the age at marriage, reducing the incidence of teenage pregnancy, the prevention and management of obstetric complications including safe abortion services and the reduction of unsafe sex.

**Strategy for addressing Adolescent Reproductive and Sexual Health (ARSH) in RCH Phase II** : It is proposed to provide adolescent health services through the existing subcenters/PHCs and CHCs (See Table-5).

**Initiatives for vulnerable groups**

Vulnerable communities include those groups who are under-served due to problems of geographical access, (even in better off states) and those who suffer from social and economic disadvantages such as Scheduled Castes/Scheduled Tribes (SCs/STs) and the urban poor. Scheduled caste people (166.6 million) and scheduled tribe people (84.3 million) in India are considered to be socially and economically the most disadvantaged group. The SCs constitute 16.2% and STs 8.2% of the country's population (as per the 2001 Census). The RCH indicators for these groups of people are worse than the urban average due to following reasons:

1. Poor connectivity to health centers because of distance, topography, and lack of public transport
2. Lack of flexibility and reduced responsiveness to local diversity and needs
3. Lack of appropriate Human Resource Development (HRD) policy to encourage/motivate the service providers to work in remote and tribal areas

**Goals**

To improve the health status of the vulnerable population by ensuring accessibility and availability of quality primary health care and family welfare services to them.

**Objectives**

The objectives of the Vulnerable Plan are:

(i) To improve accessibility, availability and acceptability of health services including RCH services by strengthening infrastructure including training and skill development of service providers, improving the supply of equipment, drugs etc. in an integrated and participatory manner

(ii) To bring them at par in this respect with the rest of the population, and thus improving the aggregate indicators towards achieving the expected results set under RCH Phase II by the end of 2010.
RCH II is an integrated and vast programme to address the challenges of maternal and child health. The umbrella of RCH covers family planning, ORT, RTI, STD and CSSM. It has a participatory approach of all communities including ISM practitioners, Dais, opinion leaders, NGOs apart from intersectoral coordination of Govt. The programme lays great emphasis on training, IEC and research and development activities related to RCH. Procurement procedures and audit arrangements have been streamlined to ensure uniformity in accounting. The modern system of Management Information and evaluation will ensure accountability, especially at district level. Lessons learnt from RCH I have been tackled well in RCH II. There is a scope for a separate plan for each state. The services are client-centered, demand driven and based on the needs of the community. Up gradations of level of facilities will contribute in reducing maternal and child mortality. Successful implementation will also provide outreach services to the vulnerable groups of population such as urban slums, tribal population and adolescents. Due to overlapping of expenditures there will be a reduction in costs inputs.

Critical appraisal

The goals set up in RCH II to be met by 2010 seem difficult to be met. It is well known that socioeconomic development is the biggest contraceptive. There has been no mention of socioeconomic development in population stabilization. Implementation of such a vast program on ground seems difficult. The contraceptive basket has very little to offer for the males. The appropriate technology of seven cleans during delivery has lost its importance. There is actually physical shortage of manpower in health institutions at the periphery. To add to this there is also shortage of kits, drugs, vaccines and contraceptives. Referral system and feedback are not smooth. To add to this there is also shortage of kits, drugs, vaccines and contraceptives. Referral system and feedback are not smooth when real time implementation on ground takes place. With the launch of National Rural Health Mission (NRHM) the govt desires that RCH II to be implemented under NRHM which has created lot of confusion in the minds of middle level managers.

For tribal population and urban poor, separate health plans addressing specific needs of these groups have been made.

Mainstreaming Gender and Equity in RCH Phase II

In India there is significant disparity in health care utilization and health status between women and men. Poor women consume less health care resources and suffer worse health than men and a large and increasing share of health expenditure by poor people is taking place outside of the public sector. The aim of mainstreaming gender is to correct imbalances between the position of men and women in terms of access to resources and benefits as well as to understand the differences in terms of health status and health determinants. The RCH Phase II equity objective is to reduce the health inequities both between geographical areas and between social groups, and to respond to the needs of vulnerable populations.

Funds Flow Arrangement for RCH Program and Management of Funds

There are two routes through which the MoH&FW, GoI transfers funds to the state/Union Territory governments for implementation of the RCH program. Funds mainly for salary and grants-in-aid to institutions and purchase of contraceptives for social marketing are routed through state treasuries, while funds for other activities and a few selective components are provided through the State Committee on Voluntary Action (SCOVA) / state RCH /FW/Health Society, most of the funds for the day-to-day running and implementation of the RCH program are passed on to these societies directly by the MoH&FW, GoI.

Monitoring and Evaluation

A comprehensive integrated Health management information system will be functional in RCH - II. Community Need Assessment and Monitoring Approach (CNAMA) will be used. The work plans for a particular year will originate from the sub center level under each PHC and are subsequently aggregate with appropriate additions at the CHC and district levels. Based on district action plans, aggregated state action plans are prepared at the state headquarters with appropriate additions. A similar reporting system will be followed for the monthly progress reports.

Strengths

RCH II is an integrated and vast programme to address the

Table - 5: Services to adolescents under RCH II

<table>
<thead>
<tr>
<th>Level of Care</th>
<th>Service Provider</th>
<th>Target Group</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub center</td>
<td>HW (F)</td>
<td>Unmarried &amp; Married Females and males</td>
<td>Enroll newly married couples, Provision of spacing methods, ANC care &amp; institutional delivery, STIs/HIV prevention, Anemia prevention</td>
</tr>
<tr>
<td>PHC/CHC</td>
<td>Health Assistant (F)/ LHV/ MO</td>
<td>Unmarried &amp; Married Females and males</td>
<td>Contraceptives, Management of menstrual disorders, RTIs education and management, Nutritional counseling and management of anemia, Counseling and services for MTP</td>
</tr>
</tbody>
</table>
of achieving population stabilization by 2045.

RCH II has been planned on the basis of lessons learnt from RCH I. Components of RCH II are Population Stabilization, Maternal Health, Reproductive Tract Infections (RTIs) and Sexually Transmitted Infections (STIs), Newborn and child health, Adolescent health, Initiatives for vulnerable groups, Mainstreaming gender and equity, Strengthening Systems and Partnerships.

To attain population stabilisation RCH II offers Expanding contraceptive choices in the form of injectables, non-steroidal oral contraceptive, female condoms, Lactational ammenorrhoea, safe days method and Non scalpel Vasectomy.

For improving maternal health, various schemes as Essential Obstetric care, Provision of Emergency Obstetric and Neonatal Care at First Referral Unit (FRU), Safe Abortion Services/Medical Termination of Pregnancy (MTP) and Janani Suraksha Yojana (JSY) have been started.

Prevention, early detection and effective management of common lower reproductive tract infections have been included. Guidelines for same have been made. Under RCH II, the activities being undertaken to achieve the NRHM goals under newborn and child health are : Integrated Management of newborn and childhood illnesses, Home Based Newborn Care (HBNC), Promotion of breast feeding and complementary feeding, Control of deaths due to ARI, Control of Deaths due to Diarrhoeal Diseases, Supplementation with micronutrients, Universal Immunization Programme. Integrated Management of newborn and childhood illnesses aims at training the health staff to refer/treat patient at out patient facility/ home based care, of neonates and children up to five years of age. Cotrimoxazole tablets are being provided at subcenters to control deaths due to Acute Respiratory Infections (ARI) and ORS packets are being provided to Control Deaths due to Diarrhoeal Diseases.

National Programme for Prophylaxis against Blindness in Children caused due to Vitamin A deficiency is being implemented through RCH programme. The objectives are to decrease the prevalence of Vit A deficiency to 0.3%. National Nutritional Anemia Prophylaxis Program is also now part of RCH. Iron and Folic acid tablets are being distributed to Children, adolescents and pregnant ladies. Under this programme all pregnant and lactating women are provided with one tablet (containing 100 mg of elemental iron and 0.5mg Folic acid) for 100 days. Those who have severe anemia are provided with double dose of these tablets health education apart from other services. For children Iron and Folic acid tablet containing 20 mg of elemental iron and 0.1mg of Folic acid are provided at sub center level. 100 tablets are given to children who are clinically anemic. As per the revised policy, infants between 6-12months of age are also included in the program as a significant proportion of these infants are anemic. For children 6-60 months, ferrous sulphate and Folic acid is to be provided in a liquid formulation. For safety sake liquid formulation should be dispensed in bottles so designed that only 1ml can be dispensed each time.

School children aged 6-10 yrs of age are also included in the programme. Children aged 6-10 yrs are to be provided 30 mg of elemental Iron and 250 mcg Folic acid per child per day for 100 days. Adolescents are to be supplemented in the same dosage and duration as adults.

Universal immunization programme is also being implemented through RCH and targets 6 vaccine preventable diseases. Recently Hepatitis B vaccination has been included and supply of auto disabled syringes is being ensured for immunisation. Adolescents have been included and are being provided services as dividends in terms of delaying the age at marriage, reducing the incidence of teenage pregnancy, the prevention and management of obstetric complications including access to early and safe abortion services and the reduction of unsafe sexual behavior.

Vulnerable communities include those groups who are underserved due to problems of geographical access, (even in better off states) and those who suffer from social and economic disadvantages such as Scheduled Castes/Scheduled Tribes (SCs/STs) and the urban poor. These have been included in RCH with specific goals and objectives to plans addressing specific needs of these groups. The RCH Phase II equity objective is to reduce the health inequities both between geographical areas and between social groups, and to respond to the needs of vulnerable populations. RCH II is an integrated and vast programme to address the challenges of maternal and child health.

References
Revised National Tuberculosis Control Programme (RNTCP)

Puja Dudeja & Ashok K. Jindal

In India today, two deaths occur every three minutes from tuberculosis (TB). But these deaths can be prevented. With proper care and treatment, TB patients can be cured and the battle against TB can be won.

Evolution of Tuberculosis Control in India: See Table 1

RNTCP: Launch, Expansion and Coverage

National Tuberculosis Control Programme launched in 1962, suffered from weakness in the form of poor managerial control, inadequate funding, over-reliance on x-ray, non-standard treatment regimens, low rates of treatment completion, and lack of systematic information on treatment outcomes (Evolution of Tuberculosis Control in India is given in Table 1). Program reviews showed that only 30% of estimated tuberculosis patients were diagnosed and only 30% of those were treated successfully. The Revised National Tuberculosis Control Programme (RNTCP), based on the DOTS strategy, took its roots in India in 1993 by pilot testing as Phase I project covering a population of about 18 million and was launched as a national Programme in 1997. The expansion began in late 1998 and at end of 2000, 30% of the country’s population was covered, and by the end of 2002, 50% of the country’s population was covered under the RNTCP (2). By the end of 2003, 778 million and at the end of year 2004, 997 million population was covered. By December 2005, around 97% (about 1080 million) of the population had been covered, and the entire country was covered under Directly Observed Treatment Short course (DOTS) by 24th March 2006 (3). In the first phase of RNTCP (1998-2005), the programme’s focus was on ensuring expansion of quality DOTS services to the entire country. The RNTCP has now entered its second phase in which the programme aims to firstly consolidate the gains made to date, to widen services both in terms of activities and access, and to sustain the achievements for decades to come in order to achieve ultimate objective of TB control in the country. Phase II of the RNTCP is a step towards achieving the TB-related Millennium Development Goal (MDG) targets. Directly Observed Treatment Short Course - ‘DOTS’ - remains the core strategy.

The Goal and Objectives of the RNTCP

Goal: The goal of TB Control Programme is to decrease mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in India.

Objectives:

- To achieve at least 85 percent cure rate of the newly diagnosed sputum smear-positive TB patients; and
- To detect at least 70 percent of new sputum smear-positive patients after the first goal is met.

Strategy: DOTS is a systematic strategy which has five components (See Box - 1).

‘DOTS’ - remains the core strategy; however all components of new Stop TB Strategy are incorporated in the second phase of RNTCP. These are:

1. Pursue quality DOTS expansion and enhancement, by improving the case finding and cure through an effective patient-centered approach to reach all patients, especially the poor.
2. Address TB-HIV, MDR-TB and other challenges by scaling up TB-HIV joint activities, DOTS Plus and other relevant approaches. The guidelines for management of MDR-TB under DOTS-Plus strategy have been developed.
3. Contribute to health system strengthening, by collaborating with other health programmes and general services.
4. Engage people with TB, and affected communities to demand, and contribute to effective care. This will involve scaling-up of community TB care; creating demand through context-specific advocacy, communication and social mobilization.
5. Enable and promote research for the development of new drugs, diagnostics and vaccines. Operational Research will also be needed to improve programme performance.

RNTCP Structure and Service Delivery Mechanisms

At the center: The Central TB Division (CTD) is responsible for developing technical policies, procuring drugs, preparing training modules, programme and financial monitoring, quality assurance, advocacy, operational research priorities and mobilising funds.

<table>
<thead>
<tr>
<th>Year</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1962</td>
<td>The National TB Control Programme (NTCP) launched. The strategy was based on early detection and treatment thereby converting infectious cases to noninfectious and preventing noninfectious cases from becoming infectious with treatment, Diagnosis through radiology and sputum microscopy, Free Domiciliary treatment through Primary Health Care Services, Establishing District Tuberculosis Centre in every district, Extend coverage under Short Course Chemotherapy (SCC), Strengthen state TB training and demonstration centers</td>
</tr>
<tr>
<td>1992</td>
<td>Government of India, together with the WHO and SIDA, reviewed the national programme and concluded that it suffered from various managerial and operational weaknesses. As a result, a Revised National Tuberculosis Control Programme (RNTCP) was designed</td>
</tr>
<tr>
<td>1993 -2005</td>
<td>Era of Directly Observed Treatment Short course (DOTS), RNTCP launched</td>
</tr>
<tr>
<td>2006-2010</td>
<td>RNTCP Phase II</td>
</tr>
</tbody>
</table>
Officer-TB Control. To further decentralise the diagnostic and supervisory work in the field under the charge of a Medical Officer-Tuberculosis Control (MO-TC) who does tuberculosis work in addition to his/her other responsibilities, as well as technical support units to the respective STC. Responsibilities of the STDCs include assisting the STC in training, supervision and monitoring of the programme, quality assurance of the RNTCP sputum microscopy services, advocacy and IEC, and operational research. The level of involvement of the STDCs, however, varies from state to state. Release of programme funds from the centre to the state and districts is channelled via the state and district TB control societies. State and district societies make decisions on budget formulation according to guidelines from the centre, hire contractual staff, purchase necessary items, oversee programme planning, implementation, and monitoring, and perform other functions which greatly facilitate programme implementation.

**Box - I : Components of DOTS**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Political and administrative commitment</strong> : It warrants the topmost priority, which it has been accorded by the Government of India. This priority must be continued and expanded at the state, district and local levels.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Good quality diagnosis</strong> : Good quality microscopy allows health workers to see the tubercle bacilli and is essential to identify the infectious patients who need treatment the most.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Good quality drugs and an uninterrupted supply of good quality anti TB drugs</strong> : In the RNTCP, a box of medications for the entire treatment is earmarked for every patient registered, ensuring the availability of the full course of treatment the moment the patient is initiated on treatment.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Supervise treatment to ensure right treatment</strong> : The heart of the DOTS programme is “directly observed treatment” in which a health worker, or another trained person who is not a family member, watches as the patient swallows the anti-TB medicines in their presence.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Systematic monitoring and accountability</strong> : The programme is accountable for the outcome of every patient treated. This is done using standard recording and reporting system, and the technique of ‘cohort analysis’. The cure rate and other key indicators are monitored at every level of the health system, and if any area is not meeting expectations, supervision is intensified. The RNTCP shifts the responsibility for cure from the patient to the health system.</td>
</tr>
</tbody>
</table>

**At the State** : The RNTCP is integrated with the general health care delivery systems in the states. At the State level, the State Tuberculosis Officer (STO) is responsible for planning, training, supervising and monitoring the programme in their respective states as per the guidelines of the State TB Control Society or its equivalent (STSC or its equivalent). The STO based at the State TB Cell is administratively answerable to the State Government and technically follows the instructions of the CTD, and coordinates with CTD and the districts for executing the duties mentioned above. The State TB Cell (STC) is responsible for the supervision and monitoring of the programme throughout the state.

**At the District** : District TB Centre (DTC) is the key organisational unit responsible for the implementation of the programme in the respective districts. The district is the key level for the management of primary health care services. The district level (or municipal corporation level) performs functions similar to those of the state level in its respective area. The Chief District Health Officer (CDHO) / Chief District Medical Officer (CDMO) or an equivalent functionary in the district is responsible for all medical and public health activities including control of TB. The District Tuberculosis Centre (DTC) is the nodal point for TB control activities in the district. In RNTCP, the primary role of the DTC has shifted from a clinical one to a managerial one. The District TB Officer (DTO) at the DTC has the overall responsibility of management of RNTCP at the district level as per the programme guidelines. The DTO is also responsible for involvement of other sectors in RNTCP and is assisted by an MO, Statistical Assistant and other paramedical staff. For each district, there should be a full-time DTO, who is trained in RNTCP at a central level institution.

The DTC is supported by sub-district TB Units (TUs) established for every 5, 00,000 population to serve as a link between the district level and the periphery. The TU is the lowest reporting unit under the RNTCP. At the TUs, a special cadre of dedicated TB supervisory staff, the Senior Treatment Supervisor (STS) and the Senior Tuberculosis Laboratory Supervisor (STLS), have been appointed on a contractual basis for carrying out supervisory work in the field under the charge of a Medical Officer-TB Control. To further decentralise the diagnostic and treatment services, RNTCP Designated Microscopy Centres (DMCs) have been established for every 1, 00,000 population. Norms for the establishments of TUs and DMCs are relaxed to 2, 50,000 and 50,000 population respectively in hilly/difficult and tribal areas. In addition, a vast network of DOT centres (treatment centres), all with trained DOT providers, have been established in all RNTCP areas so that patients can have easy access to TB treatment. In addition, there are 17 State TB Training and Demonstration Centres (STDCs) which act as technical support units to the respective STC. Responsibilities of the STDCs include assisting the STC in training, supervision and monitoring of the programme, quality assurance of the RNTCP sputum microscopy services, advocacy and IEC, and operational research. The level of involvement of the STDCs, however, varies from state to state. Release of programme funds from the centre to the state and districts is channelled via the state and district TB control societies. State and district societies make decisions on budget formulation according to guidelines from the centre, hire contractual staff, purchase necessary items, oversee programme planning, implementation, and monitoring, and perform other functions which greatly facilitate programme implementation.

**Tuberculosis unit** : A major organizational change in RNTCP is the creation of a sub-district level Tuberculosis Unit. The Tuberculosis unit (TU) consists of a designated Medical Officer-Tuberculosis Control (MO-TC) who does tuberculosis work in addition to his/her other responsibilities, as well as two full-time supervisory staff for tuberculosis work—a Senior Treatment Supervisor (STS) and a Senior Tuberculosis Laboratory Supervisor (STLS). TUs are generally based in a Community Health Centre (CHC), Taluk Hospital (TH) or Block Primary Health Centre (BPHC). The team of STS and STLS at the Tuberculosis Unit level (TU level) are under the administrative supervision of the DTO / MO-TC. The TU covers a population of approximately 500,000 (250,000 in tribal, desert, remote and hilly regions). The TU will have one Microscopy Centre for every 100,000 population (50,000 in tribal, desert, remote and hilly regions) referred to as the Designated Microscopy Centre (DMC). DMCs are also provided in Medical Colleges, Corporate hospitals, ESI, Railways, NGOs, private hospitals, and
etc, depending upon requirements. The TU is responsible for accurate maintenance of the Tuberculosis Register and timely submission of quarterly reports to the district level. The TU is the nodal point for TB control activities in the sub-district.

**Definitions - Types of Disease**

**Pulmonary Tuberculosis, Smear-Positive**: TB in a patient with at least 2 initial sputum smear examinations (direct smear microscopy) positive for AFB or TB in a patient with one sputum smear examination positive for AFB and radiographic abnormalities consistent with active pulmonary TB as determined by the treating MO or TB in a patient with one sputum smear specimen positive for AFB and culture positive for *M. tuberculosis*.

**Pulmonary tuberculosis, Smear-negative**: TB in a patient with symptoms suggestive of TB at least 3 sputum smear examinations negative for AFB, and radiographic abnormalities consistent with active pulmonary TB as determined by the treating MO followed by a decision to treat the patient with a full course of anti-tuberculosis therapy or Diagnosis based on positive culture but negative AFB sputum smear examinations.

**Extra Pulmonary tuberculosis**: TB of any organ other than the lungs, such as the pleura (TB pleurisy), lymph nodes, intestines, genitourinary tract, skin, joints and bones, meninges of the brain, etc. Diagnosis should be based on culture-positive specimen from the extra-pulmonary site, histological, radiological, or strong clinical evidence consistent with active extra pulmonary TB followed by decision of the treating MO to treat with a full course of anti-TB therapy. Pleurisy is classified as extra pulmonary TB. A patient diagnosed with both sputum smear positive pulmonary and extra pulmonary TB should be classified as pulmonary TB.

**Definitions - Types of cases**

**New**: A case who has never had treatment for tuberculosis or has taken anti-tuberculosis drugs for less than one month.

**Relapse**: A TB patient who was declared cured or treatment completed by a physician, but who reports back to the health service and is now found to be sputum smear positive.

**Transferred in**: A TB patient who has been received for treatment into a Tuberculosis Unit, after starting treatment in another unit where s/he has been registered.

**Treatment after default**: A TB patient who received anti-tuberculosis treatment for one month or more from any source and returns to treatment after having defaulted, i.e., not taken anti-TB drugs consecutively for two months or more, and is found to be sputum smear positive.

**Failure**: Any TB patient who is smear positive at 5 months or more after starting treatment. Failure also includes a patient who was treated with Category III regimen but who becomes smear positive during treatment.

**Defaulted**: A patient who has not taken anti-TB drugs for 2 months or more consecutively after starting treatment.

**Transferred out**: A patient who has transferred to another Tuberculosis Unit/District and his/her treatment result (outcome) is not known.

**Tuberculous infection**: It is the presence of viable but not multiplying virulent tubercular bacilli within the cells of the human being without any manifestation of clinical symptoms.

**Tuberculous disease**: It is the presence of viable, multiplying, virulent tubercular bacilli within the cells or tissues, with the presence of clinical symptoms.

**Definitions - Treatment Outcomes**

**Cured**: Initially sputum smear-positive patient who has completed treatment and had negative sputum smears, on two occasions, one of which was at the end of treatment.

**Treatment completed**: Sputum smear-positive patient who has completed treatment, with negative smears at the end of the intensive phase but none at the end of treatment or Sputum smear-negative TB patient who has received a full course of treatment and has not become smear-positive during or at the end of treatment or Extra-pulmonary TB patient who has received a full course of treatment and has not become smear positive during or at the end of treatment.

**Died**: Patient who died during the course of treatment regardless of cause.

**Failure**: Any TB patient who is smear positive at 5 months or more after starting treatment. Failure also includes a patient who was treated with Category III regimen but who becomes smear positive during treatment.

**Defaulted**: A patient who has not taken anti-TB drugs for 2 months or more consecutively after starting treatment.

**Transferred out**: A patient who has been transferred to another Tuberculosis Unit/District and his/her treatment result (outcome) is not known.

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**Tuberculous disease**: It is the presence of viable, multiplying, virulent tubercular bacilli within the cells or tissues, with the presence of clinical symptoms.

**Diagnosis**

Three samples of sputum are collected on two days [spot (1 day), overnight/early morning (II Day), spot (II Day)] and are examined under microscope. Results of sputum microscopy are given in Table - 2. Algorithm for diagnosis and treatment is given as Fig. - 1.

### Table - 2 : Results of sputum microscopy

<table>
<thead>
<tr>
<th>If the slide has</th>
<th>Result</th>
<th>Grading</th>
<th>No of fields to be examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 10 AFB per oil immersion field</td>
<td>Pos</td>
<td>3+</td>
<td>20</td>
</tr>
<tr>
<td>1-10 AFB per oil immersion field</td>
<td>Pos</td>
<td>2+</td>
<td>50</td>
</tr>
<tr>
<td>10-00 AFB per 100 oil immersion field</td>
<td>Pos</td>
<td>1+</td>
<td>100</td>
</tr>
<tr>
<td>1-9 AFB per 100 oil immersion fields</td>
<td>Pos</td>
<td>Scanty - B *</td>
<td>100</td>
</tr>
<tr>
<td>No AFB in 100 oil immersion fields</td>
<td>Neg</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

* Record actual number of bacilli seen in 100 fields - e.g “ Scanty 4”
Fluorescent microscopes have been provided to the state designated Intermediate Reference Laboratories (IRLs) under RNTCP and at present, the use of fluorescence microscopy is linked to the culture and Drug Sensitivity Testing (DST) activities of the IRLs. The most important advantage of the fluorescence technique is that slides can be examined at a lower magnification, thus allowing the examination of a much larger area per unit of time.

**Treatment under RNTCP**

Treatment in RNTCP is under two phases: Intensive and continuation phase. Categorization of patients is given in Table - 3. Duration of treatment along with phases is given for each category in Table - 4. Duration of treatment if patient is still sputum positive at end of intensive phase (IP) is given in Table - 5, while details of anti-tubercular drugs are given in Table - 6 and 7. Treatment categories and their relation to sputum examination schedule is given in Table - 8.

**Management of patients who interrupt treatment**: The details are given in Table - 9 and 10.

---

**Table - 3**: Classification of categories, types of patients, regimens adopted under RNTCP

<table>
<thead>
<tr>
<th>Cat</th>
<th>Type of patient</th>
<th>Regimens</th>
<th>Duration in months</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>New sputum smear +ve</td>
<td>2(HRZE)₃</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Seriously ill sputum -ve</td>
<td>4(HR)₃</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seriously ill sputum extra-pulmonary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Sputum +ve relapse</td>
<td>2(HRZE)₃</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Sputum +ve failure</td>
<td>1(HRZE)₃</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sputum +ve treatment after default</td>
<td>5(HRE)₃</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Sputum -ve Extra pulmonary not seriously ill</td>
<td>2(HRZ)₃ 4(HR)₃</td>
<td>6</td>
</tr>
<tr>
<td>IV</td>
<td>MDR TB</td>
<td>4(KOCZEEI) 12-18(OCEEI)</td>
<td>18-24</td>
</tr>
</tbody>
</table>
Chemoprophylaxis for Children
Household contacts of smear-positive TB cases, especially those below 6 years of age, must be screened for symptoms of tuberculosis. In case of symptoms being present, the diagnostic algorithm for pediatric TB should be followed and the child should be given a full course of anti TB treatment if he is diagnosed as a TB case. For asymptomatic children and those who are not found to be suffering from TB, chemoprophylaxis with Isoniazid (5 mg per kg body wt) should be administered daily for a period of six months. This is regardless of the BCG vaccination status.

Hospitalization of TB patients
Some TB patients may need hospitalization during their illness. All indoor patients are to be treated with RNTCP regimens. The treatment is given using prolongation pouches which will be supplied by District TB Officer through the STS of that TU. On discharge, patients may be given a maximum of three doses (1 week drug supply) to cover the intervening period prior to their continuation of treatment at their respective DOT Centre, which may/not be in the same district, hence ensuring no interruption in treatment. All indoor patients treated under RNTCP should be registered under the local TU in which the hospital is located.
<table>
<thead>
<tr>
<th>Cat</th>
<th>Type of patient</th>
<th>Regimen*</th>
<th>Pre-Treatment sputum</th>
<th>Test at month (end IP)</th>
<th>If result is</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>New Sputum smear-positive</td>
<td>$2H_3R_3Z_3E_3 + 4H_3R_3$</td>
<td>+</td>
<td>2</td>
<td>-</td>
<td>Start continuation phase, test sputum again at 2 month in CP (4 months) and at the end of treatment (6 months)</td>
</tr>
<tr>
<td></td>
<td>Seriously ill ** Sputum smear-negative</td>
<td>$2H_3R_3Z_3 + 4H_3R_3$</td>
<td>-</td>
<td>2</td>
<td>+</td>
<td>Continue intensive phase for one more month, test sputum again at end of extended IP (3 months), end then at 2 months in CP (5 months) and at the end of treatment (7 months) #</td>
</tr>
<tr>
<td>II</td>
<td>Sputum smear-positive Relapse</td>
<td>$2H_3R_3Z_3E_3S_3 + 1H_1R_3Z_3 + 4H_3R_3E_3$</td>
<td>+</td>
<td>3</td>
<td>-</td>
<td>Start continuation phase, test sputum again at 2 month in CP and at the end of treatment (8 months)</td>
</tr>
<tr>
<td></td>
<td>Sputum smear-positive Failure</td>
<td>$2H_3R_3Z_3 + 4H_3R_3$</td>
<td>-</td>
<td></td>
<td>+</td>
<td>Continue intensive phase for one more month, test sputum again at end of extended IP (3 months), end then at 2 months in CP (5 months) and at the end of treatment (7 months) #</td>
</tr>
<tr>
<td>III</td>
<td>New Sputum smear-negative, not seriously ill</td>
<td>$2H_3R_3Z_3 + 4H_3R_3$</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>Start continuation phase, test sputum again at the end of treatment (6 months)</td>
</tr>
<tr>
<td></td>
<td>New extra-pulmonary, not seriously ill</td>
<td>$2H_3R_3E_3$</td>
<td>+</td>
<td></td>
<td></td>
<td>Re-register the patient and begin Category II treatment #</td>
</tr>
</tbody>
</table>

* The number before the letters refers to the number of months of treatment. The subscript after the letters refers to the number of doses per week. The dosage strengths are as follows: H: Isoniazid (600mg), R: Rifampicin (450mg), Z: Pyrazinamide (1500mg), E: Ethambutol (1200mg), S: Streptomycin (750mg). Patients who weigh 60 kg or more receive additional rifampicin 150 mg. Patients who are more than 50 years old receive streptomycin 500mg. Patients who weigh less than 30 kg receive drugs as per body weight. Patients in Categories I and II who have a positive sputum smear at the end of the initial intensive phase receive an additional month of intensive phase treatment.

** Seriously ill also includes, any patient, pulmonary or extra pulmonary who is HIV positive and declares his sero-status to the categorizing/treating medical officer. For the purpose of categorization, HIV testing should not be done.

*** In rare and exceptional cases, patients who are sputum smear-negative or who have extra-pulmonary disease can have Relapse or Failure. This diagnosis in all such cases should always be made by an MO and should be supported by culture or histological evidence of current, active TB. In these cases, the patient should be categorized as others and given Category II treatment.

# Any patient treated with Category I who has a positive smear at 5 months or later should be considered a Failure and started on Category II treatment afresh. Any patient on Category III who has a positive smear anytime during the treatment is also considered as Failure and started on Category II treatment.

DOTS plus

DOTS-Plus is an integral component of RNTCP to manage MDR-TB and is being implemented through programme infrastructure (4). The first WHO endorsed DOTS-Plus programmes began in 2000. At that time, the Green Light Committee (GLC) was established to promote access to high quality second-line drugs for appropriate use in TB control programmes. DOTS-Plus pilot projects have demonstrated the feasibility and effectiveness of MDR-TB treatment in less affluent countries. In 2002, the Global Fund to fight AIDS, TB, and Malaria (GFATM) started financing TB control programmes, including MDR-TB, greatly reducing the economic barrier to MDR-TB control. Based on data and experience from these projects, practices and further scientific evidence have emerged regarding services for MDR-TB. DOTS-Plus programmes can and should strengthen the basic DOTS strategy. XDR TB (extensive drug resistant tuberculosis) is defined as MDR TB with further resistance to 3 of 6 classes of second line drugs. DOTS plus which is handling MDR Tb has a serious threat from XDR TB.

Involvement of Private Practitioners in RNTCP

Private Practitioners (PPs) are generally the first point of contact for significant proportion of patients with tuberculosis (5). All PPs can support and encourage effective tuberculosis control by:

- Ensuring prompt referral of patients with cough for 3
**Table 9**: Management of patients who were smear-negative at diagnosis and who interrupt treatment

<table>
<thead>
<tr>
<th>Treatment received before interruption</th>
<th>Length of interruption</th>
<th>DO a sputum Smear examination</th>
<th>Result of sputum Smear examination</th>
<th>Outcome</th>
<th>Re-registration</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 month</td>
<td>Less than 2 months</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Resume Treatment and Complete All doses</td>
</tr>
<tr>
<td>2 months or more</td>
<td>Yes</td>
<td>Neg</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Resume Treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pos</td>
<td>Default</td>
<td>New</td>
<td>Begin CAT I afresh</td>
<td></td>
</tr>
<tr>
<td>Less than 1 month</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Resume Treatment and Complete All doses</td>
<td></td>
</tr>
<tr>
<td>More than 1 month</td>
<td>More than 2 months</td>
<td>Yes</td>
<td>Neg</td>
<td>-</td>
<td>-</td>
<td>Resume Treatment and Complete All doses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pos</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Begin CAT II Treatment afresh</td>
<td></td>
</tr>
</tbody>
</table>

**Table 10**: Management of New smear-positive cases who interrupt treatment (Category I)

<table>
<thead>
<tr>
<th>Treatment received before interruption</th>
<th>Length of interruption</th>
<th>DO a sputum Smear examination</th>
<th>Result of sputum Smear examination</th>
<th>Outcome</th>
<th>Re-registration</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 month</td>
<td>Less than 2 weeks</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td>2-7 Weeks</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Start again on CAT I*</td>
</tr>
<tr>
<td>8 Weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>New</td>
<td>Start again on CAT II**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>Continue CAT I*</td>
<td></td>
</tr>
<tr>
<td>1-2 Months</td>
<td>Less than 2 weeks</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td>2-7 Weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>-</td>
<td>-</td>
<td>1 extra month of intensive phase of CAT I*</td>
<td></td>
</tr>
<tr>
<td>8 Weeks or more</td>
<td>Yes</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>Continue CAT I*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Start on CAT II*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>Continue CAT I*</td>
<td></td>
</tr>
<tr>
<td>More than 2 months</td>
<td>2-7 Weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>Default***</td>
<td>Other</td>
<td>Start on CAT II*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>Continue CAT I*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 Weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Start on CAT II*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>Continue CAT I*</td>
<td></td>
</tr>
</tbody>
</table>

* A patient must complete all 24 doses of the initial intensive phase. For example, if a patient has to continue his previous treatment and he took 1 month of treatment and he took 1 month of treatment (12 doses) before interrupting. He will have to take 1 more month (12 doses) of the intensive treatment. The patient will then start the continuation phase of treatment.

** A patient who must start again will restart treatment from the beginning.

*** Although this patient does not strictly fit the definition of default. Default most closely describes the outcome of this patient, although at re-registration the patient should be categorized as ‘Other’.

* Patients with extra-pulmonary TB should receive Category III treatment unless they are seriously ill, in which case they should receive Category I treatment.

** Examples of seriously ill patients are those suffering from meningitis, disseminated TB, tuberculous pericarditis, peritonitis, bilateral or extensive pleurisy, spinal TB with neurological complications, smear-negative pulmonary TB with extensive parenchymal involvement, intestinal, genito-urinary TB and co-infection with HIV. All forms of pediatric smear negative TB except primary complex and pediatric extrapulmonary lymph node TB and unilateral pleural effusion.
individuals. A low cost and high quality cure for TB is provided.

Commonest opportunistic infection amongst HIV-infected cases of TB occur in India annually. Active TB disease is the health challenge in India and it is estimated that 1.8 million HIV/AIDS in India. Tuberculosis (TB) continues to be a public population, which translates to 2.5 million people living with HIV infection is estimated to be 0.36 % of the population, which translates to 2.5 million people living with HIV/AIDS in India. Tuberculosis (TB) continues to be a public health challenge in India and it is estimated that 1.8 million cases of TB occur in India annually. Active TB disease is the commonest opportunistic infection amongst HIV-infected individuals. A low cost and high quality cure for TB is provided under RNTCP which is implementing the DOTS strategy of diagnosis and treatment for TB nationwide. In 2007-08, TB-HIV collaborative activities are to be extended to the entire country and have been included as an integral part of NACP III and RNTCP II.

The goal of the National framework is to further enhance collaboration between RNTCP and NACP, and reducing the burden of TB and HIV in India. The objectives are:
1. To establish mechanisms for coordination between RNTCP and NACP at National, State and District levels.
2. To decrease morbidity and mortality due to tuberculosis among persons living with HIV/AIDS.
3. To decrease the impact of HIV in tuberculosis patients and provide access to HIV related care and support to HIV-infected TB patients.

Conclusion
RNTCP is the second largest programme of the country and has strengthened the existing NTP structure and created TB unit at the sub district level. RNTCP has expanded in a systematic way covering the whole of country by March 2006. There has been intensified Public private mix in scaling up the initiatives to strengthen case detection and treatment. Political commitment is one of the main components of DOTS. DOTS have been made responsible for carrying out defaulter retrieval activity about the patients put on treatment. This is ensures completion of treatment by the patients. Various NGOs are also playing useful role by providing man power or financial assistance.

Critical appraisal
There has been poor coverage due to gaps in primary health care infrastructure and manpower in difficult to assess areas. Quality of sputum examination is not up to the mark. The private practitioners at many places use non standard treatment regimens. The problem of drug resistant TB is emerging very fast which is virtually untreatable and spreading all over the world including India. Given the problems of number of drugs to be used, their cost, adverse effect, the duration of therapy and accessibility of treatment, this group is going to pose a big problem for the RNTCP in particular and the community at large. Direct supervision is the corner stone for the success of RNTCP but in our country, lot of stigma is still attached to TB. As a result, many patients, especially young females, who want to hide their ailment, do not go to DOTS-provider thrice or even once a week. Such patients often resort to influence the DOTS-provider and get medicines in bulk. In this process, direct supervision is lost.

Summary
National Tuberculosis Control Programme was launched in 1962 and suffered from weakness in the form of poor managerial control, inadequate funding, over-reliance on x-ray, non-standard treatment regimens, low rates of treatment completion, and lack of systematic information on treatment outcomes. The Revised National Tuberculosis Control Programme (RNTCP), based on the DOTS strategy, took its roots in India in 1993 with the goal of decreasing mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in India. It progressed in a phased manner.
manner and by 24th March 2006 entire country was covered by it and entered its second phase (2006-2010).

The objectives of the RNTCP are to achieve at least 85 percent cure rate of the newly diagnosed sputum smear-positive TB patients and to detect at least 70 percent of new sputum smear-positive patients after the first goal is met. Directly Observed Treatment Short course (DOTS) strategy has five components: Political and administrative commitment, Good quality drugs & an uninterrupted supply of good quality anti-TB drugs, Good quality diagnosis using sputum microscopy, Systematic monitoring and accountability and supervised treatment to ensure the right treatment. DOTS remain the core strategy of RNTCP II however few additional components in the form of DOTS expansion and enhancement, addressing TB-HIV, collaboration with other health programmes and general services and involvement of private practitioners have been emphasized.

The structure of RNTCP has The Central TB Division (CTD) at the top, State TB Cell (STC) at the state and District TB Centre (DTC) at the district level. The TB Units (TUs) at the subdistrict level is the lowest reporting unit under the RNTCP. The Tuberculosis unit (TU) consist of a designated Medical Officer-Tuberculosis Control (MO-TC) who does tuberculosis work in addition to his/her other responsibilities, as well as two full-time supervisory staff for tuberculosis work - a Senior Treatment Supervisor (STS) and a Senior Tuberculosis Laboratory Supervisor (STLS). The TU covers a population of approximately 500,000 (250,000 in tribal, desert, remote and hilly regions). The TU will have one Microscopy Centre for every 100,000 population (50,000 in tribal, desert, remote and hilly regions) referred to as the Designated Microscopy Centre (DMC).

Diagnosis of a case is based on sputum microscopy where three samples over two days are taken andZN method of staining is used. For treatment the patient is classified into a category based on the definitions given in the programme and treatment of that particular category is started for the patient. The treatment is divided into two phases intensive phase and continuation phase. Antitubercular drugs being used in RNTCP are 
H : Isoniazid  
R : Rifampicin, 
Z : Pyrazinamide  
E : Ethambutol,  
S : Streptomycin. Household contacts of smear-positive TB cases, especially those below 6 years of age, must be screened for symptoms of tuberculosis. For asymptomatic children and those who are not found to be suffering from TB, chemoprophylaxis with isoniazid (5 mg per kg body wt) should be administered daily for a period of six months.

DOTS-Plus is an integral component of RNTCP to manage MDR-TB and is being implemented through programme infrastructure. XDR TB (extensive drug resistant tuberculosis) is defined as MDR TB with further resistance to 3 of 6 classes of second line drugs.

Another important aspect for success of RNTCP is involvement of private practitioners and NGOs in the programme. RNTCP also has a tribal action plan to encourage tribal populations to report early in the course of illness for diagnosis, Enhance treatment outcomes amongst tribal populations, and Promote closer supervision of tribal areas by RNTCP staff. Tuberculosis is the commonest opportunistic infection in HIV cases. There is a strong collaboration between RNTCP and National AIDS Control Programme to decrease morbidity and mortality due to tuberculosis among persons living with HIV/AIDS and to decrease the impact of HIV in tuberculosis patients and provide access to HIV related care and support to HIV-infected TB patients.

References
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6. Involvement of Non-Governmental Organizations in the Revised National Tuberculosis Control Programme October 2005 Central TB Division, Directorate General of Health Services Ministry of Health and Family Welfare, Nirman Bhavan,

Further Suggested Reading
National Vector Borne Disease Control Programme (NVBDCP)

Puja Dudeja & Ashok K. Jindal

NVBDCP is an umbrella programme for prevention and control of major vector borne diseases of public health importance namely Malaria, Filaria, Japanese encephalitis (JE), Kala azar and Dengue/Dengue Hemorrhagic Fever (DHF) (1). The programme lays special focus on the vulnerable groups of the society namely, children, women, Scheduled Castes (SC) and Scheduled Tribes (ST). Under the programme, it is ensured that the disadvantaged and marginalized sections benefit from the delivery of services so that the desired National Health Policy and National Rural Health Mission (NRHM) goals are achieved.

Before 2003, various centrally sponsored schemes namely National Anti Malaria Programme, National Filarial Control Programme and Kala Azar Control Programme were fighting with menace of malaria, filariasis and kala azar respectively on a cost sharing basis between center and state (2). There was no centrally sponsored programme for JE, dengue, chikungunia. The states were managing these with their own resources without any financial and technical assistance. From the year 2003-2004, Government of India decided to fight the peril of all vector borne diseases on a common platform as NVBDCP.

Mission Statement
Integrated accelerated action towards reducing mortality on account of malaria, dengue, Japanese Encephalitis by half and elimination of Kala-azar by year 2010 and elimination of Lymphatic Filariasis by 2015 (3).

Strategy
During the Tenth Plan (2002-2007), NVBDCP was planned to be implemented through the existing health care infrastructure and was planned to focus on improved training of health care workers, reporting and monitoring of VBDs, insecticide and drug resistance, involvement of Panchayati Raj Institutions (PRIs), improved IEC and community acceptance and availability of ITBNs (4). During the eleventh five year plan (2007-2012) the existing strategies of vector borne diseases would be further continued and further strengthened with special emphasis on surveillance, human resource development, behavior change communication, supervision and monitoring, quality assurance and quality control of diagnostics & drugs and operational research (5).

Implementation
The programme runs under the Union Ministry of Health and Family Welfare. The execution of the programme at various levels is given in Table 1.

<table>
<thead>
<tr>
<th>Level</th>
<th>Agency</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>Directorate of National Vector Borne Diseases Control Programme</td>
<td>Framing technical guidelines &amp; policies as to guide the states for implementation of Programme</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Budgeting and planning the logistics pertaining to central sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monitoring of implementation through regular reports and returns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evaluation of Programme implementation</td>
</tr>
<tr>
<td>State</td>
<td>Regional Offices for Health and Family Welfare (ROH &amp; FW) located at state HQ</td>
<td>Conduct the entomological studies in collaboration with zonal entomological setup of the state</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drug resistance studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cross checking of blood slides for quality control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity building of the states</td>
</tr>
<tr>
<td></td>
<td>Directorate of Health Services</td>
<td>Responsible for implementation of Programme strategies and monitoring in accordance to Programme guidelines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coordination between the state and centre for effective implementation and monitoring</td>
</tr>
<tr>
<td>District</td>
<td>District Malaria Offices</td>
<td>Key unit for planning and monitoring of Programme under a technical officer</td>
</tr>
<tr>
<td>Village</td>
<td>Primary Health Centres</td>
<td>Passive surveillance for malaria</td>
</tr>
</tbody>
</table>

Malaria
Malaria is major public health trepidation in our country. At the...
As per the data from National Health Profile 2007, there were 1.78 million cases of malaria and 1704 deaths in the year 2006. The largest numbers of cases in the country were reported by Orissa, followed by Jharkhand, West Bengal, Assam, Chhattisgarh, Rajasthan, Gujarat & Uttar Pradesh and the largest numbers of deaths were reported by Assam followed by Orissa, West Bengal, Arunachal Pradesh, Meghalaya, Maharashtra, Mizoram, Gujarat and Karnataka.

Evolution of the Programme
The National Malaria Control Program (NMCP) was launched in 1953 and was redesignated as Eradication Program (NMEP) in 1958. The NMEP made an excellent progress till 1965, bringing down the malaria incidence to almost nil. However, thereafter setbacks started due to various operational, administrative and technical reasons. Against this background, in 1977, the Modified Plan of Operations (MPO) was started. The evolution is presented in Table - 2.

In 1995 the Malaria Action Plan (MAP) was launched. It envisaged decentralized planning (akin to RCH), covering a total of 199 million (20.6%) population living in high risk areas. The criteria for defining a high risk area are as follows:

(A) Rural / Tribal areas
1. Death due to malaria (Pf) - last 3 years
2. Doubling SPR in last 3 years
3. No doubling but average SPR in 3 years > 4%
4. P. falciparum > 30 % with SPR > 3 % in 3 years
5. Chloroquine resistant Pf.
6. Aggregation of labor in project areas.
7. New settlement in endemic/receptive and vulnerable area.

(B) Urban Areas
1. SPR>10% during any of last 3 years
2. Population > 50000 & 5% with ration malaria: fever cases > 1/3

In 1997 the Enhanced Malaria Control Project (EMCP) was launched.
launched covering a total of 1045 PHCs in 100 districts of AP, Jharkhand, Gujarat, MP, Maharashtra, Orissa and Rajasthan through World Bank assistance. The components were Early detection and prompt treatment through a Link worker for every 2000 population and selective vector control using Temephos (Abate) for anti-larval and DDT / malathion for residual applications.

In 1998, World Health Organization and other partners initiated the “Roll Back Malaria” (RBM) plan. The key interventions were Vector Control through Insecticide Treated Nets (ITN) and Indoor Residual Spray (IRS); Intermittent Preventive Therapy during pregnancy (IPT); and prompt and effective case management, in particular Artemisinin based combination therapy.

In 2003, the NVBDCP was launched, integrating the various components of control strategies for common vector borne diseases. In 2005, the programme was made an important strategic part of NRHM.

Malaria control strategies in NVBDCP

1. Early case Detection and Prompt Treatment (EDPT)
   - EDPT is the main strategy of malaria control - radical treatment is necessary for all the cases of malaria to prevent transmission of malaria.
   - Chloroquine is the main anti-malarial drug for uncomplicated malaria.
   - Drug Distribution Centres (DDCs) and Fever Treatment Depots (FTDs) have been established in the rural areas for providing easy access to anti-malarial drugs to the community.
   - Alternative drugs for chloroquine resistant malaria are recommended as per the drug policy of malaria. NVBDCP drug policy recommends the use of combination therapy i.e Artemisin plus Sulfadoxine Pyrimethamine as a second line of treatment for P. falciparum cases in chloroquine resistant areas.
   - All fever cases should preferably be investigated for malaria by microscopy or Rapid Diagnostic Kit (RDK). RDK is an immunochromatographic test. It detects Plasmodium falciparum histidine rich protein in blood.

2. Vector Control
   (i) Chemical Control
      - Use of Indoor Residual Spray (IRS) with insecticides recommended under the programme.
      - Use of chemical larvicides like Abate in potable water
      - Aerosol space spray during day time
      - Malathion fogging during outbreaks
   (ii) Biological Control
      - Use of larvivorous fish in ornamental tanks, fountains etc.
      - Use of biocides.

3. Personal Prophylactic Measures that individuals/communities can take up
   - Use of mosquito repellent creams, liquids, coils, mats etc.
   - Screening of the houses with wire mesh
   - Use of bednets treated with insecticide
   - Wearing clothes that cover maximum surface area of the body

4. Community Participation
   - Sensitizing and involving the community for detection of Anopheles breeding places and their elimination
   - NGO schemes involving them in programme strategies
   - Collaboration with CII/ASSOCHAM/FICCI
   - Observance of anti malaria month in June and intensify activities

5. Environmental Management & Source Reduction Methods
   - Source reduction i.e. filling of the breeding places
   - Proper covering of stored water
   - Channelization of breeding source

6. Monitoring and Evaluation of the programme
   - Monthly Computerized Management Information System (CMIS)
   - Field visits by state by State National Programme Officers
   - Field visits by Malaria Research Centres and other ICMR Institutes
   - Feedback to states on field observations for corrective actions.

National Antimalaria Drug Policy

National antimalaria drug policy essentially provides a framework for the safe and effective treatment of uncomplicated and severe malaria as well as prevention of malaria in vulnerable groups, such as pregnant women and young children. The policy is as follows:

Presumptive Treatment (PT) - Low Risk Areas: PT comprises of a single dose of chloroquine phosphate 10 mg/kg. body weight to all fever / suspected malaria cases (Table - 3).

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>Chloroquine Phosphate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mg. Base</td>
</tr>
<tr>
<td>&lt; 1</td>
<td>75</td>
</tr>
<tr>
<td>1-4</td>
<td>150</td>
</tr>
<tr>
<td>5-8</td>
<td>300</td>
</tr>
<tr>
<td>9-14</td>
<td>450</td>
</tr>
<tr>
<td>15 &amp; above</td>
<td>600</td>
</tr>
</tbody>
</table>

Presumptive Treatment (PT) - High Risk Areas: As per revised policy of NVBDCP presumptive treatment of all suspected malaria cases, up to sub-centre level only, in “high risk areas” is as shown in Table - 4.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroquine Base</td>
<td>Day 1</td>
<td>10 mg/kg (600 mg adult)</td>
</tr>
<tr>
<td>Primaquine</td>
<td>Day 1</td>
<td>0.75 mg/kg (45 mg adult)</td>
</tr>
<tr>
<td>Chloroquine base</td>
<td>Day 2</td>
<td>10 mg/ kg (600 mg adult)</td>
</tr>
<tr>
<td>Chloroquine base</td>
<td>Day 3</td>
<td>5 mg/kg (300 mg adult)</td>
</tr>
</tbody>
</table>
Radical Treatment - Low Risk Areas

For *Plasmodium vivax* (Table - 5)

<table>
<thead>
<tr>
<th>Age in year</th>
<th>Chloroquine Phosphate 150 mg base Single dose</th>
<th>Primaquine 2.5 mg base Daily dose for 5 days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mg base</td>
<td>No. of tablets</td>
</tr>
<tr>
<td>&lt;1</td>
<td>75</td>
<td>1/2</td>
</tr>
<tr>
<td>1 - 4</td>
<td>150</td>
<td>1</td>
</tr>
<tr>
<td>5 - 8</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>9 - 14</td>
<td>450</td>
<td>3</td>
</tr>
<tr>
<td>15 &amp; above</td>
<td>600</td>
<td>4</td>
</tr>
</tbody>
</table>

For *Plasmodium falciparum*: In “Low Risk Areas” where presumptive treatment with 600 mg chloroquine alone (adult dose) has been given and later blood smear is found positive for Pf, the complete radical treatment should be given with a single dose of tablet chloroquine 10 mg/kg bw combined with 0.75 mg/kg bw of primaquine.

Radical Treatment - High Risk Areas

For *Plasmodium vivax*: In high risk areas where presumptive treatment with 1500 mg chloroquine base spread over three days and 45 mg primaquine (adult dose) has been given, chloroquine need not be administered again, but primaquine must be given for 5 days (Table - 6).

<table>
<thead>
<tr>
<th>Age in year</th>
<th>Tablets Primaquine 2.5 mg base Daily dose for 5 days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mg base</td>
</tr>
<tr>
<td>&lt;1</td>
<td>Nil</td>
</tr>
<tr>
<td>1 - 4</td>
<td>2.5</td>
</tr>
<tr>
<td>5 - 8</td>
<td>5.0</td>
</tr>
<tr>
<td>9 - 14</td>
<td>10.0</td>
</tr>
<tr>
<td>15 &amp; above</td>
<td>15.0</td>
</tr>
</tbody>
</table>

For *Plasmodium falciparum*: In “High Risk Areas”, fever cases are given presumptive treatment with 1500 mg chloroquine base spread over three days and 45 mg primaquine (adult single dose). Therefore radical treatment with primaquine is not required if they are found positive for Pf microscopically.

Chloroquine resistant *P falciparum* cases: The radical treatment of Pf cases in chloroquine resistant areas, which are under alternate drug schedule, and in specific cases not responding to chloroquine, is by second line of treatment. Resistance should be suspected if in spite of full treatment and no history of vomiting, diarrhoea, patient does not respond within 72 hours parasitologically or deteriorate clinically. National Anti Malaria Drug Policy has recently recommended Artesunate + sulfadoxine/ sulfaalene combination therapy (SP-ACT) in confirmed chloroquine resistant cases. This must be followed with Primaquine (45 mg). The age-wise dosage is as shown in Table - 7.

<table>
<thead>
<tr>
<th>Age in year</th>
<th>Artesunate (AS) Sulfadoxine + pyrimethamine (SP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I day (no. of tablets)</td>
</tr>
<tr>
<td>&lt;1</td>
<td>AS</td>
</tr>
<tr>
<td>1 - 4</td>
<td>AS</td>
</tr>
<tr>
<td>5 - 8</td>
<td>AS</td>
</tr>
<tr>
<td>9 - 14</td>
<td>AS</td>
</tr>
<tr>
<td>15 &amp; above</td>
<td>AS</td>
</tr>
</tbody>
</table>

- Dose of Artesunate is 4 mg /kg body weight for 3 days. Strength of the tablet is 50 mg.
- Dose of SP is 25 mg /kg body weight of sulfadoxine plus 1.25 mg /kg body weight of pyrimethamine single dose. The strength of SP tablet is 500 mg sulfadoxine and 25 mg of pyrimethamine.

Note: Sulfanene/Sulphadoxine and Pyrimethamine combination does not take care of *P vivax* cases. Where SP - ACT is not available, SP alone should be given.

Chemoprophylaxis: In chloroquine sensitive areas chloroquine is to be given. In chloroquine resistant areas it is to be supplemented by proguanil.

Regimen
- Chemoprophylaxis is to be started a week before arriving at malarious area for visitors.
- For pregnant women in high risk area prophylaxis should be initiated from second trimester.
- Start with loading dose of 10 mg/kg bw and followed by a weekly dose of 5 mg/kg bw. This is to continue till 1 month after delivery in case of pregnancy and in travelers till one month after return from endemic area. The terminating dose should be 10 mg/kg bw along with 0.25 mg/kg bw of primaquine for five days.
- Chemoprophylaxis with chloroquine is not recommended beyond 3 years because of its cumulative toxicity.
- In chloroquine resistant areas chemoprophylaxis is recommended with chloroquine 5 mg/kg bw weekly and proguanil 100mg daily.

Vector control
In our country, control of vectors is actually control of *An. culicifacies* as 60-70% of new cases of malaria are due to it and rest 15-20% by *An. fluviatilis*. Approx 70% of the allotted budget is spent for control of malaria in those areas where *An. culicifacies* is the vector species for malaria transmission.
Except for *An. stephensi* all other malaria vectors exist as species complexes comprising several sibling species that result in considerable impact on the transmission of malaria including susceptibility to commonly used insecticides in public health programme.

**Insecticides**: Wettable Powder (WP) formulations are used for indoor residual sprays and Emulsifiable Concentrate (EC) formulations are used for larval control. For Indoor Residual Spray (IRS) insecticides in use are DDT 50% WP, malathion 25% WP and synthetic Pyrethroid (WP). Synthetic Pyrethroids include deltamethrin 2.5% WP, Cyfluthrin 10% WP, lambdacyhalothrin 10% WP, alphacypermethrin 5% WP, Etofenprox 10% WP and Bifenthrin 10% WP. Synthetic Pyrethroid insecticides are also used for impregnation of bed nets.

**Change of Insecticide**: The change of insecticide is warranted after production of data on vector resistance studies and field observations on epidemiological impact of spray in respect of insecticide in use by State Govt. The change of insecticide will always be decided in mutual consultation between State Programme Officer for NVBDCP ROH&FW and the Dte. of NVBDCP with concurrence of State and Central Govts.

**Insecticide formulations used under NVBDCP**: The formulations/compounds used under the NVBDCP for control of malaria are DDT; Malathion 25% WP (used under the programme in areas with DDT resistance); and, Synthetic Pyrethroids. As regards synthetic pyrethroids, the cost of these insecticides is much higher than the cost of DDT and Malathion. Currently there are five insecticides of this group registered with Central Insecticide Board for use in the programme. These are (i) Deltamethrin 2.5% WP, (ii) Cyfluthrin 10% WP, (iii) Alphacypermethrin 5% WP (iv) Lambdacyhalothrin 10% WP and (v) Bifenthrin 10% WP.

### Insecticide Resistance in Malaria vectors

Malaria vectors in India are resistant to DDT alone or double resistant to HCH or triple resistant to DDT, HCH, malathion and quadruple resistant to DDT, HCH, malathion and Deltamethrin (synthetic pyrethroid). HCH has been phased out in 1997. In the years to come development of resistance to synthetic pyrethroid warrants a caution of impending possibility of wide spread resistance to other compounds of this group that are introduced in public health programme for indoor residual spray as well as insecticide treated bed nets. Strategies for delaying / avoiding the onset of resistance include:

- Avoid indiscriminate use of insecticides
- Avoid use of insecticides that simultaneously select resistance to other chemically related insecticides.
- Avoid use of insecticides that induce development of more than one type of resistance mechanism of broad spectrum of resistance.
- Avoid use of the same insecticide for both against adults and larvae.
- Use of non chemical control methods, e.g. biopesticides, larvivorous fish.
- Use of synergist with insecticides to reduce physiological resistance.

### Malaria Surveillance Under NVBDCP

The aim of surveillance is to detect changes in trends or distribution in malaria and other vector borne diseases in order to initiate investigative or control measures. Malaria surveillance presumes that every malaria case will present itself with symptoms of fever at some point of time during the course of infection. Surveillance activities are summarized in Table - 8.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Component</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fortnightly Domiciliary visits</td>
<td>Active case detection (ACD) is carried out by multipurpose health worker (male) under Primary Health Care System. He carries out search for a fever case or who had fever in between the visits of MPW, collects blood smear from such cases, administers appropriate anti-malarial(s). The rationale is that the “incubation interval” i.e., the full life cycle of malaria for the development of the parasite in the mosquito and that in the human being in case of <em>P vivax</em> is approximately 22 days while for <em>P falciparum</em> it is 35 days. Thus, surveillance cycle of less than one incubation interval will catch most of the secondary cases before the commencement of next cycle. Through this activity, the malaria surveillance can be measured.</td>
</tr>
<tr>
<td>2</td>
<td>Fever Treatment Depots (FTDs)</td>
<td>To avoid delay in detection of cases which occur in between visits of MPW, establishment of Fever Treatment Depots in villages especially in areas which are remote/ inaccessible and have low population density collection of blood smears, administration of presumptive treatment, impregnation of bed nets, promotion of larvivorous fish etc.</td>
</tr>
<tr>
<td>3</td>
<td>Passive Case Detection (PCD)</td>
<td>By Allopathic, Ayurvedic, Homeopathic, Siddha medicine dispensaries in the health sector, local residents or voluntary agencies operating locally, Anganwadi workers, private practitioners etc.</td>
</tr>
<tr>
<td>4</td>
<td>Rapid Fever Survey</td>
<td>In case of an epidemic outbreak, the suspected epidemic zone is covered in a short duration and all fever cases are screened by taking blood smears</td>
</tr>
<tr>
<td>5</td>
<td>Mass survey</td>
<td>Mass survey of the entire population may be carried out in the suspected epidemic zone. Here all the population irrespective of age, sex or fever status is screened by taking blood smear. Specially children must be included in survey.</td>
</tr>
<tr>
<td>6</td>
<td>Drug Distribution Centre (DDC)</td>
<td>The functions of DDCs are the same as those of FTDs, except that the DDCs do not take blood slides but administer drugs to fever cases.</td>
</tr>
</tbody>
</table>
Rationale behind surveillance: Malaria surveillance presumes that every malaria case will present itself with symptoms of fever at some point of time during the course of infection. Therefore, if all fever cases occurring in the community are kept under surveillance over a period of time and their blood smears are examined for malaria parasite, the total malaria parasite load can be examined. For accurate estimates of malaria endemicity, the blood smear examination rate specially the Monthly Blood Examination Rate (MBER) should be equal to fever rate of the month in the community. Therefore it is necessary to ensure that all persons having fever during malaria transmission months are included in the total blood slides examined during the year. The MBER norms of 0.8 percent during non-transmission season and 1.2 to 1.8 percent during transmission season (or approximately 1% per month) were laid down in the Malaria Eradication Programme. MBER should be monitored MPW-wise by the medical officer-in-charge during monthly meeting at the PHC in order to assess the surveillance operation in the PHC area. In both the cases i.e. ABER and MBER the denominator is common because the entire population is covered during each fortnightly domiciliary visit by MPW (male). ABER is the cumulative sum of monthly rates during the year. ABER/ MBER is an index of operational efficacy of the programme. The Annual Parasite Incidence (API) depends upon the ABER. A sufficient number of blood slides should be systematically obtained and examined for malaria parasite to work out accurate API.

As a rough guide, MBER should be 1% and ABER should be at least 10%. If it is less than this figure it indicates a poor surveillance coverage and in this situation, API may not remain a good index of malaria incidence. In such situations, SPR, rather than API should be considered. While collecting ABER or MBER, blood slides collected by all agencies are taken into account, i.e. blood smears collected through ACD, PCD, FTD or any other voluntary agency during the same period. However, number of blood smears collected and examined during a mass survey and their results should not be included while calculating ABER or MBER.

\[
\text{ABER} = \frac{\text{No. of blood smears collected during the year}}{\text{Population covered under surveillance}} \times 100
\]
\[
\text{MBER} = \frac{\text{No. of blood smears collected during the month}}{\text{Population covered under surveillance}} \times 100
\]
\[
\text{API} = \frac{\text{No. of blood smears found +ve during the Year}}{\text{Population covered under surveillance}} \times 1000
\]

The Slide Positivity Rate (SPR) among the blood smears collected through both active and passive surveillance gives more accurate information on distribution of malaria infection in the community over a period of time. Monthly SPR can be calculated to find out the seasonal rise and fall in malaria prevalence in the community. SPR among children 2-9 years of age can be utilized for comparison with pre-control Child Parasite Rates to assess the impact of control measures on local malaria endemicity and transmission. SPR in the age group of less than one year (Infant Parasite Rate) can be utilized for assessment of the impact of control operations. The SPR of blood slides collected from cases currently having fever will be higher than the SPR of the slides collected from cases with history of fever. Therefore, higher positivity rates are obtained in blood smears collected at the PCD. Trends in SPR can be utilized for predicting epidemic situations in the area. If monthly SPR exceeds by 2½ times of the standard deviation observed in SPR of the preceding 3 years or preceding 3 months of the same year, an epidemic build up in the area can be suspected. Monthly or yearly trends of SPR are utilized to study the impact of control operations.

SPR is measured as follows:

\[
\text{SPR} = \frac{\text{No. of blood smears found +ve for MP}}{\text{No. of blood smears examined}} \times 100
\]

Accelerated Urban Malaria Control Project

To address the malaria problem in urban areas, an Urban Malaria Scheme (UMS) was launched in 1971 with the objective to control malaria by reducing the vector population by way of recurrent anti-larval measures and detection and treatment of cases through the existing health services of the State/Urban Local Bodies. In this context, an “Accelerated Urban Malaria Control Project” is proposed in high endemic 28 towns/cities with GFATM support. The proposed project will be implemented by the Urban Local Self Govt, viz., Municipalities in collaboration with the local NGOs. The project goal is to reduce malaria morbidity and mortality in the project population (in 28 towns in 12 states) by 50% by 2015.

Project Objectives: Increasing the access to diagnosis and treatment in project areas, with particular focus on slums, construction sites/industrial estates/market areas with floating population. Majority of the population at risk at focused sites are poor and marginalized families, living below poverty line.

1. Malaria Transmission Risk Reduction through Integrated Vector Management mode (IVM).
2. Enhancing awareness towards behavioural impact about malaria prevention and control and promoting community, NGO and private sector participation.

Kala-azar

Kala-azar, a disease transmitted by sand fly vector is a cause of high morbidity and mortality in the 4 states of Bihar, Jharkhand, Uttar Pradesh and West Bengal, with 165.4 million population living in these endemic areas (7). A total of 48 districts are endemic, with sporadic cases being reported from few other districts. The burden of disease since 2004 is given in Table - 9.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Year</th>
<th>Cases</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2004</td>
<td>24340</td>
<td>156</td>
</tr>
<tr>
<td>2</td>
<td>2005</td>
<td>31217</td>
<td>157</td>
</tr>
<tr>
<td>3</td>
<td>2006</td>
<td>39178</td>
<td>187</td>
</tr>
<tr>
<td>4</td>
<td>2007(Provisional)</td>
<td>22751</td>
<td>101</td>
</tr>
</tbody>
</table>

Table - 9
Kala-azar Elimination Initiative: The National Health Policy (2002) has set the goal for elimination of Kala-azar by year 2010. Elimination Programme is 100 per cent Centrally Supported (except regular staff of State governments & infrastructure). In addition to kala-azar medicines and insecticides, cash assistance is being provided to endemic states since December 2003 to facilitate effective strategy implementation by states.

Strategy

- Interruption of transmission through vector control by undertaking residual indoor insecticide spraying in affected areas, with DDT up to 6 feet height from the ground twice annually.
- Early diagnosis and complete treatment (Table - 10).
- IEC and community mobilization.

<table>
<thead>
<tr>
<th>Table - 10 : Treatment guidelines for Kala-azar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Drug</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Injection SSG</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Injection Amphotericin-B</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Tablet Miltefosine</td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

Filariasis

Filariasis has been a major public health problem in India next only to malaria. India accounts for about 40% of the 120 million estimated cases globally with either disease or infection (Microfilaria cases). Cases of filariasis have been recorded from Andhra Pradesh, Assam, Bihar, Chattisgarh, Goa, Jharkhand, Karnataka, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal, Pondicherry, Andaman & Nicobar Islands, Daman & Diu, Dadra & Nagar Haveli and Lakshadweep. It is a disabling & disfiguring disease and causes immense personalized trauma of the affected persons, even though it is not fatal. In 1955, the national filarial control programme was launched. The main control measures were mass DEC administration, antilarval measures in urban areas and indoor residual spray in rural areas.

The subsequent landmarks in filarial control are given in Table - 11.

Strategy for Elimination of Lymphatic Filariasis: The strategy for achieving the goal of elimination is by annual mass drug administration of DEC for 5 years or more to the population excluding children below two years, pregnant women and seriously ill persons in affected areas to interrupt transmission of disease.(8). Under the programme, Mass Drug Administration (MDA) campaign is organized and an annual single dose of Diethylcarbamazine citrate (DEC) tablets is administered to the eligible population in the affected areas on a single day designated as National Filaria Day. The drug distribution is made by door-to-door campaign. In addition, booths are established at health facilities, both in public and private sectors. Co-administration of DEC and Albendazole free of cost to be implemented in all the endemic districts by 2008 in a phased manner (Albendazole kills intestinal helminthic infections also).

The transmission of infection can be stopped by treating the entire eligible population living in filarial endemic areas with Mass Drug Administration (MDA) with DEC given once a year for 5-7 years i.e. during the life span of adult filarial worm which gives birth to millions of microfilariae. With every treatment there will be a heavy reduction in the circulating microfilariae. This will markedly reduce or stop the transmission of the infection by the mosquitoes to other healthy persons.

DEC is available as 50 mg or 100mg tablets. The drug has been in use in India for more than five decades. It is a safe drug at the recommended dose. The dose of DEC is 6 mg/kg body weight. The dose schedule which was being followed is shown in Table - 12.

However, a simplified dose schedule was administered in Tamil Nadu for the mass drug administration campaigns. This was monitored by the state government and the Vector

<table>
<thead>
<tr>
<th>Table - 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. No</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table - 12 : Conventional Drug Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in year)</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>&lt;2</td>
</tr>
<tr>
<td>2-3</td>
</tr>
<tr>
<td>4-5</td>
</tr>
<tr>
<td>6 - 11</td>
</tr>
<tr>
<td>12 - 17</td>
</tr>
<tr>
<td>&gt;18</td>
</tr>
</tbody>
</table>

Table - 10 : Treatment guidelines for Kala-azar

Table - 11

Table - 12
Control Research Centre (VCRC), ICMR and found to be safe and effective. The results were discussed by the National Task Force on Lymphatic Filariasis and the following simplified schedule has been recommended for MDA in the country (Table - 13).

<table>
<thead>
<tr>
<th>Age (in year)</th>
<th>DEC Dose</th>
<th>DEC (Tablet of 100 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;2</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>2-5</td>
<td>100mg</td>
<td>1 tablet</td>
</tr>
<tr>
<td>6-14</td>
<td>200mg</td>
<td>2 tablets</td>
</tr>
<tr>
<td>15 &amp; above</td>
<td>300mg</td>
<td>3 tablets</td>
</tr>
</tbody>
</table>

Side effects of DEC: DEC at the above doses is safe. Person with high mf density may experience general side effects in the form of headache, body ache, nausea and vomiting which result from the death of the Microfilariae. The side effects are temporary and subside in a day or two after symptomatic treatment. Rarely, localized reactions in the form swelling and tenderness of lymph nodes may occur. Temporary side effects that may occur in 1 to 10% of the population who may be carriers of microfilariae.

Contraindications of DEC: DEC is safe. However, as a matter of precaution, it should not be given to children under two years and to pregnant women. Severely ill patients may also avoid taking the drug.

The disease has been targeted for global elimination by 2020. Transmission control and disability alleviation are two pillars of the Global Elimination Strategy for Lymphatic Filariasis (GELF). Interruption of transmission can be achieved by mass annual drug administration of Diethylcarbamazine Citrate (DEC) to entire communities at risk of infection when community drug consumption rates are adequate. This is expected to result in reduction of transmission of lymphatic filariasis to low levels and ultimately in the elimination of filariasis, preventing new infections from occurring and protecting future generations from the disease.

Dengue

Dengue Fever (DF) is an acute viral infection with the potential of causing large outbreaks. Death can occur in dengue haemorrhagic fever (DHF), which is a severe form of the disease. The National Health Policy (2002) has set the goal of reduction of mortality on account of Dengue by 50% by year 2010.

Magnitude of the Problem

This is shown in the Fig. - 2. Until June 2007 there were 256 cases and 2 deaths (9).

Strategy for Control

a. Disease and vector surveillance
b. Vector management through source reduction with community participation
c. Case management
d. IEC initiatives
e. Epidemic preparedness and early response.

Guidelines for Integrated Vector Management for Control of Dengue / Dengue Haemorrhagic Fever under NVBDCP (10)

The key to control DF/DHF is adoption of a comprehensive approach by way of regular vector surveillance and integrated management of the Aedes mosquitoes through biological and chemical control that are safe, cost effective; and environmental management, legislations as well as action at household and community levels.

Vector Surveillance

Both larval and adult surveys to be carried out.

<table>
<thead>
<tr>
<th>Larval surveys</th>
<th>Adult Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) House Index (HI)</td>
<td>i) Landing/biting collection</td>
</tr>
<tr>
<td>ii) Container Index (CI)</td>
<td>ii) Resting collection</td>
</tr>
<tr>
<td>iii) Breteau Index (BI)</td>
<td>iii) Oviposition traps</td>
</tr>
<tr>
<td>iv) Pupae Index (PI)</td>
<td></td>
</tr>
</tbody>
</table>

Environmental Management: The major environmental management methods used for control of immature stages of dengue vector are:

(i) Environmental modification: Long lasting physical transformation of vector habitats. For example, improved water supply, mosquito proofing of overhead tanks, cisterns or underground reservoirs.

(ii) Environmental manipulation: Temporary changes to vector habitats that involve the management of essential and non-essential containers and management of or removal of natural breeding sites.

(iii) Changes in human habitations: Efforts are made to reduce man-virus contact by mosquito proofing of houses with screens on doors/windows.

Personal Protection: Insecticide treated mosquito nets have limited utility in dengue control, since the vector species bite during the day time. However, insecticide treated bed nets can be effectively used to protect infants and night workers while sleeping in daytime.

Biological Control

(i) Larvivorous fish are recommended for control of Ae. aegypti in large water bodies or large water containers.
(ii) Endotoxin-producing bacteria, *Bacillus thuringiensis* serotype H-14 (Bt H-14) has been found to be an effective mosquito control agent.

**Chemical Control**: Chemical control measures (larvicides, adulticides) are recommended in permanent big water containers where water has to be conserved or stored because of scarcity of water or irregular and unreliable water supply.

**Larvicide**: Since *Aedes aegypti* breeds in clean water, which is stored and used for household purposes, as such all the larvicides, which are safe, without any odour or colour, have residual effect with low mammalian toxicity and do not pose any health hazard should be used. Temephos, an organophosphate compound meets all the above mentioned requirements and this insecticide is being used under the public health programme. The recommended dose for application of Temephos (50 EC) is 1 ppm (1 mg per liter of water).

**Adulticide**: The following methods are recommended for the control of adult *Aedes aegypti* mosquitoes:

a) Pyrethrum spray
b) Malathion fogging or Ultra Low Volume (ULV) spray

**Legislative Measures**

**Model civic byelaws**: Under this act, fine/punishment is imparted, if breeding is detected. These measures are being strictly enforced by Mumbai, Navi Mumbai, Chandigarh and Delhi Municipal Corporations.

**Building Construction Regulation Act**: Building byelaws should be made for appropriate overhead / under ground tanks, mosquito proof buildings, designs of sunshades, porticos, etc for not allowing stagnation of water vis-à-vis breeding of mosquitoes. In Mumbai, prior to any construction activity, the owners/builders deposit a fee for controlling mosquitogenic conditions at site by the Municipal Corporation.

**Environmental Health Act**: Suitable byelaws should be made for the proper disposal/storage of junk, discarded tins, old tyres and other debris, which can withhold rain water.

**Behavior Change Communication (BCC) campaign**: The community needs to be educated to prevent breeding of mosquitoes.

**Chikungunya**

Chikungunya is a relatively rare form of viral fever caused by an alpha virus that is spread by bite of *Aedes aegypti* mosquito. The name is derived from the Swahili word meaning ‘that which bends up’ in reference to the stopped posture developed as a result of the arthritic symptoms of the disease.

The preventive and control strategies are same as for dengue fever. Surveillance of fever cases with joint pains should be emphasized.

**Japanese Encephalitis**

Directorate of National Vector Borne Disease Control Programme (NVBDCP) is a nodal agency for control and prevention of Japanese Encephalitis (JE) in the country (12). Reduction of mortality on account of Japanese Encephalitis by 50% by year 2010 has been envisaged under the National Health Policy (2002).

**Strategy**

**Early case detection and treatment**: Early diagnosis & proper management of JE cases is of prime importance to reduce case fatality through strengthening of diagnostic and clinical management of JE cases, at PHCs/CHCs and District Hospitals. JE burden can be estimated satisfactorily if the facilities for JE confirmation are made available at least in referral hospitals. Considering the merits and demerits of each diagnostic test and the patients representing different clinical phases of infection, establishment of two diagnostic tests, one for detection of JE Reverse Transcriptase - Polymer Chain Reaction (RTPCR) and one for detection of virus antigen/virus genome is necessary.

**Vector Control**

**Chemical control**: Vector control is a serious challenge for JE control because of exophilic and exophagic behaviour of JE vectors, which limits effectiveness of conventional insecticides. IRS is not recommended for prevention and control for JE. However, in areas where vector is endophilic like *Mansonella annulifera*, IRS may be considered for vector control in high risk pockets. Fogging is a very cost intensive vector control tool but with limited effect and therefore, not recommended as a routine vector control measure. In case of JE outbreaks, since the vectors are mainly outdoor resting and outdoor feeding, peri-domestic fogging could be resorted to very carefully for containment of outbreaks. It has been suggested that most of the states may resort to fogging whenever there is any JE outbreak so that they can make their efforts visible in the community besides its impact on adult population of vector mosquitoes. Personnel protection methods and anti larval operations should also be taken.

**Reduction of breeding sources for larvae**: Two feasible methodologies have been demonstrated to control breeding of mosquitoes in rice fields. They are (i) water management system with intermittent irrigation system and (ii) incorporation of neem products in rice field. The water management is nothing but a strategy of alternate drying and wetting water management system in the rice fields. By using neem products as fertiliser in rice fields, they not only enhance the grain production but also suppress the breeding of culicine vector of JE.

**Larvivorous fish**: Introduction of composite fish culture for mosquito control in rice fields has been evaluated and proved to be successful. In other large and small water bodies release of larvivorous fish will prevent the JE vectors breeding.

**Biolarvicides**: Biocides like *Bacillus thuringiensis var. israelensis* and *Bacillus sphaericus* were promoted and anticipated to have great implications as biological larvicides against different mosquito species. Lack of suitable delivery system and short duration of larvicide effect restricted its use in vector control strategy.

**Reduction in man-vector contact**: Pyrethroid-impregnated bed nets and curtains have shown to reduce man-mosquito contact. However people may not prefer to use bed nets due to high temperature and humidity. In such areas, people do accept impregnated curtains instead of bednets. The limitation with this technology is the repeated impregnation of the curtains once in 6 to 9 months and periodic assessment of vectors for development of insecticide resistance to this product.
Control of Pigs: Pigs constitute the amplifying host of JE and mosquitoes when bite pigs get infected that later infect humans. In JE endemic areas, pigs are found associated with human habitations. Control methods can include immunizing, slaughtering pigs, use of mosquito proof piggeries, etc. Segregating pigs at least 4-5 km away from human habitations can be used wherever it is possible by implementing some by-laws by local administration. Several studies conducted in Japan showed that pig immunization was effective in eliminating disease in pigs, which may reduce animal transmission and possibly lower human incidence. But it has not been used at the national level because pig immunization requires large number of newborn pigs to be immunized each year and because the period of vaccine effectiveness is limited.

Behaviour Change Communication (BCC) or (Information Education Communication): Health Education should be imparted through all probable approaches on personal prophylaxis against vector, segregation of amplifier hosts by mosquito proofing and for early reporting of cases. Each endemic state should conduct a media advocacy and health education workshop a month prior to the expected season to educate media about the upcoming JE season and enlist their support in dissemination of messages on self protection methods and early case reporting at nearest medical facilities, etc., thereby avoiding any uninformed, adverse publicity.

Immunization against JE: There are three types of JE vaccine in widespread production and in worldwide use for control of JE. These are (i) inactivated mouse brain derived vaccine; (ii) inactivated primary hamster kidney cell-derived vaccine, and (iii) live attenuated vaccine. Under immunization protocol, immunization of pigs is to be considered which may reduce viral transmission by limiting or preventing viraemia in pigs. JE vaccines for pigs and equines have been used in various areas of China.

JE vaccine used in India is a formalin-inactivated product prepared from mouse brains infected with Nakayama JE virus manufactured at Central Research Institute, Kasauli, and Himachal Pradesh. The virus is purified with protamine sulphate treatment and ultra centrifugation. The final vaccine is supplied in a freeze dried form and reconstituted in 5.4 ml of sterile pyrogen free distilled water supplied by the laboratory. Pilot projects for JE vaccination have already started in few states in the country.

Critical Appraisal of NVBDCP

Technical manpower: There is shortage of MFWs in all the states. In some states the shortage may be as high as 60% or more of the sanctioned strength. For the timely and regular surveillance these field level functionaries are crucial.

Examination of blood smears: The blood smears collected by ACD & PCD are to be examined expeditiously. Under the current situation, in most of the places, there is considerable time lag between collection and examination of blood smears due to inadequate facilities. The laboratory for malaria microscopy should be decentralized and brought as near to the community as possible. All efforts should be made to reduce the time lag between blood smear collection and examination by utilizing existing facilities available both in public & private sectors.

Urban Malaria: It is perceived as a major threat; no structured health care delivery system like the primary health care system in rural areas has been established. Funds are also allocated for larvicides / adulticides only and the operational costs of malaria control activities are met by the State/Urban Local Bodies. The coverage by anti larval measures however, limited and do not extend to the entire towns/city limits. The source reduction drives in domestic areas are hampered by denial of entry to public health personnel on security reasons, limited community mobilization and multi-sectoral collaboration and absence of appropriate civic legislations.

Monitoring & Evaluation: Enactment and enforcement of legislatures to prevent mosquito breeding in domestic and peri-domestic areas or work places, government/commercial buildings, construction sites, etc. are the responsibility of multiple authorities and often not implemented in a coordinated manner. No proper resource allocation is also made for most of these components, even though these are extremely critical to achieve the desired health objectives of health and well-being in urban areas.

Use of insecticides for vector control: Using insecticides in improper dosage and schedule promotes vector resistance. There is shortage of insecticides due to which incorrect chemical is used as an alternative or the same is diluted to meet the requirement.

Community participation: It is inadequate.

Non Uniformity in treatment: No uniformity in medical practitioners regarding treatment of vector borne diseases.

Summary

NVBDCP is an umbrella programme for prevention and control of major vector borne diseases of public health importance namely Malaria, Filaria, Japanese encephalitis (JE), Kala azar and Dengue / Dengue Hemorrhagic Fever (DHF). It came into existence in 2003.

The Mission is to have Integrated accelerated action towards reducing mortality on account of malaria, dengue, Japanese Encephalitis by half and elimination of Kala-azar by year 2010 and elimination of Lymphatic Filariasis by 2015. The strategy lays emphasis on Training of health personnel in the diagnosis of vector-borne diseases and appropriate treatment including referral, Improved reporting, recording and monitoring of vector-borne diseases, Monitoring drug and insecticide resistance, Use of standardised protocol for the diagnosis and management of these diseases, Involvement of PRIs and research studies in vector borne diseases. The implementation at the national level is by Directorate of National Vector Borne Diseases Control Programme, at the state level by Regional Offices for Health and Family Welfare (ROH & FW) located at state HQ, district level by District Malaria Offices and Primary Health Centres at the village level. National Rural Health Mission will focus on all the diseases covered under NVBDCP.

The strategies for malaria control under the programme has been Early case Detection and Prompt Treatment (EDPT), Vector control (Chemical, Biological Control methods), Personal Prophylactic
Measures, Community Participation and Environmental Management & Source Reduction Methods. National antimalaria drug policy essentially provides a framework for the safe and effective treatment of uncomplicated and severe malaria as well as prevention of malaria in vulnerable groups, such as pregnant women and young children. All fever cases should preferably be investigated for malaria by microscopy or Rapid Diagnostic Kit (RDK). RDK is a immunochromatographic test. It detects *Plasmodium falciparum* histidine rich protein in blood. The first line of treatment is Chloroquine and the second line for *P falciparum* is Artesunate combination therapy (ACT) consisting of Artesunate + Sulphadoxine/Sulphalene + Pyrimethamine. In case of resistance to these formulations quinine would be the drug of choice. ACT is not to be used against treatment of *P vivax* cases as it is not effective against it. Chemoprophylaxis for malaria: In chloroquine sensitive areas chloroquine is to be given and in Chloroquine resistant areas it is to be supplemented by proguanil.

Insecticides under NVBDCP for malaria control are DDT, Organophosphorous compounds (Malathion), Synthetic Pyrethroids (i) Deltamethrin2.5% WP, (ii) Cyfluthrin 10% WP, (iii) Alphacypermethrin 5% WP (iv) Lambdacyhalothrin 10% WP and (v) Bifenthrin 10 WP) Wettable powder (WP) formulations are used for indoor residual sprays and emulsion concentrate (EC) formulations are used for larval control. Malaria vectors in India are resistant to DDT alone or double resistant to HCH or triple resistant to DDT, HCH, malathion and quadruple resistant to DDT, HCH, malathion and Deltamethrin (synthetic pyrethroid), however HCH has been phased out in 1997.

Malaria surveillance under NVBDCP is done through fortnightly Domiciliary visits by MPW (male), Fever Treatment Depots (FTDs), Passive Case Detection (PCD), Rapid Fever Survey, Mass survey and Drug Distribution Centre (DDC). The National Health Policy (2002) has set the goal for elimination of Kala-azar by year 2010. Strategy under NVBDCP includes Interruption of transmission through vector control by undertaking residual indoor insecticide spraying in affected areas, with DDT up to 6 feet height from the ground twice annually, Early diagnosis & complete treatment and IEC & community mobilization.

The National Health Policy (2002) has set the goal for elimination of Lymphatic Filariasis (ELF) by the year 2015. The strategy for achieving the goal of elimination is by Annual Mass Drug Administration of DEC for 5 years or more to the population excluding children below two years, pregnant women and seriously ill persons in affected areas to interrupt transmission of disease. The National Health Policy (2002) has set the goal of reduction of mortality on account of Dengue by 50% by year 2010. Strategy for dengue control comprise of Disease and Vector Surveillance, Vector management through source reduction with community participation, Case management, IEC initiatives and epidemic preparedness and early response.

Reduction of mortality on account of Japanese Encephalitis by 50% by year 2010 has been envisaged under the National Health Policy (2002). The strategy includes Early case detection and treatment, Vector Control (Reduction of breeding sources for larvae, use of Larvivorous fish, Biolarvicides), Reduction in man-vector contact and control of Pigs. JE vaccine used in India is a formalin-inactivated product prepared from mouse brains infected with Nakayama JE virus manufactured at Central Research Institute, Kasauli, and Himachal Pradesh.

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Further Suggested Reading
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2. Epidemiology and control of malaria in India 1996. R.S. Sharma, G.K. Sharma and G.F.S. Dhillon
4. Malaria vector control and personal protection who technical report series - 936
“Leprosy work is not merely medical relief, it is transforming frustration in life into the joy of dedication, personal ambition into selfless service.” Mahatma Gandhi

The NLEP Emblem symbolizes beauty and purity in lotus. The Emblem captures the spirit of hope positive action in the eradication of Leprosy.

**Evolution of Leprosy control in India**

The National Leprosy Control Programme (NLCP) was launched in 1954 (3). The strategy of NLEP was based on controlling the disease through reduction in the quantum of infection in the population, and reduction in infective source, thus breaking the chain of disease transmission. The program, therefore, had been planned on the following basic activities:

1. Survey and case detection.
2. Registration of cases for treatment.
3. Provision of continuous treatment with Dapsone to all cases, as close to their homes as possible.
4. Education of patients, their families and community at large about leprosy.
5. Correction of deformities through deformity care programme.

Treatment with MDT was introduced under NLEP in phased manner in the year 1983 and programme was renamed as National Leprosy Eradication Programme. At the 44th World Health Assembly held in 1991, WHO and its Member States committed themselves to eliminate leprosy as a public health problem by the year 2000, elimination being defined as prevalence below one case per 10,000 population. The Government of India was also a signatory to this commitment. To enhance the process of elimination, the first World Bank supported project on NLEP was started in the year 1993-94 and MDT made available to all the registered cases. The Second World Bank supported National Leprosy Elimination Project was started for a period of 3 years and was implemented with the following objectives.

**Objectives of NLEP II (2001 onwards)**

1. **To decentralize the NLEP responsibilities to the states/UT:** State level societies will be formed in 24 states and funding to the districts will be done by state societies. State societies will not be needed in the 8 smaller states/Union Territories since the district societies there are adequate for channeling funds.

2. **Integration of Leprosy Control Activities with the general health services:** To accomplish integration of leprosy services with general health care system in 27 low endemic states and proceed with integration as rapidly as possible in the 27 low endemic states. In the 27 low endemic states/UTs integration will be affected in all districts during the first project year.

**Table 1: Evolution of leprosy control in India**

<table>
<thead>
<tr>
<th>Year</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre independence</td>
<td>Initially Leprosy patients were isolated and segregated. Several statutory acts and laws were also enacted during this time against them. In India ‘The Lepers Act 1898’ was enacted, which discriminated against the Leprosy patients and segregated them socially. This act has since been repealed by Union Government &amp; all the States &amp; UTs.</td>
</tr>
<tr>
<td>1955</td>
<td>Government of India launched National Leprosy Control Programme with the objective of controlling leprosy with Dapsone.</td>
</tr>
<tr>
<td>1983</td>
<td>Launched National Leprosy Eradication Programme (NLEP) and introduced MDT for treatment</td>
</tr>
<tr>
<td>1991</td>
<td>WHO declaration to eliminate leprosy at global level by 2000</td>
</tr>
<tr>
<td>1993 - 2000</td>
<td>World Bank supported NLEP - I</td>
</tr>
<tr>
<td>1998 to 2003</td>
<td>After integration of leprosy services with GHC system in 2002-03, leprosy diagnosis and treatment services are available free of cost at all the Primary Health Centres (PHCs) in all the districts in India.</td>
</tr>
<tr>
<td>2002</td>
<td>National Health Policy had set the goal of elimination of leprosy (i.e., to reduce the number of cases to &lt; 1/10,000 population) by the year 2005</td>
</tr>
<tr>
<td>2001 - 2004</td>
<td>World Bank supported NLEP - II</td>
</tr>
<tr>
<td>2005</td>
<td>National programme continues with GOI funds</td>
</tr>
<tr>
<td>2005</td>
<td>India achieved elimination of leprosy at National Level in December’ 05, when the recorded Prevalence Rate (PR) in the country was 0.95/10,000 (&lt;1/10,000) population,(1,2). By March 2007, the prevalence rate of leprosy in the country had declined to 0.72 per 10,000 population and 28 states/UTs have achieved the goal of leprosy elimination. The remaining 7 States/UTs viz. Bihar, Chhattisgarh, Jharkhand, West Bengal, Chandigarh, D&amp;N Haveli and Delhi are having PR of &gt;1 per 10,000 population and are progressing towards elimination. Out of 611 districts, 487 (79.71%) districts have achieved the elimination status</td>
</tr>
</tbody>
</table>
itself. In the 8 high endemic states a mixed approach has been followed from the first year onward with the general health service staff offering leprosy services that included case finding and treatment. The vertical staff is focusing on covering previously un-reached areas as well as providing support to general health service.

3. To achieve elimination at national level

**Strategies**

1. Special Action Project for Elimination of Leprosy (SAPEL) for rural and Leprosy Elimination campaigns for urban areas: It is an initiative aimed at providing MDT services in difficult to reach areas.

2. Modified Leprosy Elimination Campaign (MLEC): It is organizing camps which include a package of teaching, training, intensified IEC, case detection and prompt MDT. Wide publicity is given prior to camp. Five such nation wide campaigns have been carried out.

**Activities**

1. Early detection through active surveillance by the trained health workers
2. Regular treatment of cases by providing Multi-Drug Therapy (MDT) at fixed in or centers a nearby village of moderate to low endemic areas/district
3. Intensified health education and public awareness campaigns to remove social stigma attached to the disease.
4. Prevention of Disability & Medical Rehabilitation
5. Leprosy Training of General Health Services functionaries
7. Monitoring & Evaluation
8. Inter-sectoral collaboration

**Infrastructure**

NLEP was implemented through the establishment of Leprosy control units (LCU), Survey Education and Treatment centers (SET) and urban leprosy centers. The leprosy control units were established in endemic areas with one medical officer, two non medical supervisors and twenty para medical workers. Each LCU covered a population of 4.5 lacs. The staff at SET center comprised of one paramedical worker for 20-25 thousand population and one non medical supervisor for 5 paramedical workers. The SET centers were attached to the PHCs and were under the medical officer in charge of PHC. Mobile leprosy treatment units provide services to leprosy patients in non endemic areas. Each mobile unit consisted of one medical officer, one non medical supervisor, two paramedical workers and a driver. There were two MLTU for moderately endemic and one for low endemic states.

At state level state leprosy officer was the chief coordinator and technical advisor to the concerned state govt. At the center, leprosy division of directorate general health services was responsible for planning, supervision and monitoring of the program. The division is under the control of Deputy Director General who advised govt on all anti leprosy activities. Presently NLEP has been integrated into the general health services system under NRHM. The program will run under the same guidelines of GOI but will conform to Indian Public Health Standards as laid own under the mission. The minimum services available at the community health center should be diagnosis of leprosy, treatment of cases, management of reactions and advice to patients on disability prevention & care.

**MDT:** The details are given in Table - 2, 3 and 4

### Table - 2 : MDT Regimen

<table>
<thead>
<tr>
<th>Type of leprosy/ Duration of treatment</th>
<th>Type of regimen</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB (Pauci - bacillary) Six pulses in 6-9 consecutive months</td>
<td>PB (Adult) / PB (child) Less severe type</td>
<td>1-5 patches &amp;/ or involvement of one nerve</td>
</tr>
<tr>
<td>MB (Multi bacillary) Twelve pulses in 12-18 consecutive months</td>
<td>MB (Adult) / MB (child)</td>
<td>More severe type 6 or more skin patches &amp; or involvement of two or more nerves</td>
</tr>
</tbody>
</table>

**Surveillance after treatment**

- PB cases are clinically examined once a year for minimum two years after completion of treatment.
- MB cases are clinically examined once a year for a minimum period of five years after completion of treatment.

### Table - 3 : Dosage in Adults

<table>
<thead>
<tr>
<th>Type</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multibacillary (Adult)</td>
<td>Rifampicin 600mg monthly given under supervision</td>
</tr>
<tr>
<td></td>
<td>Dapsone 100mg daily self administered</td>
</tr>
<tr>
<td></td>
<td>Clofazimine 300mg once monthly supervised; 50mg daily, self administered (When clofazimine is totally unacceptable owing to discoloration of skin, 250-375mg of ethionamide or propionamide can be administered as daily dose).</td>
</tr>
<tr>
<td>Paucibacillary (Adult)</td>
<td>Rifampicin 600 mg monthly given under supervision</td>
</tr>
<tr>
<td></td>
<td>Dapsone 100mg daily self administered</td>
</tr>
</tbody>
</table>

### Table - 4 : Dosage for children 10-14 years

<table>
<thead>
<tr>
<th>Type</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multibacillary (Child)</td>
<td>Rifampicin 450mg monthly given under supervision; Dapsone 50mg daily self administered; Clofazimine 150mg once monthly supervise and 50mg on alternate day, self administered</td>
</tr>
<tr>
<td>Paucibacillary (Child)</td>
<td>Rifampicin 450mg monthly given under supervision; Dapsone 50mg daily self administered</td>
</tr>
</tbody>
</table>

**Information, Education and Communication (IEC)**

**Objectives of IEC in moderately/low endemic states:** This would be to encourage greater voluntary self-reporting, as the strategy for case detection in these states.
Objectives of IEC in high endemic states: In five high endemic states, where active search is conducted during MLEC, the objective of IEC is to create general awareness of MLEC and signs and symptoms of leprosy to provide support for and prepare the ground for MLEC. The targets are clients, influencers, and providers, particularly from general health services and private providers. Special client focus groups of IEC in the next phase are women, children, difficult to reach groups-urban remote areas, etc.

Training
All staff of the general health services in general health services in government hospitals, PHCs, CHCs, are expected to be trained to detect, treat, refer and to prevent and rehabilitate disability.

Monitoring and Evaluation of NLEP
NLEP has an inbuilt information system for monitoring and supervision of the programme activities at Central, State, District & Peripheral level.

Simplified Information System (SIS): SIS was introduced in 2002 under which simplification of information system was done, so that the newly involved GHC service personnel can easily adapt to the system of record keeping, validation of records, reporting and monitoring of the programme at PHC/ Hospital, District and State level. This system has drastically improved recording, reporting and its transmission. The programme is monitored routinely at District, State and Central level through scrutiny of regular monthly reports. The system has been computerized for compilation of district reports at state level.

Leprosy Elimination Monitoring (LEM): LEM exercise was undertaken with WHO support through the NIH&FW, New Delhi, to assess the programme achievement in identified indicators during the year 2002, 2003 and 2004(5). Immediate actions were initiated on the deficiencies observed.

Involvement of NGOs
NGOs are involved in leprosy elimination activities for many years and their contribution has been a positive impact in reducing the prevalence of leprosy. There are 285 NGOs working in the field of leprosy throughout the country and 54 NGOs are getting grant-in-aid from government of India for Survey, Education and Treatment (SET) scheme. Beside routine activities, some are also providing facilities for hospitalization and disability and ulcer care. Few NGOs are involved in conducting reconstruction surgeries. The NGOs serve in remote, inaccessible, uncovered, urban slums, industrial / labour population and other marginalized population groups. The various activities undertaken by the NGOs are, IEC, Prevention of Impairments and Deformities, Case Detection and MDT Delivery.

ILEP Agencies: International Federation of Anti-leprosy Association (ILEP) is actively involved as partner in NLEP. In India ILEP is constituted by 10 Agencies viz. The Leprosy Mission, Damien Foundation of India Trust, Netherland Leprosy Relief, German Leprosy Relief Association, Lepra India, ALES, AIFO, Fontilles - India, AERF - India and American Leprosy Mission. Activities carried out by ILEP are - capacity building of GHC staff, provision of technical support at various level and providing re-constructive surgery services and support to various NGOs in the country carrying out leprosy related activities.

Leprosy Institutions: Four premier Leprosy Institutes are working under Directorate General of Health Services, Ministry of Health & FW, Government of India viz. CLTRI, Chengalpattu, RLTRI, at Aska, Raipur and Gouripur are involved in research (basic and applied ) in leprosy and Training of different categories of staff involved for Leprosy elimination. These Institutes also play important role in management of referral patients, providing quality care to chronic ulcer and disabled patients with the help of Minor & Major Reconstructive Surgeries.

Urban Leprosy Control Programme
To address the complex problem like larger population size, migration, poor health infrastructure and increasing prevalence in urban areas, there was a need for Urban Leprosy Programme. Urban Leprosy Control Programme has been implemented since 2005 under which assistance is being provided by Govt. of India to urban areas having population size of more than 1 lakh. For the purpose of providing graded assistance, the urban areas are grouped in four categories i.e. Township-I, Medium Cities-I, Medium Cities-II, Mega Cities.

Post Elimination Period - NLEP
In the Post elimination period, NLEP needs to expand the scope of leprosy services provided to the patients, their families and community at large. The aims and objective under the 11th Plan (2007-2012) are as below. These objectives are also in conformity with the global strategy issued by WHO (2006-2010).

1. Further reducing the leprosy burden in the country.
2. Provide good quality leprosy services.
3. Enhance Disability Prevention and Medical Rehabilitation.
4. Increase advocacy towards reduction of stigma and stop discrimination and Strengthen monitoring and supervision.

New Paradigm: In view of the need to sustain leprosy services for many years to come, there has to be a shift from a campaign like elimination approach, towards the long term process of sustaining integrated high quality leprosy services, which in addition to case detection and treatment with Multi Drug Therapy, also include prevention of disability and rehabilitation. To get the programme move in the desired direction, the New Paradigms in NLEP have been detailed as below:

Burden of leprosy: The burden of leprosy can be looked at in three ways:

- Firstly, the most relevant epidemiological measure of the burden of leprosy is the incidence of disease, which is the number of people developing leprosy during a defined period usually one year. Because leprosy is an insidious disease, number of cases detected/ registered for treatment is generally lower than the actual number of incident cases for that time. Hence, incidence is difficult to measure directly and New Case Detection Rate (NCDR) is used as a proxy for incidence rate.
- Secondly, the burden may be related to the registered prevalence of disease, which is the number of people on
treatment at a certain point of time. Although registered prevalence was a useful indicator to achieve the leprosy elimination milestone, it is not adequate indicator to reflect changes in the epidemiological trend of leprosy.

- Thirdly, the burden of leprosy can be viewed as disability and deformity produced by leprosy.

**Improving the quality of services:** The quality of care depends on the quality of technical supervision provided by the program and availability of strong back up from an effective referral system. Quality leprosy services means treatment by MDT is available at all the health units without any geographical, economic or gender barriers. Services provided are patient-centred; observe patient’s rights, including the rights to timely and appropriate treatment, privacy and confidentiality. The quality leprosy services addressing each aspect of case management, based on firm scientific evidence like diagnosis is carried out timely and accurate with supportive counselling, timely treatment with MDT, free of charge in a user friendly environment; appropriate disability prevention interventions; referral for complications and appropriate rehabilitation and maintaining simple records and encourage review and evaluation.

**Prevention and management of impairments and disabilities:** The current situation with regard to the number of persons living with leprosy - related disabilities and impairments may need reassessment, particularly at national level. In addition, programme should ensure that persons affected by leprosy have access to services by other programmes dealing with other disabling diseases or conditions. Interventions aimed at preventing disabilities / impairments from occurring and/or worsening include early detection and effective management of leprosy-related reactions and nerve damage, proper counselling on self care, participation of household members in home based care, development and use of locally produced and culturally and aesthetically acceptable footwear and other appliances.

**Improving community awareness and involvement:** The major theme of community awareness is to provide accurate information about the disease, its curability and availability of services at the nearest health facility. The objective of such IEC efforts should be to encourage self - reporting of new cases and to reduce stigma and discrimination. There are four key messages for the general public include early signs of leprosy, its Curability, encourage people to support leprosy affected people to live a normal life and no need to fear as disease can be managed just like any of other diseases; can be expressed in many different ways.

**Support of National Rural Health Mission:** ASHA could be utilized for early detection of suspected cases of leprosy, referral of such cases to nearest health centre for confirmation & completion of treatment. _Rogi Kalyan Samities_ at PHC, CHC and district hospitals are autonomous registered bodies constituted at each level to facilitate in management of hospitals and delivery of quality care to patients. The NLEP will be benefited by working in coordination with other programs under the NRHM. District Health Mission which is chaired by the president of Zila Parishad may be helpful for advocacy of the program.

**Critical Appraisal**

Leprosy in present day scenario is still associated with social stigma. There are various myths related to the disease which interfere with health seeking behavior particularly early detection and treatment. Resistance to anti leprosy drugs i.e Dapsone, Rifampicin and Clofazimine has already been reported in few studies. No alternative regime is presently available for such cases. Achieving elimination will give a false sense of security against transmission of infection. Leprosy is a social disease however no efforts have been made for elimination of social factors related to the disease. There are many problems related to integration of program with general health services. Leprosy has always received low priority when compared to HIV/AIDS. Very little has been done in the area of rehabilitation of leprosy cases.

**Summary**

The National Leprosy control programme (NLCP) was launched in 1954. Treatment with MDT was introduced under NLEP in phased manner in the year 1983 and programme was renamed as National Leprosy Eradication Programme. The objectives of NLEP II (2001 onwards) have been To decentralize the NLEP responsibilities to the states/UT, Integration of Leprosy Control Activities with the general health services and To achieve elimination at national level. India achieved elimination of leprosy at National Level in December’ 05, when the recorded Prevalence Rate (PR) in the country was 0.95/10,000 population.

The main activities are - Early detection through active surveillance by the trained health workers, Regular treatment of cases by providing Multi-Drug Therapy (MDT) at fixed in or centers a nearby village of moderate to low endemic areas/ district, Intensified health education and public awareness campaigns to remove social stigma attached to the disease and Prevention of Disability & Medical Rehabilitation

The other strategies followed were Special Action Project for Elimination of Leprosy (SAPEL) for rural and Leprosy Elimination campaigns for urban areas: It is an initiative aimed at providing MDT services in difficult to reach areas. Modified Leprosy Elimination Campaign (MLEC): It is organizing camps which include a package of teaching, training, intensified IEC, case detection and prompt MDT Modified Leprosy Elimination Campaign (MLEC): It is organizing camps which include a package of teaching, training, intensified IEC, case detection and prompt MDT.

NLEP was implemented through the establishment of Leprosy control units (LCU), Survey education at Treatment centers(SET) and urban leprosy centers. Presently NLEP has been integrated into the general health services system under NRHM. The program will run under the same guidelines of GOI but will conform to Indian Public Health Standards as laid own under the mission. The minimum services available at the community health center should be diagnosis of leprosy, treatment of cases, management of reactions and advice to patients on disability prevention and care.

For Treatment leprosy cases are divided into Paucibacillary (Less severe type 1-5 patches &/or involvement of one nerve) and Multibacillary (More severe type 6 or more skin patches &
In the Post elimination period, NLEP needs to expand the scope of programme at PHC/ Hospital, District and State level. Keeping, validation of records, reporting and monitoring of the GHC service personnel can easily adapt to the system of record keeping, so that the newly involved State level was introduced in 2002 under which simplification of information system was done, so that the newly involved GHC service personnel can easily adapt to the system of record keeping, validation of records, reporting and monitoring of the programme at PHC/ Hospital, District and State level. In the Post elimination period, NLEP needs to expand the scope of leprosy services provided to the patients, their families and community at large. The aims and objective under the 11th Plan (2007-2012) are to further reduce the leprosy burden in the country, Provide good quality leprosy services, Enhance Disability Prevention and Medical Rehabilitation, Increase advocacy towards reduction of stigma and stop discrimination and Strengthen monitoring and supervision.

References
1. Indian Journal of Leprosy, vol 78, No1, Jan- March2006

Pilot Project On Prevention and Control Of Human Rabies Under 11th Five Year Plan

Puja Dudeja & Ashok K. Jindal

Rabies is an acute viral encephalomyelitis which is invariably fatal but can be easily prevented. Dog is the principal reservoir of Rabies in India. The goal of rabies control is to prevent human death and control dog rabies so that it no longer remains a major public health problem. This will reduce the socioeconomic losses from the disease. In India, cases of rabies occur throughout the year and in all parts of the country with the exception of Andaman and Nicobar Islands. It is estimated that about 20,000 people die of rabies every year. This figure may not be exact as there is on organized system of surveillance of rabies cases and hence lack of reliable data. There is at present no comprehensive National Rabies control Programme in India. Various organizations are currently involved in control activities without any intersectoral coordination. Existing rabies control activities are being carried out by Municipal Corporations/ Committees, Cantonments etc. in their respective areas.

Objectives: The broad objectives of the proposed pilot rabies control programme are firstly, prevention of Human deaths due to rabies and secondly, reducing the transmission of disease in animals.

Target: The specific target is reduction of rabies deaths in human beings by at least 50% by the end of Five year plan in the pilot project areas. For verification, the retrospective data will be collected from pilot project areas and continuous surveillance will be maintained till the end of XI five year plan.

Implementation: The programme will be implemented as a pilot project, with National Apex Committee for prevention and control of rabies as the Nodal Agency. The committee will be chaired by DGHS with Animal husbandry Commissioner, Joint Commissioner, Live Stock and Health; Joint Commissioner, Ministry of Information and Broadcasting, Govt of India; Director NICD; Director IVRI Izzatnagar; Director PII, Coonor as members and HOD, Zoonosis Division NICD as member secretary. Initially the programme is proposed to be implemented on pilot basis in two major cities i.e. Delhi and Pune.

Components of the programme: There will be 2 components, as follows:

Human Component
1. Local Health Authorities will make available infrastructure and logistics in the pilot project area, areas for post exposure treatment.
2. Facilities of wound wash will be provided at anti rabies clinic by the local health authorities.
3. Surveillance system will be strengthened to generate reliable data. Attempts will be make to integrate surveillance under IDSP work.
5. Ensuring community participation in IEC activities.
6. Involvement of NGOs and private sector.
7. Strengthening the Nodal agency for human rabies control (NICD, Delhi) for monitoring and evaluation of human component.
8. Operational Research with focus on study of factors leading to rabies deaths and minimizing animal bites.

Animal Component
1. Vaccination of stray dogs
2. Sterilization of dogs and population management
3. Waste management
4. Dog movement restriction etc.

Further Suggested Reading
Guinea Worm Eradication Programme

**Puja Dudeja & Ashok K. Jindal**

India is the first country in the world to establish the National Guinea Worm Eradication Programme in 1983-84 as a centrally sponsored scheme on 50-50 sharing between Centre and States with the objective of eradicating guinea worm disease from the country. The objective of the Guinea Worm Eradication Programme was to achieve zero guinea worm disease incidence in the country. The programme achieved zero guinea worm disease status in 1997, against 40,000 cases occurring annually in 1984. Banwari Lal, 25 years old, from Jodhpur in Rajasthan, was the last case in India in 1996 (1). “Zero” incidence has been maintained since August 1996 through active surveillance and intensified field monitoring in the endemic areas. In the Meeting of WHO in February 2000, India has been certified for the elimination of Guinea Worm Disease and on 15th February 2001, declared India as “Guinea Worm Disease Free (2)”. The important strategies adopted to eradicate the Guinea Worm (GW) were (2):

1. GW case detection and continuous surveillance through active case search operations and regular monthly reporting.
2. GW case management.
3. Vector Control by the application of Tempos in unsafe water sources eight times a year and use of fine nylon mesh/double layered cloth strainers by the community to filter Cyclops in all the affected villages.
4. Health education.
5. Trained manpower development.
6. Provision and maintenance of safe drinking water supply on priority in GW endemic villages.
7. Concurrent evaluation and operational research.

**References**

1. Lancet 2000;355:212(News)
2. Ministry of Health & Family Welfare. GOI, New Delhi, India.

Leptospirosis Control Programme

**Puja Dudeja & Ashok K. Jindal**

Due to rapid ecological changes, many zoonoses have emerged as epidemics. Leptospirosis causes significant morbidity and mortality in human beings especially in coastal region of the country. The objectives of the programme are to establish surveillance in the country and to reduce morbidity and mortality due to leptospirosis in India. The control programme will be implemented in a phased manner. In the first phase it will be conducted in Kottayam district of Kerala and South Gujrat. The reduction in Morbidity and Mortality would be an indicator of successful implementation of the programme.

**Strategy**: The strategy includes Development of Data Base through routine and IDSP system; Identifying vehicle of transmission; Identification of serovar in prevalent states; Identifying the causes of upsurge; Strengthening diagnostic facilities; and, Improving management facilities.

**Initiatives**: The three major factors responsible for leptospirosis are salinity of soil, adequate moisture and presence of microorganisms in reservoir / carrier hosts. Intersectoral coordination among the departments of National Bureau of Soil Survey and Land Resource Management, Department of Meteorology, Rodent control Board of India and department of Animal Husbandry of endemic states will be taken. The areas from where the disease has not been reported but where similar ecological factors prevail will be separately earmarked as ‘Leptospira Prone Areas’. A monitoring and evaluation system for above activities will be set up (1).

**References**

The Red Ribbon is an international symbol of AIDS awareness that is worn by people all year round and particularly on World AIDS Day (December 1) to demonstrate care and concern about people living with HIV/AIDS and to remind others of the need for their support and commitment. The concept of a World AIDS Day originated at the 1988 World Summit of Ministers of Health on programs for AIDS prevention. Since then, it has been taken up by Govts., International organisations and charities around the world.

**Evolution** : Evolution of National AIDS control programme is given in Table - 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>First HIV case reported in India</td>
</tr>
<tr>
<td>1987</td>
<td>AIDS control programme was launched</td>
</tr>
<tr>
<td>1992</td>
<td>Ministry of Health and Family Welfare set up a National AIDS Control Organization (NACO)</td>
</tr>
<tr>
<td>1986-1992</td>
<td>Surveillance launched in 55 cities in the three states and the programme activities were left to the states without a strong central guidance</td>
</tr>
<tr>
<td>1992-1997</td>
<td>National AIDS Control Project (Phase I), extended to 1999(1)</td>
</tr>
<tr>
<td>1999-2004</td>
<td>National AIDS Control Programme (Phase II), extended to 2007</td>
</tr>
<tr>
<td>2002</td>
<td>National AIDS Prevention &amp; Control Policy (2)</td>
</tr>
<tr>
<td>2007-2012</td>
<td>National AIDS Control Programme (Phase III)</td>
</tr>
</tbody>
</table>

**National AIDS Control Programme Phase I (1992-99)**

During this phase, the National AIDS Control Project was developed for prevention and control of AIDS in the country. The ultimate objective of the project was to slow the spread of HIV to reduce future morbidity, mortality, and the impact of AIDS by initiating a major effort in the prevention of HIV transmission. There was a nation wide capacity building in managerial and technical aspects of the programme. It also aimed at increasing awareness and condom usage in targeted high risk population.

**National AIDS Control Programme Phase II (1999-2004)**

The Phase II of the National AIDS Control Programme has become effective in 1999. It is a 100% Centrally sponsored scheme implemented in 32 States/UTs and 3 Municipal Corporations namely Ahmedabad, Chennai and Mumbai through AIDS Control Societies. The focus in this phase was to slow the spread of HIV infection, decrease the mortality and morbidity associated with HIV infection and minimize the socioeconomic impact resulting from HIV infection.(3,4).

**National AIDS Control Programme Phase III (2006-12)**

NACP-III is based on the experiences and lessons drawn from NACP-I and II, and is built upon their strengths. The focus in this phase was to slow the spread of HIV infection, decrease the mortality and morbidity associated with HIV infection and minimize the socioeconomic impact resulting from HIV infection.

**Goal** : To halt and reverse the epidemic in India over the next five years by integrating programmes for prevention, care and support and treatment.

**Objectives** : To reduce the rate of incidence by 60 per cent in the first year of the programme in high prevalence states to obtain the reversal of the epidemic, and by 40 percent in the vulnerable states to stabilise the epidemic.

**Strategy**

- Prevent infections through saturation of coverage of high-risk groups with targeted interventions (TIs) and scaled up interventions in the general population.
- Provide greater care, support and treatment to larger number of People Living with HIV/AIDS (PLHA).
- Strengthen the infrastructure, systems and human resources in prevention, care, support and treatment programmes at district, state and national levels.
- Strengthen the nationwide Strategic Information Management System.

**Programme Implementation**

**Intensive coverage of High Risk Groups through targeted interventions** : Surveys conducted under NACP II indicated presence of high risk groups in all parts of the country and a focused strategy was launched to raise their awareness, motivating them to adopt safe behavior, improving their access to preventive services and tools such as condoms. NACP III will aim at increasing the coverage of such services especially for high risk groups, identified as sex workers and their clients, transgender population, men having sex with men (MSM) and IV drug users in urban and rural areas. The ‘bridge population’ identified as truck drivers, street children, prison inmates and migrant workers would also receive special attention under NACP III. The essential elements of target interventions proposed under NACP III are access to behaviours change communication, prevention services such as condoms, STI services, needles and syringes, treatment services in form of STI clinics, drug substitutions for IV drugs, antiretroviral therapy and creation of an enabling environment under all project sites.

**Intensification of interventions among general populations** : Although 99 % of Indian population is not infected, a high level of vulnerability exists, especially, among young people, women, migrant workers and marginalized populations. NACP
III aims at reducing risk, vulnerability and stigma through increased awareness and targeted behavior change. The program is considered to be effective when 99% of population can recall three modes of HIV transmission and two methods of prevention. This is to be achieved through increased awareness through communication, social mobilization & advocacy and through integration and expansion of integrated HIV related services like HIV counseling, testing, STI treatment, Prevention of Parent To Child Transmission and Post Exposure Prophylaxis (PEP) at sub district hospital, community health centers and PHCs.

Sexually Transmitted Disease (STD) Control Program: Evidence suggests that likelihood of contracting HIV infection is 8-10 times higher in presence of other STDs, particularly genital ulcers. In view of the established relationship between HIV and STIs, Min of Health & Family welfare adopted a policy of integrating HIV/AIDS and STD control within the existing health care system. Under the program, emphasis is given to comprehensive treatment of STIs at primary health care level and integration of non-stigmatized services with greater accessibility and acceptability by patients and community, while maintaining confidentiality and privacy of the patients. NACO took over the STD control program (in operation since 1946) in 1992 and made it an integral component of AIDS control policy. After overcoming the shortcomings of the erstwhile STD control program (like poor accessibility, stigma), NACP III continues to provide STD services based on syndromic approach, with the aim to improve etiological management of STIs (9). The broad objective of STI control program under NACP III are to reduce STD infections, thereby controlling HIV transmission by minimizing a risk factor and to prevent short and long term morbidity & mortality due to STDs. This is to be achieved through the following strategies:

(i) Development of adequate & effective program management by strengthening existing STD clinics, appointing STD program officers in State AIDS control societies and identification of district nodal officers who would supervise working of STD clinics.

(ii) Promotion of IEC activities for prevention of transmission of STD & HIV infections in form of activities to educate people for responsible sexual behavior, safer sex and greater condom usage.

(iii) Improving case management including diagnosis, treatment, counseling, partner notification and screening for other diseases, in form of two sets of guidelines for PHC level and for referral of STD specialists.

(iv) Increasing access to health care for STD by strengthening existing STD clinics, increasing health seeking behavior through IEC & NGOs and establishing first Referral Units in collaboration with Dept of Family welfare.

(v) Creating facilities for diagnosis & treatment of asymptomatic infections by providing trained lady medical officer and sensitizing community through family Health Awareness Campaigns for early detection and referral to PHCs.

(Details of syndromic approach to management of STDs is given in detail in the chapter on STDs).

Family Health Awareness Campaign (FHAC)

These are campaigns for 15 days, organized by the states to address the issue of RTIs/STDs and HIV/AIDS. The objectives of the campaign are:

1. To raise awareness levels regarding HIV/AIDS in rural and urban areas.
2. To make people aware about the services available under the public sector for management of HIV/AIDS.
3. To facilitate early detection and prompt treatment of RTI/STD cases by utilizing the infrastructure available under primary health care system including provision of drugs.
4. To strengthen the capacity of medical and paramedical professionals working under health care system to respond to HIV/AIDS epidemic adequately.
5. To use safe blood from licensed blood banks and blood storage centers.
6. To be aware that HIV can be transmitted from the infected mother to her baby during pregnancy, delivery and breast feeding.

Voluntary Counseling and Testing (VCT): VCT specifically involves increasing availability an demand for voluntary testing including joint testing of couples, training grassroots health workers in HIV counseling and providing counseling through blood banks and through STI clinics. Under NACP III, it is envisaged that at least one voluntary testing centre would be established in every district. Pretesting counseling (before HIV testing) essentially prepares an individual for undergoing HIV test, identifying high risk behavior. Post test counseling helps the client to understand the importance and meaning of negative or positive HIV test, benefits of changing the high risk behavior and constructively handling the marital and sexual needs.

HIV testing: Under the present HIV testing policy of Govt of India, there is no rationale for mandatory HIV testing of any individual. It is established that any form of mandatory testing usually drives ‘underground’ those who are at highest risk due to stigma & discrimination and is thus counter-productive in the long term. According to present HIV policy, HIV testing is carried out on voluntary basis with adequate pretest and post-test counseling. Govt of India has formulated a comprehensive HIV testing policy, in accordance to WHO guidelines, which states that:

(i) No individual shall be made to undergo any form of mandatory HIV testing.
(ii) HIV testing shall not be imposed as a precondition to employment or for providing health care facilities during employment.
(iii) Adequate facilities for voluntary testing with pretest and post -test facilities will be made available throughout the country in a phased manner, so as to have at least one HIV testing centre in every district.
(iv) Disclosure of HIV status to spouse of the person will depend entirely on willingness to part with such informations. However, all efforts should be made so that the individual voluntarily shares such information with family, to ensure proper home based care.
(v) Different testing strategies are to be adopted under different circumstances, as under:
Prevention of Parent To Child Transmission (PPTCT)

The concerned individual.

disclosed only after proper pre-test and post-test counseling of who voluntarily ask for it, testing using different antigen management and for confirmation of HIV status of individuals anonymous and result is not given to the person. For clinical has high sensitivity. In such cases, testing is unlinked and is adopted with one or two of Rapid/ELISA/Simple, which

is enough to eliminate possibility of HIV infection. NACP III envisages that antenatal clinics will be used for imparting HIV education to pregnant women through trained counselors. Special emphasis would also be given to drug prophylaxis linked with infant feeding, nutritional support and contraception. Drug regimes used for chemoprophylaxis would be modified according to emerging evidence of efficacy of the drugs.

Prevention of Parent To Child Transmission (PPTCT) : Various studies have indicated that chemoprophylaxis (in the form of Nevirapine) before delivery in case of HIBV-infected pregnant woman significantly reduces mother-to-child transmission rate from 33 % to 8.4 % at birth or 10.1% at age of two months. The intervention cost has been worked out to Rs.175 per women, which is a very cost effective method to prevent perinatal HIV infection. NACP III envisages that antenatal clinics will be used for imparting HIV education to pregnant women through trained counselors. Special emphasis would also be given to drug prophylaxis linked with infant feeding, nutritional support and contraception. Drug regimes used for chemoprophylaxis would be modified according to emerging evidence of efficacy of the drugs.

Occupational Health and HIV/AIDS : NACP III has addressed the issue of expanding HIV/AIDS response at work place. Under NACP III, specific guidelines have been formulated in collaboration with employers, workers organizations, ministries and civil society, with the aim to strengthen response to HIV and mitigate the effect of the diseases at work place. The key areas for intervention at work place are prevention of HIV/AIDS, management & mitigation of impact at work place, care & support for infected workers and reducing stigma and discrimination at work place.

Universal Protection & Post Exposure Prophylaxis (PEP) : Under NACP III, health care worker will be provided specific protection against occupational exposure to HIV. NACP III recommends following measure after occupational exposure:

(i) Rapid testing facility for HIV testing.

(ii) Exposure with HIV should be considered a medical emergency.

(iii) Chemoprophylaxis should be started within 4 hours after exposure.

(iv) Chemoprophylaxis should be reviewed on 1, 3 and 6 months interval.

(v) Under NACP III, only following drugs are approved for post exposure prophylaxis:

- Zidovudine - 300 mg twice daily for 4 weeks
- Lamivudine - 150 mg twice daily for 4 weeks
- Indinavir - 800 mg thrice daily (only as part of expanded regime)
- Saquinavir - 600 mg thrice daily.

Blood Safety Program : In India, blood banking infrastructure is highly decentralized and there is acute shortage of trained manpower, equipment and financial resources necessary to provide the desired quality of blood. In addition, there is often shortage of blood which encourages private blood banks with inadequate infrastructure and quality control.

Blood safety has remained an integral part of NACP since its inception an NACP III has included the objectives of:

(i) Ensuring organized blood banking services at State/District level
(ii) Educating & motivating community about importance of voluntary blood donation
(iii) Enforcing quality control for all units of blood to be infused.

Condom Promotion Program : In India, heterosexual transmission constitutes the major transmission route of HIV and condom usage remains the single most effective and practical method to prevent HIV transmission. Accordingly, Condom Promotion program under NACP III proposed that there should be no moral, religious or ethical inhibition in promoting condom usage among sexually active individuals, especially those who practice high risk behavior(6). Under NACP III, it is envisaged to convince people to use condom not only for family planning but also as the best preventive measure against HIV, convince commercial sex workers and their clients to use condoms as means to prevent sexually transmitted diseases including HIV and to make available low cost, good quality condoms to people all over the country easily at the time and place where they will need them. The objective of Condom Promotion Program is to ensure easy access to acceptable, good quality and affordable condoms with the view to promote safe sex. The following are used as indicators for success of Condom Promotion Program under NACP III:

(i) Percentage of persons who report easy availability of condoms within 500 meters of the place where they need them.

(ii) Percentage of persons reporting consistent use of condom in sexual encounters with non-regular partners in last 30 days.

(iii) Percentage increase in number of non-traditional outlets for condoms, like post offices, shopping malls etc.

University Talk AIDS Project (UTA) : UTA Project began as early as Oct 1991 with partnership between National Service Scheme (NSS), Dept of Youth Affairs & Sports and NACO. The project aims to generate awareness among students on HIV related issues through seminars, talks workshops and written material. The program also deals with related issues pertinent to youth like drug abuse, relationship, courtships, marriage and thus aims to enhance life style skills among the youth.
Treatment for opportunistic infections: It was previously available at district level; would be now available at CHC and PHC levels. Drugs would be given free at all govt hospitals and few NGOs with good track record in providing HIV care would also be incorporated for treating HIV. NACP III also proposes close linkage between NACP and RNTCP since tuberculosis remains the most common and most lethal opportunistic infection among HIV infected individuals.

HIV Sentinel Surveillance: HIV Sentinel Surveillance is undertaken every year jointly by National AIDS Control Organisation (NACO) and Min of Health & Family Welfare since 1998, with the aim of updating HIV estimates for the country. Under this program, HIV prevalence in the country is estimated based on HIV prevalence recorded at designated sentinel surveillance sites (such as STD clinics, de-addiction centers and intervention centers for female sex workers) for different risk groups. Women attending antenatal clinics are taken to be representative of the general population. Blood samples collected (between 01 Aug - 31 Oct) by unlinked anonymous method are tested at regular intervals annually and the data is used for epidemiological analysis and estimation of HIV prevalence in the country. The HIV Sentinel Surveillance System of India has greatly evolved over time covering all the districts of the country as well as all the high risk population groups. Annual HIV Sentinel Surveillance is conducted among Pregnant women attending Antenatal clinics, Patients attending STI Clinics, Female Sex Workers, Injecting Drug Users, Men who have Sex with Men, Migrant Population, Long distance Truckers, Eunuchs and Fisher folk. Based on HIV Sentinel Surveillance data, all the districts in the country are categorised into four categories for priority attention in the programme.

Behaviour Surveillance Survey (BSS): BSS throws light on the knowledge, awareness and behaviours related to HIV/AIDS among general population, youth as well as among different high risk group communities. It also provides rich inputs to understand the impact of the intervention efforts being undertaken through NACP (7). BSS is undertaken to provide behavioural measurement for recording trends of high risk behavior among selected population groups. A set of 9 indicators, as under were used on three occasions to assess the trends.

(a) Knowledge indicators: These include Proportion of respondents who know the following: 2 acceptable ways to prevent HIV; and, that condoms prevent HIV.

(b) Behaviour Indicators: These include proportion of respondents who report heterosexual intercourse with non-regular partner in the last year and proportion of respondents who report condom usage during last sexual intercourse with non regular partner in the last year.

(c) Prevalence of Urethritis among male respondents who report symptoms of urethritis during last one year or proportion of male respondents who sought treatment from qualified medical practitioners for urethritis in the last year.

(d) Appropriate perception of risk indicators: This pertains to proportion of respondents with high risk behavior who perceive that they can get infected with HIV.

India’s response to HIV epidemic is influenced by the available surveillance data, implementation capacities and political commitment at state and national level. Apart from the sentinel surveillance, nationwide Computerised Management Information System (CMIS) provides strategic information on programme monitoring and evaluation. However, in the planning of NACP-III it was felt that data from sentinel surveillance and CMIS are not sensitive enough to detect the
emerging hot spots of the epidemic. To overcome this, NACO, in its third HIV/AIDS programme introduced Strategic Information Management System (SIMS) at national and state levels to focus on strategic planning, monitoring, evaluation, surveillance and research. It is aimed to provide effective tracking and response to HIV epidemic. The system assigns clear responsibilities to all programme officers and facilitates data flow and feedback at various levels.

Core Services at District level

In packaging of services, care is taken for the special needs of the region and availability of complementary health care system. In high prevalence districts, the full spectrum of preventive, supportive and curative services are available in medical colleges or district hospitals. These hospitals provide HIV/AIDS prevention services including treatment and care for sexually transmitted infections, psycho-social counselling and support for people infected or affected by HIV, management of opportunistic infections and anti-retroviral therapy for people living with HIV/AIDS, counselling and testing facility for prevention of parent to child transmission of HIV infection, specialised paediatric HIV care and treatment / referral for specialist needs such as surgery, ENT and ophthalmology etc.

Care and Support for Children: Approximately 50,000 children below 15 years are infected by HIV every year. So far, care and support response to these children was at a very minimal level. NACP-III plans to improve this through early diagnosis and treatment of HIV exposed children; comprehensive guidelines on paediatric HIV care for each level of the health system; special training to counsellors for counselling HIV positive children; linkages with social sector programmes for accessing social support for infected children; outreach and transportation subsidy to facilitate ART and follow up, nutritional, educational, recreational and skill development support, and by establishing and enforcing minimum standards of care and protection in institutional, foster care and community-based care systems.

Treatment: HIV infection is not the end of life. People can lead a healthy life for a long time with appropriate medical care. Anti-retroviral therapy (ART) effectively suppresses replication, if taken at the right time. Successful viral suppression restores the immune system and halts onset and progression of disease as well as reduces chances of getting opportunistic infections - this is how ART is aimed to work. Medication thus enhances both quality of life and longevity. Adherence to ART regimen is therefore very vital in this treatment. Any irregularity in following the prescribed regimen can lead to resistance to HIV drugs, and therefore can weaken or negate its effect. ART is now available free to all those who need it. Public health facilities are mandated to ensure that ART is provided to people living with HIV/AIDS (PLHA). Special emphasis is given to the treatment of sero-positive women and infected children. ART is initiated depending upon the stage of infection. PLHA with less than 200 CD4 (white blood cells/ mm^3) require treatment irrespective of the clinical stage. For PLHA with 200-350 CD4, ART is offered to symptomatic patients. Among those with CD4 of more than 350, treatment is deferred for asymptomatic persons. There are 127 ART centres operating in the country as of June 2007. By 2012, 250 ART centres will become functional across the country in order to provide people living with HIV/AIDS better access to treatment.

Paediatric Care and Support: The primary goal of paediatric prevention, care and treatment programme is to prevent HIV infection to newborns through Prevention of Parent To Child Transmission (PPTCT) and provide treatment and care to all children infected by HIV.

Research: Beginning NACP-III, NACO has positioned itself as the promoter and coordinator of research on HIV/AIDS not only in India, but the entire South Asia region through partnership and networking with national academic and other institutions in the region. This initiative will enhance NACO’s knowledge and evidence base of the various aspects of the epidemic.

Strengthening decentralization and expanding health systems: Under the NACP-III, decentralization of HIV services and convergence of services with the Reproductive Child Health Programme is envisaged; with strengthening of the capacities of the districts to manage prevention, treatment, care and support programmes.

Prioritization of districts for programme implementation: National AIDS Control Programme - III envisages district level planning and implementation of all the programmatic initiatives. For the purpose of planning and implementation of NACP-III, all the districts in the country are classified into four categories based on HIV prevalence in the districts among different population groups for three consecutive years. The definitions of the four categories are as follows:

- Category A: More than 1% ANC prevalence in district in any of the sites in the last 3 years.
- Category B: Less than 1% ANC prevalence in all the sites during last 3 years with more than 5% prevalence in any High Risk Group (HRG) site (STD/FSW/MSM/IDU).
- Category C: Less than 1% ANC prevalence in all sites during last 3 years with less than 5% in all HRG sites, with known hot spots (Migrants, truckers, large aggregation of factory workers, tourist etc).
- Category D: Less than 1% ANC prevalence in all sites during last 3 years with less than 5% in all HRG sites with no known hot spots or no or poor HIV data.

Critical appraisal

Due to stigma attached with HIV/AIDS, people living with the disease face a lot of discrimination. The program does not lay much emphasis to this important issue. Rehabilitation of sex workers who are HIV positives has been neglected in the program and needs special budgetary allocation. When the program started no targets were fixed and the program could not be evaluated properly due to non existence of indicators. Provision of free ART may eat the budget of other important communicable diseases. NACP has been conspicuously silent on structural socioeconomic vulnerabilities and the root cause of continuing flow of subpopulation into situations involving high risk behavior. It offers nothing to address these vulnerabilities through creating viable, holistic alternatives for those presently entrapped. The concept of voluntary and confidential testing is not being implemented in true spirit. Many Indians are tested for HIV without their knowledge and consent especially for those undergoing surgeries.
Summary

The first HIV case was reported in 1986. National AIDS Control Programme was launched in 1987. The programme was in phase I from 1992-1997 (extended to 1999), phase II (1999-2004) and is presently in phase III from 2007-2012. The Goal of NACP is to halt and reverse the epidemic in India over the next five years by integrating programmes for prevention, care, support and treatment. The Objectives are to reduce the rate of incidence by 60 per cent in the first year of the programme in high prevalence states to obtain the reversal of the epidemic, and by 40 percent in the vulnerable states to stabilise the epidemic.

The Strategy in phase III has been to prevent infections through saturation of coverage of high-risk groups with targeted interventions (TIs) and scaled up interventions in the general population. Provide greater care, support and treatment to larger number of People Living with HIV/AIDS (PLHA). Strengthen the infrastructure, systems and human resources in prevention, care, support and treatment programmes at district, state and national levels and to strengthen the nationwide Strategic Information Management System.

The activities which are included are - Intensive coverage of High Risk Groups through targeted interventions, intensification of interventions among general populations, Sexually Transmitted Disease (STD) Control Program, Family Health Awareness Campaign (FHAC), Voluntary Counseling and Testing (VCT), Prevention of Parent to Child Transmission (PPTCT), Universal Protection & Post Exposure Prophylaxis (PEP), Blood Safety Program, Condom Promotion Program, University Talk AIDS Project (UTA), Treatment for opportunistic infections and Monitoring & Evaluation.

For HIV testing different strategies have been adopted for different situations such as (a) Mandatory testing: screening in blood banks for blood safety. However, testing in all blood banks will be undertaken on collected blood samples in an unlinked & anonymous manner so as to only identify the status of blood sample and not of the donor. (b) Unlinked and anonymous testing: To be undertaken for epidemiological surveys and HIV surveillance to monitor the trend of HIV infection in community. (c) Voluntary and confidential testing: To be undertaken as confirmatory testing for subclinical infections/clinical management and as voluntary testing. (d) Need based testing: To be undertaken with explicit consent, for research purpose, after ensuring all ethical considerations. For care and support of children, NACP-III plan envisages early diagnosis and treatment of HIV exposed children; comprehensive guidelines on paediatric HIV care for each level of the health system; special training to counsellors for counselling HIV positive children; linkages with social sector programmes for accessing social support for infected children; outreach and transportation subsidy to facilitate ART and follow up.

ART is initiated depending upon the stage of infection. PLHA with less than 200 CD4 (white blood cells/ mm<sup>3</sup>) require treatment irrespective of the clinical stage. For PLHA with 200-350 CD4, ART is offered to symptomatic patients. Among those with CD4 of more than 350, treatment is deferred for asymptomatic persons.

National AIDS Control Programme - III envisages district level planning and implementation of all the programmatic initiatives. For the purpose of planning and implementation of NACP-III, all the districts in the country are classified into four categories based on HIV prevalence in the districts among different population groups for three consecutive years. The definitions of the four categories are as follows: Category A: More than 1% ANC prevalence in district in any of the sites in the last 3 years. Category B: Less than 1% ANC prevalence in all the sites during last 3 years with more than 5% prevalence in any HRG site (STD/FSW/MSM/IDU). Category C: Less than 1% ANC prevalence in all sites during last 3 years with less than 5% in all HRG sites, with known hot spots (Migrants, truckers, large aggregation of factory workers, tourist etc). Category D: Less than 1% ANC prevalence in all sites during last 3 years with less than 5% in all HRG sites with no known hot spots or no or poor HIV data.

References

5. NACO Website, National AIDS Prevention and Control Policy.
In May 1988, the World Health Assembly committed the member nations of the World Health Organization (WHO) to achieving the goal of global eradication of poliomyelitis. This goal is defined as (1):

- No cases of clinical poliomyelitis associated with wild poliovirus, and
- No wild poliovirus found worldwide despite intensive efforts to do so.

WHO Regions that have been certified as polio-free are the Americas (last case in 1991, Peru; Region certified polio-free in 1994), the Western Pacific Region (last case in 1997, Cambodia; Region certified 2000), and the European Region (last case in 1998, Turkey; Region certified 2001).

**Strategy**

The primary strategies for achieving this goal are:

**Attaining high routine immunization**: By immunizing every child aged <1 year with at least 3 doses of oral poliovirus vaccine (OPV). Paralytic polio can be caused by any of 3 closely-related strains (serotypes) of poliovirus. Trivalent OPV (OPV3) provides immunity against all 3 types. Three routine OPV doses should be received by infants at ages 6, 10 and 14 weeks.

**National Immunization Days (NIDs)**: By conducting Pulse Polio Immunization (PPI) programme by providing additional OPV doses to every child aged <5 years at intervals of 4-6 weeks. The aim of NIDs/PPI is to “flood” the community with OPV within a very short period of time, thereby interrupting transmission of virus throughout the community. Intensification of the PPI programme is accomplished by the addition of extra immunization rounds, adding a house-to-house “search and vaccinate” component in addition to providing vaccine at a fixed post. The number of PPI rounds conducted during any particular year is determined by the extent of poliovirus transmission in the country. The modified IPPI (Intensified Pulse Polio Immunization) strategy included vaccination of children through fixed booth approach on first day, followed by extensive house-to-house search of missed children for vaccination.

**Surveillance of Acute Flaccid Paralysis (AFP)**: Identify all reservoirs of wild poliovirus transmission. This includes AFP case investigation and laboratory investigation of stool specimens collected from AFP cases, which are tested for polioviruses in specialized laboratories.

**Mopping-up immunization**: When poliovirus transmission has been reduced to well-defined and focal geographic areas, intensive house-to-house, child-to-child immunization campaigns are conducted over a period of days to break the final chains of virus transmission.

**Evolution of Polio vaccination in India**

This is presented in Table - 1

In 1999 - 2000, with a view to reach the global goal of reaching zero incidence of polio by 2000 AD, a strategy to intensify PPI was adopted. The strategy consisted of four nation-wide PPI rounds in the months of October, November, December 2000 and January 2001; followed by two sub-national rounds in 8 States of Assam, Bihar, Gujarat, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal and routine immunization, especially in the poor performing States. During 1999, Supplementary Immunisation Activities (SIAs) were intensified, with the addition of house-to-house vaccination after an initial day of fixed-site activity (2).

**Table - 1**

<table>
<thead>
<tr>
<th>Year</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>1978</td>
<td>Vaccination against polio was initiated under Expanded Programme on Immunization (EPI)</td>
</tr>
<tr>
<td>1984</td>
<td>Coverage achieved was around 40% of all infants with 3 doses of Oral Polio Vaccine (OPV)</td>
</tr>
<tr>
<td>1985</td>
<td>Universal Immunization Programme (UIP) was launched</td>
</tr>
<tr>
<td>1995</td>
<td>The number of reported cases of polio declined from 28757 during 1987 to 3265 in 1995. Pulse Polio Immunization (PPI) Programme was launched in 1995-96 to cover all children below the age of 3 years</td>
</tr>
<tr>
<td>1996-97</td>
<td>To accelerate the pace of polio eradication, the target age group was increased to all children under the age of 5 years</td>
</tr>
<tr>
<td>1997</td>
<td>National Polio Surveillance Project was launched by Govt. of India &amp; World Health Organization</td>
</tr>
</tbody>
</table>

**Summary of cases**: Decadal trend of polio cases is given in Table - 2 (3).

**Table - 2**

<table>
<thead>
<tr>
<th>Year</th>
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<td>676</td>
</tr>
<tr>
<td>2007</td>
<td>874</td>
</tr>
<tr>
<td>2008</td>
<td>420 (P1:25, P3:325)</td>
</tr>
</tbody>
</table>

Source: See reference (3)

**AFP Surveillance**

The strategy to eradicate wild poliovirus is two-fold, viz., immunization and surveillance. The objective of AFP surveillance is to detect the exact geographic locations where wild polioviruses are circulating in the human population. All
cases of acute flaccid paralysis in children aged <15 years are rigorously investigated by a trained medical officer, with collection of stool specimens to determine if poliovirus is the cause of the paralysis. Analysis of the location of polioviruses isolated from AFP cases allows programme managers to plan immunization campaigns (Pulse Polio Immunization).

**Case Definition:** Acute flaccid paralysis is defined as any case of AFP in a child aged <15 years, or any case of paralytic illness in a person of any age when polio is suspected.

**Acute:** Rapid progression of paralysis from onset to maximum paralysis; **Flaccid:** Loss of muscle tone, “floppy” - as opposed to spastic or rigid; **Paralysis:** Weakness, loss of voluntary movement. Any case meeting this definition undergoes a thorough investigation to determine if the paralysis is caused by polio.

**Components of AFP Surveillance**

1. Case Notification
2. Case and laboratory investigation
3. Outbreak Response Immunization (ORI) and active search of cases in community
4. 60 days follow up, cross notification & tracking of cases

An AFP case detected by health workers is reported to local health authorities and to state and national bodies. Case investigators are sent to confirm the diagnosis and collect faecal samples that are transported to the nearest laboratory for virus culture. This is followed by Outbreak Response Immunization (ORI), wherein all children less than 59 months in the area are given an additional dose of OPV. At least 500 children are vaccinated under ORI. Along with ORI, an intensive search is carried out for more cases of AFP. The case definition includes any child less than 15 years with history of flaccid/floppy paralysis. The AFP cases are revisited after 60 days of onset of paralysis to check for residual weakness/neurological deficit. The confirmation of paralytic polio is based on the review after 60 days and the laboratory report of the stool specimen. The suspected stool samples are sent to WHO recognized National Laboratories where poliovirus culture and identification are carried out. If poliovirus is found, the samples are forwarded to one of the Regional Reference Laboratories where VDPV and wild poliovirus are differentiated.

**National Polio Surveillance Project**

The National Polio Surveillance Project is a collaborative project of Govt. of India & the World Health Organization and managed by the latter. Currently a team of more than 250 Surveillance Medical Officer (SMO), Sub-Regional Coordinator (SRC) and Regional Coordinator (RC) are spread across the country who comprise the field staff of project. They are supported by a network of 9 Polio National Laboratories, which undertake the Virological Investigation of AFP (Acute Flaccid Paralysis) cases. The central headquarter unit of the project - The National Polio Surveillance Unit (NPSU) provides logistical & technical backup to the field staff.

In October 1997, active surveillance of Acute Flaccid Paralysis was established to meet the demands of Polio Eradication. SMOs with Government counterparts established Reporting Units for reporting of occurrence of AFP cases to the District, State & National levels; timely case investigation & collection of stool specimen form AFP cases and its shipment to laboratories. AFP Surveillance at the local level is institution based through a comprehensive network of reporting sites which includes health facility reporting units & informers.

**Critical appraisal (4)**

A critical juncture has been reached in eradication of poliomyelitis in India. The tools are available which are proven to be effective across the world. The large disparity in routine vaccine coverage among various regions of the country is hampering the eradication efforts. Compounding the problem is the social mobility from migrant labour moving to urban conglomerates. Eradication efforts need to be focused on these high risk groups, including mop-up activity for absentee and defaulter immunisation. Community participation remains the key to success and has to be ensured for better compliance. The importance of ensuring cold chain has to be stressed to maintain vaccine potency. Potency checking of OPV is hardly done after the inception of the Vaccine Vial Monitor (VVM) into IPPI. A review of this may be necessary to ensure that a potent vaccine is used. As we near the control of wild-virus transmission, Vaccine Associated Paralytic Polio (VAPP) is a real danger. The introduction of Injectable Polio Vaccine may be an option, at least in the better performing areas like Kerala and the North East. Combination of DPT with IPV in the UIP has been suggested and may have to be done in the near future.

**Summary**

Polio eradication is defined as - No cases of clinical poliomyelitis associated with wild polivirus, and No wild polivirus found worldwide despite intensive efforts to do so. The primary strategies for achieving this goal are attaining high routine immunization, National Immunization Days (NIDs), Surveillance of Acute Flaccid Paralysis (AFP) and Mopping-up immunization. On NID, OPV doses to every child aged <5 years at intervals of 4-6 weeks. The aim of NIDs/IPPI is to “flood” the community with OPV within a very short period of time, thereby interrupting transmission of virus throughout the community.

**AFP Surveillance:** The objective of AFP surveillance is to detect the exact geographic locations where wild polioviruses are circulating in the human population. The Components of AFP Surveillance are Case Notification, Case and laboratory investigation, out break response immunization and active search of cases in community and 60 days follow up, cross notification and tracking of cases.

The National Polio Surveillance Project is a collaborative project of Govt. of India & the World Health Organization and managed by the later for active surveillance of Acute Flaccid Paralysis; was established to meet the demands of Polio Eradication.

**References**

Surveillance is essential for the early detection of emerging (new) or re-emerging (resurgent) infectious diseases. In the absence of surveillance, disease may spread unrecognized by those responsible for health care or public health agencies, because sick people would be seen in small numbers by many individual health care workers. By the time the outbreak is recognized, it may be too late for intervention measures. Continuous monitoring is essential for detecting the ‘early signals’ of outbreak of any epidemic of a new or resurgent disease. Surveillance data can be effectively used for the purpose of social mobilization to help the public participate actively in controlling important diseases. This will go a long way in reducing the burden of disease in the community.

IDSP is a decentralized, state-based Surveillance Project (IDSP) which will be able to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. It will also be expected to provide essential data to monitor progress of on-going disease control programs and help allocate health resources more optimally. IDSP will also facilitate the study of disease patterns in the country and identify new emerging diseases (1).

**Aim & Objectives:** The aim is to improve the information available to the government health services and private health care providers on a set of high-priority diseases and risk factors, with a view to improving the on-the-ground responses to such diseases and risk factors. The objectives are:

1. To establish a decentralized state-based system of surveillance for communicable and non-communicable diseases, so that timely and effective public health actions can be initiated in response to health challenges in the country at the state and national level.
2. To improve the efficiency of the existing surveillance activities of disease control programs and facilitate sharing of relevant information with the health administration, community and other stakeholders so as to detect disease trends over time and evaluate control strategies.

**Activities & Components**

1. Establish and Operate a Central-level Disease Surveillance Unit.
2. Integrate and strengthen disease surveillance at the state and district levels.
3. Improve laboratory support.
4. Training for disease surveillance and action.

The details are shown in the Table - 1

**Implementation:** IDSP will monitor a limited number of conditions based on state perceptions including 13 core and 5 state priority conditions for which public health response is available. District, State, & Central Surveillance units will be set up so that the program is able to respond in a timely manner to surveillance challenges in the country including emerging epidemics. It will integrate surveillance activities in the country under various programs and use existing infrastructure for its function. Private practitioners / Private hospitals / Private laboratories and medical colleges will be inducted into the program as sentinel units. Uniform high quality surveillance activities will be ensured at all levels. Following actions will be taken for successful implementation:

(i) Limiting the total number of diseases under surveillance and reducing overload at the periphery.
(ii) Developing standard case definitions.
(iii) Developing formats for reporting.
(iv) Developing user friendly manuals.
(v) Providing training to all essential personnel.
(vi) Setting a system of regular feedback to the participants on the quality of surveillance activity. District Public Health Laboratory will be strengthened to enhance capacity for diagnosis and investigations of epidemics and confirmation of disease conditions. Use of information technology will be done for communication, data entry, analysis, reporting, feedback and actions. A national level surveillance network will be established up to the district level.

**Disease conditions under the surveillance program:** Integration of Surveillance under various disease control programme: Under IDSP surveillance activities carried out under National Disease Control Programmes relating to Malaria, Tuberculosis, HIV/AIDS, Diseases under RCH (Measles, Polio, Acute Diarrhoeal Diseases) and state specific diseases would be integrated (See Table - 2).

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**Table - 1**

<table>
<thead>
<tr>
<th>Compo-</th>
<th>Activities</th>
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<tr>
<td>nent</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Ministry of Health and Family Welfare (MOHW) will establish a new Disease Surveillance Unit. It will give support to state surveillance units and help in coordination. It will also help in change of diseases in the system.</td>
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<tr>
<td>2.</td>
<td>It will integrate and strengthen disease surveillance at the state and district levels, and involve communities and other stakeholders, in particular, the private sector.</td>
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<tr>
<td>3.</td>
<td>This involves upgrading laboratories at the state level, in order to improve laboratory support for surveillance activities. Adequate laboratory support is essential for providing on-time and reliable confirmation of suspected cases; monitoring drug resistance; and monitoring changes in disease agents. It also includes introducing a quality assurance system for assessing and improving the quality of laboratory data.</td>
</tr>
<tr>
<td>4.</td>
<td>The first three components will require a large and coordinated training effort to reorient health staff to an integrated surveillance system and provide the new skills needed.</td>
</tr>
</tbody>
</table>
Response to the Surveillance Information at various levels (Fig. - 1)

1. At Central Level: The response functions at the central surveillance committee level will include Development of national guidelines for case definitions and disease control, compilation and analysis of SSU reports (quarterly), reporting to World Bank, coordinate external quality assurance activities. The CSU will also advise SSUs on disease control measures, Monitor situation and response (continuously), notify international public health agencies, seek and coordinate international assistance if necessary.

2. At State Level: The response functions at the state surveillance committee level will include: Advise to DSUs on disease control measures, monitor situation and response, notify CSU, and deployment of state rapid response team if necessary. Compilation of DSU reports (monthly), assess reporting performance of DSUs (monthly), reporting to CSU (monthly) and feedback to DSUs (monthly).

3. At District Level: The response functions at the District surveillance committee level will include: Initiation of outbreak investigation through Rapid Response Teams (RRT), provide coordination to Outbreak response activities involving CHCs, initiate disease control measures and treatment, notify SSU, facilitate private / public Partnership in outbreak response. It will also include data entry of sentinel data from institutions not linked directly (weekly), analysis including calculation of case counts and descriptive epidemiology (weekly), monitoring and evaluation including assess accuracy and completeness of submitted reports (weekly), collection and trend analysis of water quality, air quality, and road accident data.

4. At CHC / PHC Level: The response functions at the MO i/c CHC and MO i/c PHC level will include Verification of reports of outbreaks from health worker (within 24 hours), verification of reports of Outbreaks in the rumor registry (within 48 hours), disease-specific control activities (immediately), collection and transport of biological samples to lab, reporting of suspected and confirmed cases to DSU (within 24 hours), IEC and integration with Village health committee, and outbreak investigation, under DSU directions. The actions will also include verification of local health worker case reports (weekly), verification of laboratory reports (weekly), and Feedback to local health workers (weekly).

5. At Local Health Worker Level: The response functions will include: Informing MO PHC/CHC, Active search for similar cases, Collection and transport of biological samples to lab, and IEC activities. The actions will also include monitoring of illnesses and reporting to CHC, and refer patients to PHC / CHC.

Phasing: IDSP will be implemented in three phases (2) as follows: Phase I (FY 2004-05), Phase II (FY 2005-06) and Phase III (FY 2006-07).

Conclusion: Surveillance is the essence of a disease control program. By setting up a decentralized, action oriented, integrated and responsive program, it is expected that IDSP will avert a sufficient number of disease outbreaks and epidemics and reduce human suffering and improve the efficiency of all existing health programs. Such a program will also allow monitoring of resource allocation and form a tool to enhance equity in health delivery.

<table>
<thead>
<tr>
<th>Table - 2: Disease conditions under the IDSP</th>
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<tbody>
<tr>
<td><strong>Surveillance</strong></td>
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<td><strong>Regular Surveillance</strong></td>
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<td><strong>Sentinel Surveillance</strong></td>
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<tr>
<td><strong>Regular periodic surveys</strong></td>
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<tr>
<td><strong>Additional State Priorities</strong></td>
</tr>
</tbody>
</table>
Summary

IDSP is a decentralized, state based Surveillance Project which will be able to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. It will also be expected to provide essential data to monitor progress of on-going disease control programs and help allocate health resources more optimally.

The aim is to improve the information available to the government health services and private health care providers on a set of high-priority diseases and risk factors, with a view to improving the on-the-ground responses to such diseases and risk factors. The objectives are: To establish a decentralized state based system of surveillance for communicable and non-communicable diseases, so that timely and effective public health actions can be initiated in response to health challenges in the country at the state and national level; To improve the efficiency of the existing surveillance activities of disease control programs and facilitate sharing of relevant information with the health administration, community and other stakeholders so as to detect disease trends over time and evaluate control strategies.

The components are to Establish and Operate a Central-level Disease Surveillance Unit, Integrate and strengthen disease surveillance at the state and district levels, Improve laboratory support and Training for disease surveillance and action.

The implementation is through District, State & Central Surveillance units. There will be Regular Surveillance (Vector Borne, Water Borne, Respiratory Diseases, Vaccine Preventable Diseases and Diseases under eradication), Sentinel Surveillance (Sexually transmitted diseases/Blood borne conditions), Regular periodic surveys (NCD Risk Factors) and each state may identify up to five additional conditions for surveillance.

The flow of information will be from Local Health Worker to CHC MO / PHC MO, to District Surveillance Committee, to State Surveillance Committee and finally to Centre Surveillance Committee. IDSP will be implemented in three phases: Phase I (FY 2004-2005); Phase II (FY 2005-2006); and Phase III (FY 2006-2007).

References
Mental disorders form an important public health priority, both in terms of the numbers of people suffering from mental disorders and due to the burden of these disorders in the community (1, 2). These conditions include the severe forms of mental disorders like psychoses, substance abuse and mental retardation. Of the health conditions contributing to the disability adjusted life years (DALYs), of the top 10 conditions, four are mental disorders.

**Objectives**: NMHP was started in 1982 with the following objectives (3):
1. To ensure availability and accessibility of minimum mental health care for all in the near foreseeable future, particularly to the most vulnerable sections of the population.
2. To encourage mental health knowledge and skills in general health care and social development.
3. To promote community participation in mental health service development and to stimulate self-help in the community.

NMHP envisaged integration of mental health care with general health care and welfare (4).

**Implementation**: A model for delivery of community based mental health care at the level of district was evolved and field-tested in Bellary district of Karnataka by NIMHANS between 1986-1995. This model was adapted as the District Mental Health Programme (DMHP) and it was implemented in 27 Districts across 22 states/UTs in the 9th five year plan beginning in the year 1996.

**Barriers to Implementation of the Programme:**
1. Shortage of trained manpower in the field of mental health.
2. Social stigma & lack of knowledge of psychiatric patients & their families.
3. Negative attitude of general practitioners, primary care physicians & other specialists.
4. NGOs/Voluntary Organizations do not find this field attractive.
5. Inadequate staff & infrastructure of mental hospitals and psychiatric wings of medical colleges.
6. Uneven distribution of sparse resources limiting the availability of mental health care to those living in urban areas.

**NMHP during the 10th Five Year Plan**
An evaluation of the NMHP was undertaken in 2003 and the programme was re-strategised to incorporate the following changes and it became from single pronged to a multi-pronged programme for effective reach and impact on mental illnesses. Main strategies of NMHP during the 10th plan period are as follows:
1. Expansion of DMHP to 100 districts all over the country.
2. Strengthening and Modernization of Mental Hospitals.
3. Up gradation of Psychiatry wings in the General Hospitals/Medical Colleges.
4. IEC Activities.
5. Research & Training in Mental Health for improving service delivery.

**District Mental Health Programme**
Its main objective is to provide basic mental health services to the community & to integrate these with other health services. The programme envisages a community based approach to the problem, which includes:
1. Training of mental health team at the identified nodal institutions.
2. Increase awareness about Mental Health problems.
3. Provide service for early detection & treatment of mental illnesses in the community (OPD/Indoor & follow up).
4. Provide valuable data & experience at the level of community at the state & center for future planning & improvement in service & research.
5. Strengthening and Modernization of Mental Hospitals.

**Identified thrust areas based on experience gained during 10th Five Year Plan**
1. To expand DMHP in an enlarged & more effective form.
2. Strengthening/modernization of remaining mental hospitals in order to modify from largely custodial role to therapeutic role.
3. Upgrading Departments of Psychiatry in Medical Colleges & enhancing the Psychiatric content of the medical curriculum at the UG/PG level.
4. Information, Education and Communication activities for creating awareness and reducing stigma.
5. Research & Training in Mental Health.
6. School Mental Health Programme.
7. Involvement of NGOs & Public Private Partnership in Community based care of mentally ill patients to fill the service gap in mental health delivery.

**Revised Framework of 11th Five Year Plan**
The revised approach for the programme in eleventh five year plan will recognize the importance of mental health care and will concentrate on providing counselling, medical services, and establishing helplines for all, especially people affected by calamities, riots and violence(5). The following actions are envisaged:
1. There is a need to empower the PHC doctor to offer care to mentally ill persons at the PHC.
2. There is a need to improve public awareness and facilitate community participation.
3. The psychiatric departments of Medical Colleges have to be upgraded to enhance better training opportunities.
4. Mental Hospitals that offer tertiary care to be improved to make treatment acceptable to the patients.

**Indicators in 11th plan**
1. No of districts that have successfully implemented DMHP
2. Improvement in service care in mental hospitals
3. Lowering of stigma attached to mental illnesses
4. Increased awareness of mental disorders
Strategies
1. Integrating mental health with primary health care through NMHP.
2. Providing of tertiary care institutions for treatment of mental disorders.
3. Eradicating stigmatization of mentally ill patients and protecting their rights through regulatory institutions like central and state mental health authorities.

Critical Appraisal
Successful implementation of mental health is a big challenge for all. With a large population of mentally ill in our country and very few psychiatrists being available, less than one psychiatrist is available for every 3 lacs population. The psychiatrist / population ratio in rural areas that account for 70% of country’s population, could well be under one for every million. There is a need to strengthen district mental health programmes and enhance its visibility at the grass root level. The man power gaps in the field of psychiatry are required to be filled up. The NGOs have to join hands in this programme and help in Community Based care of mentally ill. Preventive and promotive aspects of the programme have to be focused and looked in addition to treatment of serious mental ailments. IEC activities have to be strengthened and training of general practitioners in mental health is required to be emphasized upon. Optimal mix of different mental health care services is given in Table1(6,7). There is a need to strengthen district mental health programmes and enhance its visibility at the grass root level. The man power gaps in the field of psychiatry are required to be filled up. The NGOs have to join hands in this programme and help in Community Based care of mentally ill. Preventive and promotive aspects of the programme have to be focused and looked in addition to treatment of serious mental ailments. IEC activities have to be strengthened and training of general practitioners in mental health is required to be emphasized upon. Optimal mix of different mental health care services is given in Table1(6,7). There is a need to strengthen district mental health programmes and enhance its visibility at the grass root level.

Summary
NMHP was started in 1982 with the objective of ensuring availability and accessibility of minimum mental health care for all in the near foreseeable future, particularly to the most vulnerable sections of the population. To encourage mental health knowledge and skills in general health care and social development, To promote community participation in mental health service development and to stimulate self-help in the community. NMHP envisaged integration of mental health care with general health care and welfare.

The objectives of the programme in the eleventh five year plan are to empower the PHC doctor to offer care to mentally ill persons at the PHC, improve public awareness and facilitate community participation, upgradation of psychiatric departments of Medical Colleges have to be upgraded to enhance better training opportunities.

The strategies in the eleventh plan include integrating mental health with primary health care through NMHP; Providing of tertiary care institutions for treatment of mental disorders and eradicating stigmatization of mentally ill patients and protecting their rights through regulatory institutions like central and state mental health authorities.

References
3. Strengthening of existing cancer treatment facilities, which were inadequate.
4. Palliative care in terminal stage cancer.

Global

- Cancers cause 12 per cent of deaths
- Second leading cause of death in developed countries accounting 21 % (2.5m) of all deaths
- Second leading cause of death in developing countries accounting for 9.5% of all deaths (3.8m)

India

- One of the ten leading causes of death
- There are 1.5-2 million cancer cases at any given point of time
- 7 lakh new cases of cancer and 3 lakh deaths occur annually due to cancer
- The common sites for cancer in India are oral cavity, lungs, oesophagus and stomach in males and cervix, breast and oral cavity among females

Existing Schemes under National Cancer Control Programme (3) : This is shown in Table - 1.

The programme was revised in December 2004. There are 5 schemes under the revised programme (4)

1. Recognition of New Regional Cancer Centres (RCCs) : In order to augment comprehensive cancer care facilities in regions of the country lacking them, new RCCs are being recognized.

2. Strengthening of Existing RCCs : A one-time grant of Rs. 3.00 crores is provided to the existing RCCs in order to further strengthen the cancer treatment facilities in the existing centres.

3. Development of Oncology wing : The scheme aims to correct the geographical imbalance by providing financial assistance to Government institutions (Medical Colleges as well as Government Hospitals) for enhancing the cancer care facilities.

4. District Cancer Control Programme (DCCP) : The DCCP will be implemented by the Nodal Agency, which may be an RCC or an Oncology Wing. The aim is to strengthen District Hospitals in 2-3 congruent districts for early detection and appropriate treatment or referral.

5. Decentralized NGO Scheme : This scheme has been devised to promote prevention and early detection of cancers. Non-Governmental Organizations (NGO) will implement these activities under the coordination of the Nodal Agency, which will be an RCC or an Oncology Wing.

District Cancer Control Programme

This programme was launched in 1990-91 and under this programme each state and union territory is advised to prepare their projects on health education, early detection, and pain relief measures. For this they can get up to Rs. 15 lakhs one time assistance and Rs. 10 lakhs for four years recurring assistance. The district programme has five elements:

1. Health education.
2. Early detection.
3. Training of medical & paramedical personnel.
4. Palliative treatment and pain relief.
5. Coordination and monitoring.

The District programmes are linked with Regional Cancer Centres/ Government Hospitals/ Medical Colleges. For effective functioning each district where programme has started to have one District Cancer Society that is chaired by local Collector/ Chief Medical Officer. Other members are Dean of medical college, Zila parishad representative, NGO representative etc.

National Cancer Registry Programme (NCRP)

National Cancer Registry Programme was launched in 1982 by Indian Council of Medical Research (ICMR) to provide true information on cancer prevalence and incidence. There are five population-based urban cancer registries in Mumbai, Bangalore, Chennai, Bhopal, Delhi and a rural registry at Barsi in Maharashtra and six hospital-based registries at Chandigarh, Dibrugarh, Thiruvananthapuam, Bangalore, Mumbai and Chennai. The NCRP provides data on regional difference and time

<table>
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<th>Table - 1 : Existing Schemes under National Cancer Control Programme</th>
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<tr>
<td><strong>Scheme</strong></td>
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<tr>
<td>Financial Assistance to Voluntary Organisations</td>
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<tr>
<td>District Cancer Control Scheme</td>
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<tr>
<td>Cobalt Therapy Installation</td>
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<tr>
<td>Development of Oncology Wings in Govt. Medical College Hospitals</td>
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<td>Regional cancer institutes</td>
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trends in cancer prevalence so that appropriate modifications in the ongoing programmes could be made.

**Objectives of NCRP**
1. To generate authentic data on the magnitude of cancer problem in India.
2. To undertake epidemiological investigations and advice control measures.

In the XI five year plan, the focus will be on community based cancer prevention and control strategies. We are in the process of establishing OncoNET India, a network connecting 25 Regional Cancer Centres and 100 peripheral centres thus facilitating telemedicine services and continued medical education.

**Critical appraisal**
The programme however has mainly contributed to the development of radiation oncology services rather than making any headway in the direction of prevention and early detection (5). There is no organised screening programme for any of the common cancers in the country. Most cancer centers provide only opportunistic screening services. Research and training was one of the objectives of the programme but was neglected during implementation of the programme.

**Summary**
National Cancer Control Programme (NCCP) was launched in 1975-76. The goals & objectives are primary prevention of cancers by health education regarding hazards of tobacco consumption and necessity of genital hygiene for prevention of cervical cancer; Secondary prevention i.e. early detection and diagnosis of cancers, for example, cancer of cervix, breast cancer and of the oro-pharyngeal cancer by screening methods and patients’ education on self examination methods, Strengthening of existing cancer treatment facilities and palliative care in terminal stage cancer.

Existing Schemes under National Cancer Control Programme are Financial Assistance to Voluntary Organisations, District Cancer Control Scheme, Cobalt Therapy Installation, Development of Oncology Wings in Govt. Medical College Hospitals and Recognition of New Regional Cancer Centres. The elements of district programme are Health education, Early detection, Training of medical & paramedical personnel, Palliative treatment and pain relief and coordination and monitoring.

National Cancer Registry Programme was launched in 1982 by Indian Council of Medical Research (ICMR) to provide true information on cancer prevalence and incidence. The NCRP provides data on regional difference and time trends in cancer prevalence so that appropriate modifications in the ongoing programmes could be made.

**References:**
5. Dinshaw KA, Shastri SS, Patil SS Cancer Control Programme In India: Challenges for the new millennium Health Administrator Vol: XVII, Number 1: 10-13

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**National Programme for Prevention & Control of Diabetes, Cardiovascular Diseases & Stroke**

*Puja Dudeja & Ashok K. Jindal*

The World Health Report of 2002 states that Cardiovascular Diseases (CVD) will be the largest cause of death and disability in India by 2020. Non Communicable Diseases (NCDs), especially Cardiovascular Diseases (CVDs), Diabetes Mellitus, Cancer, Stroke and Chronic Lung Diseases have emerged as major public health problems in India, due to an ageing population and environmentally driven changes in behaviour. It is estimated that in 2005, NCDs accounted for 5,466,000 (53%) of all deaths (10,362,000) in India. The estimated burden of common NCDs are: 2.4 million Ischemic Heart Diseases, 37.8 million diabetes, 2.4 million cancers and 0.93 million stroke. Compared with all other countries, India suffers the highest loss in potentially productive years of life, due to deaths from cardiovascular disease in people aged 35-64 years (9.2 million years lost in 2000). The common risk factors are Tobacco, Alcohol, Diet and Physical inactivity.

**Rationale for Having a Common Programme for the Prevention and Control of Diabetes, CVD and Stroke**
1. Diabetes is an important risk factor for both the major forms of cardiovascular disease (coronary heart disease and stroke).
2. CVD is the major cause of death and disability in persons with diabetes.
3. Common risk factors underlie CVD and diabetes: unhealthy diets, physical inactivity and overweight are common to both.
4. High blood pressure often precedes and predicts the onset of clinical diabetes by several years. This has led to ‘hypertension’ being regarded as a pre-diabetic condition.
5. Clinical trials have shown that, mortality reduction and increased survival are better achieved by blood pressure control than even by blood sugar control, in persons with diabetes.
6. Persons with CVD or diabetes require similar lifestyle therapy and often similar drug therapy for prevention of complications (diet; physical activity; smoking cessation; cholesterol lowering drugs; aspirin; ACE inhibitors; other blood pressure lowering drugs).

7. Persons with diabetes frequently need to be screened for CVD and risk factors of CVD.

8. Proven lifestyle interventions which can prevent the onset of diabetes (diet and physical activity) are similar to those proven to reduce the risk of developing hypertension, coronary heart disease or stroke.

The strategic approaches and operational elements for prevention and control of CVD and diabetes are thus similar or closely interlinked, whether it is primordial prevention, primary prevention or secondary prevention (reducing the risk of complications after the onset of disease).

**Implementation**: The NPDCS will be implemented in a phased manner with a pilot being done in the Preparatory Phase 2006-07. Subsequently, the programme would be implemented across the country through select institutions over the XI Five Year Plan.

**Aim of the Programme**: Prevention and control of common NCD risk factors through an integrated approach and reduction of premature morbidity and mortality from DM, CVD and Stroke.

**Long term objectives**
1. Reduce prevalence of risk factors of common NCDs.
2. Reduce morbidity and mortality due to Diabetes, Cardiovascular diseases and Stroke.
3. Building capacity of health systems to tackle NCDs and improvement of quality of care.

**Immediate objectives**
1. Primary prevention of major Non Communicable Diseases through Health Promotion.
2. Surveillance of NCDs and their risk factors in the population.
3. Capacity enhancement of health professionals and health systems for diagnosis and appropriate management of NCDs and their risk factors.
4. Reduction of risk factors of NCDs in the population.
5. Establish National Guidelines for management of NCDs.
6. Development of strategies/policies for prevention of NCDs in the country through Inter ministerial collaborations/coordination.
7. Community empowerment for prevention of NCDs.

**Summary**
The NPDCS will be implemented in a phased manner with a pilot being done in the Preparatory Phase 2006-07. Subsequently, the programme would be implemented across the country through select institutions over the XI Five Year Plan. The aim of the Programme Prevention and control of common NCD risk factors through an integrated approach and reduction of premature morbidity and mortality from DM, CVD and Stroke. In the long term the programme envisages, reduction in prevalence of risk factors of common NCDs, reduction in morbidity and mortality due to Diabetes, Cardiovascular diseases and Stroke and building capacity of health systems to tackle NCDs and improvement of quality of care.

**References**

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**National Iodine Deficiency Diseases Control Programme**

**Puja Dudeja & Ashok K. Jindal**

Iodine, an essential micronutrient with daily requirement of 100-150 mg, plays an important role in normal human growth and development. It has been widely recognized that deficiency of iodine not only contributes to goitre but also is an important risk factor for preventable mental retardation; it affects reproductive functions and impairs child’s learning ability. The disorders produced as a result of nutritional iodine deficiency are classified as “Iodine Deficiency Disorders (IDD) or IDD syndromes” (1).

The History of Iodine Deficiency Control Programme in our country is given in Table1.

**Table 1**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1.</td>
<td>1954-1962</td>
<td>Prospective study on iodine deficiency disorders in Kangra valley</td>
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<td>2.</td>
<td>1962</td>
<td>National Goitre Control Programme (NGCP)</td>
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<td>3.</td>
<td>1982</td>
<td>Technical goitre control review committee recommended to declare entire country goitre prone</td>
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<td>4.</td>
<td>1983</td>
<td>Universal iodisation of salt in the country</td>
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<td>5.</td>
<td>1992</td>
<td>NGCP was redesignated as National Iodine Deficiency Disorders Control Programme* (NIDDCP)</td>
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</table>

*The title has been changed in view of the wide spectrum of Iodine Deficiency Disorders like mental and physical retardation, deaf mutism, cretinism, high rates of abortion etc. and the Govt. commitment to overcome all other Iodine Deficiency Disorders apart from Goitre, through Universal iodisation of salt.
Programme Implementation (2)

**Responsibilities**: It is a 100 percent centrally assisted programme. The Ministry of health and Family Welfare is the nodal ministry for policy decisions on NIDDCP. The central Nutrition and Iodine Deficiency Disorders Cell at the Directorate General of Health Services is responsible for the implementation of NIDDCP. The Salt Commissioner's office under the Ministry of Industry is responsible for licensing, production and distribution of iodated salt to States/UTs. This office is also responsible for monitoring the quality of iodated salt at production level and distribution of same in the country. The Salt Commissioner in consultation with the Ministry of Railways arranges for movement of iodated salt from production centres to the states/UTs on a priority basis. The best indicator for monitoring the impact of Iodine Deficiency Disorders Control Programme is neonatal hypothyroidism.

The Government's goal of NIDDCP is to reduce the prevalence of iodine deficiency disorders below 10 percent in the entire country by 2012 AD.

**The Objectives of NIDDCP are as under**
1. Survey to assess the magnitude of the IDD
2. Supply of iodated salt in place of common salt
3. Resurvey after every 5 years to assess the magnitude of the IDD and the impact of iodated salt on it
4. Laboratory monitoring of iodated salt and urinary iodine excretion
5. Health education and publicity

**Other components of the strategy are**
1. Testing of salt at manufacturing level.
2. Testing of salt at consumption level.
3. Testing of urine samples at District/State level.
4. Monitoring the Thyroid status of newborns through screening of cord blood samples.
5. Strengthening of Central Iodine Deficiency Disorder Control Cell at the Headquarters.
6. Strengthening of Training including establishment of Iodine Deficiency Disorder Training Programme.

**IDD Control Cell**: Each state has an IDD Control Cell which carries out periodic surveys regarding the prevalence of IDD and coordinates with central IDD cell. The functions of this cell are as under:
1. Checking iodine levels of the salt with wholesalers and retailers within the state and coordinating with food and civil supplies department.
2. The distribution of iodated salt within the state through open market and public distribution system.
3. Creating demand for iodated salt.
4. Monitoring consumption of iodated salt.
5. Conducting IDD surveys to identify the magnitude of IDD in various districts.
6. Conducting training.
7. Dissemination of information, education and communication.

**Benefits of IDD control (3)**: IDD is one of the three micronutrient deficiencies declared to be eliminated by WHO, the other two being vitamin A deficiency and iron deficiency. Apart from minimizing human misery, IDD control makes it possible to have better education to the children, high labour productivity and better quality of life. See Table - 2.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Reduction</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mental deficiency</td>
<td>Higher work output in school and work place</td>
</tr>
<tr>
<td>2</td>
<td>Autism</td>
<td>Reduced cost of custodial and medical care</td>
</tr>
<tr>
<td>3</td>
<td>Spastic diplegia</td>
<td>Reduced educational cost from reduced absenteeism and grade repetition and higher academic achievement by the student</td>
</tr>
</tbody>
</table>

**Critical Appraisal**: IDD control cells have not been established in all the states. The process of setting up iodine monitoring laboratory for estimation of iodine content of salt and urinary iodine excretion is slow. Lack of resources and trained manpower restricts the quality control of iodated salt at the consumer level. A lot needs to be done to create a felt need for the programme activities among the masses. Medical and para medical manpower needs to be trained on the subject.

**Summary**

The disorders produced as a result of nutritional iodine deficiency are classified as “Iodine Deficiency Disorders (IDD) or IDD syndromes”. In 1962 National Goitre Control Programme was launched, however the title has been changed in 1992 to NIDDCP to cover the wide spectrum of Iodine Deficiency Disorders.

The goal of NIDDCP are to reduce the prevalence of iodine deficiency disorders below 10 percent in the entire country by 2012 AD. The Objectives of NIDDCP are to survey to assess the magnitude of the IDD, supply of iodated salt in place of common salt, resurvey after every 5 years to assess the magnitude of the IDD and the impact of iodated salt on it, laboratory monitoring of iodated salt and urinary iodine excretion and Health education and publicity. IDD Control Cell in each state has been established which carries out periodic surveys regarding the prevalence of IDD and coordinates with central IDD cell.

**References**
Hearing loss is the most common sensory deficit in humans today. As per WHO estimates in India, there are approximately 63 million people, who are suffering from significant auditory impairment; this places the estimated prevalence at 6.3% in Indian population; of these, a large percentage is children between the ages of 0 to 14 years. With such a large number of hearing impaired young Indians, it amounts to a severe loss of productivity, both physical and economic.

**Objectives**

1. To prevent the avoidable hearing loss on account of disease or injury.
2. Early identification, diagnosis and treatment of ear problems responsible for hearing loss and deafness.
3. To medically rehabilitate persons of all age groups, suffering with deafness.
4. To strengthen the existing inter-sectoral linkages for continuity of the rehabilitation programme, for persons with deafness.
5. To develop institutional capacity for ear care services by providing support for equipment & material and training personnel.

**Long term objective**: To prevent and control major causes of hearing impairment and deafness, so as to reduce the total disease burden by 25% of the existing burden by the end of eleventh five year plan.

**Strategies**

1. To strengthen the service delivery including rehabilitation.
2. To develop human resource for ear care.
3. To promote outreach activities and public awareness through appropriate and effective IEC strategies with special emphasis on prevention of deafness.
4. To develop institutional capacity of the district hospitals, community health centers and primary health centers, selected under the project.

**Programme Execution & Expansion (1)**

A pilot project, to be conducted in 25 districts derived from 10 states and one union territory, is already in the first phase of implementation. This will run from 2006 to 2008. In the remaining four years of the 11th Five year plan, it is proposed to expand this programme to include a total of 203 districts covering all the states and Union territories of India by 2012. The expansion will be done in a phased manner, with inclusion of 45 new districts each year. At the end of the plan, it is proposed to cover 50% of the districts in all the pilot states (except Uttar Pradesh) and 25% of the districts in all the other states/UTs.

**Components of the Programme**

1. **Manpower training and development**: For prevention, early identification and management of hearing impaired and deafness cases, training would be provided from medical college level specialists (ENT and Audiology) to grass root level workers. The training of PHC doctors and health functionaries would be provided by Rehabilitation Council of India.

2. **Capacity building**: for the district hospital, community health centers and primary health center in respect of ENT/ Audiology infrastructure.

3. **Service provision including rehabilitation**: Screening camps for early detection of hearing impairment and deafness, management of hearing and speech impaired cases and rehabilitation (including provision of hearing aids), at different levels of health care delivery system.

4. **Awareness generation through IEC activities**: For early identification of hearing impaired, especially children so that timely management of such cases is possible and to remove the stigma attached to deafness.

**Expected Benefits of the Programme**

The programme is expected to generate the following benefits in the short as well as in the long run:

1. Large scale direct benefit of various services like prevention, early identification, treatment, referral, rehabilitation etc. for hearing impairment and deafness as the primary health center/community health centers/district hospitals largely cater to their need.
2. Decrease in the magnitude of hearing impaired persons.
3. Decrease in the severity/extent of ear morbidity or hearing impairment in large number of cases.
4. Improved service network for the persons with ear morbidity/hearing impairment in the states and districts covered under the project.
5. Awareness creation among the health workers/grassroot level workers through the primary health centre medical officers and district officers which will percolate to the lowest level as the lower level health workers function within the community.
6. Larger community participation to prevent hearing loss through panchayati raj institutions, mahila mandals, village bodies and also creation of a collective responsibility framework in the broad spectrum of the society.
7. Leadership building in the primary health centre medical officers to help create better sensitization in the grassroot level which will ultimately ensure better implementation of the programme.

**Summary**

The programme is a part of eleventh five year plan with the objective of preventing and controlling major causes of hearing impairment and deafness, so as to reduce the total disease burden by 25% of the existing burden by the end of eleventh five year plan. The Components of the Programme are Manpower training and development to grass root level workers, Capacity building - for the district hospital, community health centers and primary health center in respect of ENT/ Audiology infrastructure, Service provision including rehabilitation in the form of Screening camps, management of hearing and speech impaired cases and rehabilitation (including provision of hearing aids), at different levels of health care delivery system and awareness generation through IEC activities.

**References**

National Programme for Control of Blindness was launched in the year 1976 as a 100% centrally sponsored scheme with the goal to reduce the prevalence of blindness from 1.4% to 0.3%. India was the first country to launch the National Programme for Control of Blindness. Due to a large population base and increased life expectancy, the number of blind particularly due to senile disorders like Cataract, Glaucoma, Diabetic Retinopathy etc. is expected to increase. Among the emerging causes of blindness, diabetic retinopathy and glaucoma need special mention. 2 percent of India's population is expected to be diabetic. 20 percent of diabetics have diabetic retinopathy and this number is likely to grow in future. India is committed to reduce the burden of avoidable blindness by the year 2020 by adopting strategies advocated for Vision 2020: The Right to Sight. The prevalence and causes of blindness and future goals are given in Table - 1.

Objectives
The objectives of the programme are (1):
1. To reduce the backlog of blindness through identification and treatment of blind.
2. To develop Eye Care facilities in every district.
3. To develop human resources for providing Eye Care Services.
4. To improve quality of service delivery.
5. To secure participation of Voluntary Organizations in eye care.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population Prevalence (%)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971-74</td>
<td>1.38</td>
<td>Cataract was leading cause (75% of blindness)</td>
</tr>
<tr>
<td>1986-89</td>
<td>1.49</td>
<td>Cataract blindness increased to 80%. Trachoma and Vitamin A related blindness reduced.</td>
</tr>
<tr>
<td>2001-04</td>
<td>1.10</td>
<td>Cataract reduced to 63%. Refractive error second leading cause (20%). Glaucoma and diabetic retinopathy emerging causes.</td>
</tr>
<tr>
<td>2007</td>
<td>--</td>
<td>Goal for 10th plan: 0.8%</td>
</tr>
<tr>
<td>2010</td>
<td>--</td>
<td>Goal under “Vision 2020 Initiative”: 0.5%</td>
</tr>
</tbody>
</table>

Programme Implementation
India is a vast country having 28 States and 7 Union Territories with 593 districts, with an average population of nearly two million per district. The programme implementation has been decentralized up to the district level where District Blindness Control Societies (DBCS) have been set up as the nodal agencies. Members of the DBCS include officials from District Administration, Health, Education and Social Welfare Departments, media, community leaders and NGOs/Private Sectors involved in eye care. These societies directly receive funds from the Government. The concept is to establish a bottom up approach in dealing with blindness through multisectoral and coordinated efforts. These societies are responsible for identifying blind in every village, organize diagnostic screening camps at suitable locations, arrange transportation of patients to the designated facilities, and ensure follow up. The states have State ophthalmic cell under directorate of health services and state health societies. At the apex National institute of ophthalmology (Dr. Rajendra Prasad Centre for ophthalmic sciences in AIIMS, New Delhi) has been established. Various other regional institutes have been developed. Medical colleges have been upgraded under NPCB and few of them are providing training to ophthalmic assistants.

School Eye Screening Programme: Under this the children aged 10-14 years are being screened by trained teachers and those suspected to have refractory error are seen by ophthalmic assistants and corrective spectacles are prescribed.

Constraints
1. Inequitable distribution of eye surgeons: There are an estimated 12,000 eye surgeons in India with an average of 1 surgeon for 1,00,000 population. There is a wide disparity between urban and rural areas. This disparity has led to significant differences in services offered / sought by the public.
2. Suboptimal utilization of human resources: It is estimated that about 40 percent of eye surgeons in government section are non operating surgeons. They are either practicing medical ophthalmology/ refraction services or providing general medical care.
3. Inadequate number of paramedical eye personnel
4. Suboptimal coverage: Govt. facilities, NGO and private sector are usually located in urban/ periurban areas. Geographically remote and socioeconomically backward population remains underserved.
5. Over emphasis on cataract: The problem of corneal blindness, Glaucoma and diabetic retinopathy has not been adequately addressed. Similarly pediatric ophthalmology and low vision has received low priority.
6. Lack of public awareness: Rural, illiterate and under privileged population are not fully aware about various interventions that are available to restore vision. Integration of the programme is limited and therefore rural health workers are also not motivating potential beneficiaries.

Major challenges ahead
1. In-depth study of epidemiology of blindness
2. Comprehensive eye care programme
3. Reaching the underserved population
4. Development of sustainable infrastructure
5. Technological advancement in eye care
6. Human resource development
7. Quality of care
Strategies during XI plan
1. Strengthening advocacy and motivation by involvement of village panchayat, local bodies, grass root NGOs, women group and formal and informal leaders.
2. Human resource development.
3. Infrastructure development.
4. Grant in aid to state blindness control societies and district blindness control societies.
5. Involvement of private practitioners.
6. Increased IEC activities.

Vision 2020 - The Right to Sight Initiative: The global initiative, “VISION 2020: The Right to Sight” is a collaborative response initiated by the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB) to combat the gigantic problem of blindness in the world. It was launched in Geneva in 1999. The diseases covered under Vision 2020 are (2):
1. Cataract
2. Trachoma
3. Onchocerciasis (not a problem in India)
4. Childhood blindness
5. Refractive Errors and Low Vision

These conditions have been chosen on the basis of their contribution to the burden of blindness and the feasibility and affordability of interventions to control them. Each country will decide on its priorities based on the magnitude of specific blinding conditions in that country. Under this initiative, five basic strategies to combat blindness are:
1. Disease prevention and control.
2. Training of personnel.
3. Strengthening the existing eye care infrastructure.
4. Use of appropriate and affordable technology.
5. Mobilization of resources.

Vision 2020 will serve as a common platform to facilitate a focused and coordinated functioning of all the partners in eliminating avoidable blindness by the year 2020. It will further develop and strengthen the primary health care approach to the problem of avoidable blindness. Broad regional alliances will be sought to eventually develop a global partnership for eye health.

Cataract: Cataract is the major cause of blindness in the world. The aim is Elimination of cataract blindness (person with vision less than 3/60 in both eyes).

Trachoma: Trachoma is the second cause of blindness in sub-Saharan Africa, China and the Middle-Eastern countries. The aim is to eliminate blindness due to trachoma. Trachoma is to be controlled through the implementation of the SAFE strategy integrated within primary health care in all communities identified as having blinding trachoma within a country. This includes the following:
i) Assessment to identify communities with blinding trachoma.
ii) Delivery of community-based trichiasis Surgery by trained paramedical staff (S of SAFE).
iii) Antibiotic treatment (either tetracycline eye ointment or oral azithromycin) for children with active disease (A of SAFE).
iv) Promotion of Facial cleanliness (F of SAFE) and Environmental improvement (E of SAFE), including personal hygiene and community sanitation as part of primary health care.

Childhood Blindness

Vitamin A deficiency: To achieve and sustain the elimination of blindness due to vitamin A deficiency.

Surgically avoidable causes: To control blindness in children from cataract, glaucoma and retinopathy of prematurity (ROP)

Refractive Errors and Low Vision: Spectacles are an essential part of the treatment of many eye patients. Their provision is therefore an integral part of eye care delivery. Elimination of visual impairment (vision less than 6/18) and blindness due to refractive errors or other causes of low vision. This aim goes beyond the elimination of blindness and also includes the provision of services for individuals with low vision.

Implementation: The proposed structure for implementation of Vision 2020 is vision centre at the primary level, Service centre at the secondary level and Training centre and centre of excellence at the tertiary level.

Summary
National Programme for Control of Blindness was launched in the year 1976. India was the first country to launch the National Programme for Control of Blindness. The objectives are to reduce the backlog of blindness through identification and treatment of blind, to develop Eye Care facilities in every district, to develop human resources for providing Eye Care Services, to improve quality of service delivery and to secure participation of Voluntary Organizations in eye care.

The programme implementation has been decentralized up to the district level where District Blindness Control Societies (DBCS) have been set up as the nodal agencies. These societies are responsible for identifying blind in every village, organize diagnostic screening camps at suitable locations, arrange transportation of patients to the designated facilities, and ensure follow up.

The Constraints for implementation are inequitable distribution of eye surgeons, suboptimal utilization of human resources, suboptimal coverage, over emphasis on cataract and lack of public awareness. The global initiative, “VISION 2020: The Right to Sight” is a collaborative response initiated by the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB) to combat the gigantic problem of blindness in the world. It was launched in Geneva in 1999. The diseases covered under Vision 2020 are Cataract, Trachoma, Onchocerciasis, Childhood blindness and Refractive Errors and Low Vision.

Under this initiative, five basic strategies to combat blindness are disease prevention and control, training of personnel, strengthening the existing eye care infrastructure, use of appropriate and affordable technology and mobilization of resources.

Further Suggested Reading
Other Important National Health Programmes

Puja Dudeja & Ashok K. Jindal

(A) National Oral Health Programme

Oral diseases such as dental caries, periodontal diseases, malocclusion and oral cancers constitute an important public health problem in India today. Oral diseases have a great impact on systemic health and is now established that periodontal diseases has far reaching effects on various systemic diseases like low birth weight, Diabetes, Heart disease, Respiratory diseases, Stroke, Atherosclerosis etc. Oral cancer prevalence is highest in India, causing high morbidity and mortality. National oral health program is a pilot project on oral health started in the year 1999 by DGHS and the Ministry of Health and Family Welfare. Under this project, All India Institute of Medical Sciences has been made a nodal agency.

Programme targets: These are given in Table - 1.

<table>
<thead>
<tr>
<th>Diseases</th>
<th>Age Group</th>
<th>Prevalence (%) 2005</th>
<th>Status by 2012(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Caries</td>
<td>All</td>
<td>40-50</td>
<td>&lt;30</td>
</tr>
<tr>
<td>Periodontal</td>
<td>15+</td>
<td>45</td>
<td>&lt;35</td>
</tr>
<tr>
<td>malocclusion</td>
<td>9-14</td>
<td>32.5</td>
<td>25</td>
</tr>
<tr>
<td>Oral cancer</td>
<td>35+</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Fluorosis</td>
<td>All</td>
<td>5.5</td>
<td>4</td>
</tr>
</tbody>
</table>

Components

1. Oral Health Education by involving health workers, school children, teachers and mass media.
2. Production of IEC Material for awareness generation.
3. Formulation of modules for trainers (Dental surgeons), Health Workers and School Teachers.

The main focus of this project is on primary prevention which is the most cost effective, appropriate and desirable.

The project was reviewed by National Institute for Health and Family Welfare in 2004 and following recommendations were made:

1. The program to be divided into several implementation phases giving reasonable time frames and goals to be achieved in each phase.
2. Centre to provide technical support to the states by forming various committees and one time financial support.
3. The states to be responsible for implementation of the programme by involving the education department, school teachers, health workers and by developing adequate infrastructure and facilities.
4. Modification of the existing IEC material with respect to the local situation in the states and in consultation with agencies like Central Health Education Bureau, Indian Institute of Mass communication, media division of MoHFW. The messages of oral and dental health should be merged with other IEC materials being developed by the centre and state governments.

Strategies for future

1. Oral Health Education: Use of primary health care approach: It is recommended to spread the messages of oral health care and strengthening of existing infrastructure. Health care workers to be an important part of the programme in spreading health awareness. Health care workers to be trained in providing pain relief and refer the case for further investigation and treatment.
   - Development of IEC material and use of mass media in spreading awareness.
   - Involvement of NGOs in delivery of oral health education.
   - Networking with other departments like Dept. of Education and Social Welfare in imparting oral health education to the school children.

2. Manpower and infrastructure development for primary and secondary prevention of oral diseases: Mobile Dental Clinics to provide on the spot diagnostic, preventive, interceptive and curative services to the people and school children in far flung rural areas of the state, should be made available.

3. Strengthening school health services: Good oral habits and practices learnt early in life would help reduce the disease burden later in life.

Critical Appraisal

Oral health care has not been given sufficient importance in our country. Most of the district hospitals have the post of a dental surgeon but they lack in equipment, machinery and material. Even when the equipment exists, the maintenance is poor. Oral health has not been discussed in National Health Policy 2002 and National Rural Health Mission also does not have any mention of oral health services either. The treatment of Oro-dental diseases is enormously expensive and no Govt. across the globe can bear the cost for dental treatment for its entire population. It is suggested that Govt. should bear the cost for primary and secondary prevention completely and may impose cost to cost pricing for the treatment part at all levels.

(B) National Programme for Prevention of Fluorosis

Fluorosis, a public health problem, is caused by excess intake of fluorides through drinking water/food products/industrial pollutants, over a long period. It results in major health disorders like dental fluorosis, skeletal fluorosis and non skeletal fluorosis besides inducing ageing.

Level of fluoride: The fluoride content in drinking water in India is about 0.5mg/l but in fluorosis endemic areas, the natural water have been found to contain as much as 3-12 mg/l of fluoride. A concentration of 0.5 - 0.8 mg/l is considered safe limit in India. In temperate climate where intake of water is low, the optimum level of fluorine in drinking water is accepted as 1mg/l (2).

Problem statement: Fluoride endemcity has been reported in 196 districts of 19 states & UTs of the country. The affected
population with fluorosis is about 66 million in the country. Based on excess level of fluoride content in No. of district, the States/UTs have been classified as mild, moderate and severe endemic State/UTs of Fluorosis. States like Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Uttar Pradesh, Tamil Nadu, West Bengal are affected from fluorosis. In all these states, the drinking water has high fluoride content.

**Why a National Programme?**

At present there is no National level Programme for Fluorosis Control. Data regarding prevalence of Fluorosis is based on studies conducted by different groups over a period of time. Surveys at a National level regarding prevalence have not been conducted so far. For provision of safe drinking water, Government of India supplemetns the efforts of State Government and UTs by providing funds under the Accelerated Rural Water Supply Programme (ARWSP). The chairman of National Human Rights Commission reviewed the fluorosis situation in the country and recommended a National Programme for the same in the XI plan.

**Objectives**

1. To assess the intake of fluoride by assessing its presence in all sources of drinking water, consumption of foods rich in fluoride and intake through industrial emissions at the district in the endemic states.
2. To coordinate the activities in relation to fluorosis being carried out in various departments/Ministries like M/o rural Development, D/o Drinking Water, RGNWDM, Education, Social Welfare, NICD, M/o H & FW.
3. To impart training to medical doctors and paramedicals of the districts for early diagnosis of Fluorosis.
4. To develop IEC material from Policy Level to the community personnel.

**Strategies**

The following strategies are to be adopted:

1. Conducting fluoride survey regarding fluoride level in all drinking water sources, food product sources, and industrial emissions if there is industry in the project district.
3. Establishment of testing of fluoride facility in water, food and blood in each district of programme area.
4. Imparting training programme to medical and paramedicals of the programme districts to diagnose Fluorosis cases including deformity cases.
5. To develop extensive IEC material in relation of Fluorosis.
6. To implement the decision of Central Programme Implementation Committee under DGHS.

**Project Area**

In the beginning, the programme for prevention and control of Fluorosis, can be implemented in 5 districts selected from each of the following zones of the country based on prevalence of fluorosis, geographical distribution, weather, etc. on a pilot basis.

- (a) Southern Zone (One district)
- (b) Western Zone (One district)
- (c) Northern Zone (One district)
- (d) Eastern Zone (One district)
- (e) Central Zone (One district)

The Pilot Programme will be implemented in first two years time including impact evaluation of various strategies/components of the programme. Third year onwards, the Programme will be expanded to cover about 100 districts of 19 States depending on availability of funds.

**C Programme for the Elderly**

India, as the second most populous country, has 76.6 million people at or over the age of sixty (2001 Census) constituting about 7.7% of its total population. Life expectancy has increased from around 59 years in the 1970s to 65 years currently, and is expected to cross 70 years by the year 2020. The proportion of elderly in India is set to rise dramatically in the next few decades.

**Care of Elderly**

The Health of the elderly requires comprehensive care with preventive, curative & rehabilitative services. Unlike the developed countries, India does not have a well structured Geriatric Health services, thus leading to a relatively ad hoc system of health care delivery for the elderly. In this scenario, there is a need for a specialized geriatric health service, which recognizes the elderly as being a vulnerable population.

**Programme Vision**

A society where persons aged 60 years and above will have the peace of mind and sense of security that arises from the knowledge that they have access to quality health care at all times.

**Programme Mission**

A community based holistic care system, which offers every citizen above the age of 60 years the opportunity to participate in a health care programme, which includes preventive, curative and emergency health care services of high quality.

**Goal**

To improve the access to promotive, preventive, curative and emergency health care among elderly persons.

**Objectives**

1. Provide comprehensive health care to the elderly by preventive, curative and rehabilitative services.
2. Train Health professionals in Geriatrics, including supportive care and Rehabilitation.
3. Develop scientific solutions to specific elderly health problems by research into Geriatric and Gerontology.

**Programme Implementation**

The national program for health care of the elderly will be a centrally funded program. The entire Geriatric population will be covered by the 2 national institutes of Ageing, one in North India and the other in South India, eight identified regional centres (each implementing Geriatric Health Care in about 3 to 4 states). Under the control of these two institutes, one teaching medical college/Tertiary level hospital in each state to develop the Geriatric Unit which will include the Outpatient services, Acute care, Subacute Care and Long term care units. The health professionals trained here will be sent to the district level centres for Geriatric Health Care delivery.
(D) Nutritional Programmes & Integrated Child Development Services (ICDS)

Details of various National Nutritional Programmes and ICDS programme are discussed in an exclusive chapter in the section on nutrition.

(E) Water Supply and Sanitation Programme

**Evolution**: The Ministry of Rural Development has been taking initiatives to provide safe drinking water in all rural habitations. The National Water Supply and Sanitation Programme was initiated in 1954 with the objective of providing safe water supply and adequate drainage facilities to the entire urban and rural population of the country. In 1972 a special programme known as Accelerated Rural Water Supply Programme (ARWSP) was started to supplement the national water supply and sanitation programme. The Govt of India launched International Drinking water Supply and Sanitation Decade Programme in 1981. Other programmes like Prime Minister’s Gramodaya Yojana - Rural Drinking Water (PMGY-RDW), have been implemented to resolve drinking water crisis in rural habitations. These programmes also give importance to rainwater harvesting, sustainability of sources and community participation.

**Accelerated Rural Water Supply Programme (ARWSP)**

**Objectives**
1. To ensure coverage of all rural habitations and especially reach the unreached with access to safe drinking water;
2. To ensure sustainability of the systems and sources;
3. To tackle the problems of water quality in affected habitations;
4. To institutionalize the sector reform initiative in rural water supply sector.

**Programme Implementation**

Rural water supply is a State subject. States have been taking up projects and schemes from their own resources for the provision of safe drinking water. State Governments decide the implementing agencies for the programme. The agencies may be the Public Health and Engineering Department (PHED), Rural Development Department or the Panchayati Raj Department. Implementation is also taken up by the Government Boards / Nigams / Agencies in a few States. All projects and schemes proposed under ARWSP are approved by the State Level Scheme Sanctioning Committee.

**Role of Panchayats**: As per the 73rd Amendment to the Constitution of India, the subject of rural water supply is vested with the Panchayati Raj Institutions (PRIs). The Panchayats are to play a major role in providing safe drinking water and managing the systems and sources in their respective areas. They can be involved in the implementation of schemes, particularly in selecting the location of handpumps, standposts and spot sources.

**Sub-Mission**: Sub-Mission programmes of the Government of India were launched with the objective to provide safe drinking water facilities in rural habitations affected by water quality problems like fluorosis, arsenic, brackishness, excess iron, nitrate etc. The States undertake these projects. For ensuring source sustainability through rainwater harvesting, artificial recharge etc. State Governments also use funds under Sub-Mission. Powers have been delegated to the States for sanctioning Sub-Mission projects.

**Prime Minister’s Gramodaya Yojana (Rural Drinking Water)**

Prime Minister’s Gramodaya Yojana (PMGY) was launched by the Prime Minister in 2000-01.

**Goal**: To provide basic necessities to the people in rural areas for improvement of the physical quality of life.

**Components**: Primary education, Primary health, Rural shelter, Rural drinking water, nutrition and rural electrification are the six components of PMGY. 10 per cent of the PMGY funds have been earmarked for rural water supply.

**Objectives**
1. Emphasize on taking up projects and schemes for water conservation, rainwater harvesting, water recharge and sustainability of drinking water sources in areas under Drought Prone Areas Programme (DPAP) and Desert Development Programme (DDP); overexploited dark and grey Blocks and other water stress and drought affected areas
2. Take up projects/schemes to tackle quality related problems and for providing safe drinking water to uncovered and partially covered habitations.

**Swajaldhara**: It is a community led participatory programme launched in 2002, aimed at providing safe drinking water in rural areas. It also includes building awareness among the village community on the management of drinking water projects, including better hygiene practices and encouraging water conservation practices along with rain water harvesting. It has two components. The first is for a gram panchayat or a group of panchayats at the block/tehsil level and the second at the district level.

(F) Rural Sanitation

The concept of sanitation connotes a comprehensive definition, which includes liquid and solid waste disposal, food hygiene, personal, domestic and environmental hygiene. Although the concept of sanitation has undergone qualitative changes during the years, there has been a very limited change in the sanitation condition of rural India.

**Central Rural Sanitation Programme (CRSP)**

CRSP was launched in 1986 and aims at improving the quality of life of the rural people and to provide privacy and dignity to women in particular.

**Objectives**
1. Improving the general quality of life in rural areas.
2. Accelerating coverage in rural areas.
3. Generating demand through awareness creation and health education.

**Programme components**

1. To construct individual sanitary latrines for households Below Poverty Line (BPL) with subsidy, where demand exists.
2. To encourage other households to buy facilities through markets including sanitary marts.
3. To assist in setting up of sanitary marts.
4. To launch awareness campaigns in selected areas.
5. To establish sanitary complex for women.
6. To encourage locally suitable and acceptable models of latrines.
7. To promote total sanitation in villages through construction of drains, soakage pits for liquid and solid waste disposal.

Subsidy for household latrines: Subsidy is given for simple and less expensive latrines. A duly completed household sanitary latrine comprises only a Basic Low Cost Unit (BLCU) without any super structure.

Strategy for School Sanitation: School Sanitation is a vital component of sanitation. It is proposed to construct toilets in all rural schools (separate complex for boys and girls) by the end of the plan. Government machinery, NGO participation and IEC campaigns, provision for an alternate delivery system and more flexible demand-oriented construction norms are also stressed.

(G) Minimum Needs Programme
It started in 1975 with the objective of providing certain basic minimum needs and improve the living standards of the people. Its bigger objective is social and economic development of the community, particularly the underprivileged and under-served population. The programme includes the following components.
(a) Rural Health
(b) Rural Water Supply
(c) Rural Electrification
(d) Elementary Education
(e) Adult Education
(f) Nutrition
(g) Environmental improvement of Urban Slums
(h) Houses for landless labourers

It laid emphasis on establishment of PHC, subcentres to improve rural health. To improve the nutritional status, it aimed at providing nutritional support to eligible persons, to expand “Special nutrition programme” to all the ICDS projects, and to consolidate the mid-day meal programme and link it to health, potable water and sanitation.

(H) 20 - Point Programme
It is an agenda for national action to promote social justice and economic growth. It was restructured in 1986 with the objective of “eradication of poverty, raising productivity, reducing inequalities, removing social and economic disparities and improving the quality of life”. At least 8 of the 20 points are related, directly or indirectly, to health. These are: Point 1 - Attack on rural poverty; Point 7 - Clean drinking water; Point 8 - Health for all; Point 9 - Two child norm; Point 10 - Expansion of education; Point 14 - Housing for the people; Point 15 - Improvement of slums; and Point 17 - Protection of the environment.

References

Study Exercises
MCQs & Exercises on National Health Programmes
Puja Dudeja & Ashok K Jindal

1. Which of the following is true with respect to goals of RCH - II? (a) IMR< 45/1000 (b) MMR< 100/100000 (c) Both of above (d) None of above
2. The long term objective of RCH - II is to achieve a stable population by (a) 2045 (b) 2050 (c) 2015 (d) 2055
3. Centchroman (non steroidal contraceptive) has been developed by (a) Indian Institute of Population Sciences (b) National Institute of Health and Family Welfare (c) All India Institute of Medical Sciences (d) Central Drug Research Laboratory, Lucknow
4. Reducing MMR<200/100000 is a goal of (a) National Health Policy 2002 (b) National Population Policy (c) Tenth five year plan (d) RCH II
5. Home visits for postnatal care for mother and new born under RCH II are done on (a) Day 2 and 5 (b) Day 3 and 7 (c) Day 1 and 3 (d) Day 3 and 5
6. Which of the following is not a critical element of First Referral Unit in RCH II? (a) Availability of surgical interventions (b) Newborn care (c) Blood storage facility on a 24 hr basis (d) Easy accessibility
7. A total number of ________ tablets of iron with folic acid are given to a pregnant woman by health worker (a) 100 (b) 70 (c) 150 (d) 200
8. Under National Nutritional Anemia Prophylaxis Program the strength of iron and folic acid in tablets is (a) 60 mg elemental iron and 0.5 mg folic acid (b) 100 mg of elemental iron and 0.5 mg folic acid (c) 100 mg of elemental iron and 0.1 mg folic acid (d) 60 mg elemental iron and 0.1 mg folic acid
9. Janani Suraksha Yojana (JSY) aims at reducing maternal and neonatal mortality rate by (a) Promoting institutional delivery (b) Health education (c) Distribution of iron and folic acid tablets to the mothers (d) All of the above
10. Under IMNCI the p+ink colour chart refers to a treatment at (a) Out patient facility (b) Home management (c) Give injection/oral drops (d) Urgent referral
11. The objective of national programme for prophylaxis against blindness in children due to vitamin A deficiency is to decrease the prevalence of Vitamin A deficiency to (a) 0.1 % (b) 0.2 % (c) 0.3 % (d) 0.001%
12. The objective of national programme for prophylaxis against blindness in children due to vitamin A deficiency is being implemented through (a) RCH programme (b) National programme for control of blindness (c) UIP (d) None of above
13. Goal of National tuberculosis control programme is...
28. Which of the following is an indicator for operational efficacy? (a) API (b) ABER (c) AFI (d) SPR

29. Which of the following is not a component of DOTS? (a) Political and administrative commitment (b) Supervised treatment to ensure the right treatment (c) Health education (d) A & B

30. Which of the following statements is false? (a) Lymphatic filariasis has been targeted for elimination in 2015 (b) Strategy for elimination is by Annual Mass Drug Administration of DEC for 5 years or more (c) Children less than 2 yrs are not included in Annual Mass Drug Administration (d) DEC is safe in Pregnancy

31. Which one of the following strategies is aimed at AIDS control in India? (a) Detection and treatment of AIDS cases in the community (b) Detection and isolation of HIV infected persons in the community (c) Immune prophylaxis of the risk groups (d) Community education behavioral change

32. AIDS was first detected in India in the year (a) 1975 (b) 1981 (c) 1986 (d) 1991

33. Which of the following is not true about National AIDS control Programme? (a) Sentinel surveillance methodology have adopted (b) Community based screening for prevalence of HIV taken up (c) Early diagnosis and treatment of STD is a major strategy to control spread of HIV (d) Formulating guidelines for blood banks donors & dialysis units

34. National Leprosy Eradication programme was started in (a) 1949 (b) 1955 (c) 1973 (d) 1983

35. Elimination in leprosy stands for (a) Reduce the number of cases to < 1/10,000 population (b) Reduce the number of cases to < 1/1000 population (c) No case of leprosy in a region for 5 years (d) 100 percent treatment of all cases

36. Which one of the following statements is not correct regarding National Leprosy Eradication Programme (NLEP) (a) Multibacillary leprosy treatment is recommended for one year (b) Skin smear examination is done for classification into paucibacillary and multibacillary (c) Special Action Project for Elimination of leprosy is for rural areas (d) Surveillance for two years for a treated case of paucibacillary leprosy to be carried out

37. India was declared ‘Guinea Worm disease free’ in the year (a) 1996 (b) 2000 (c) 2001 (d) 2002

38. National Mental Health programme was started in (a) 1992 (b) 1983 (c) 1994 (d) 1985

39. Which of the following is not a component of AFP SURVEILLANCE? (a) Case notification (b) Case in Laboratory investigation (c) Out break response and active search in community (d) Attaining high routine immunization

40. Which of the following is not a strategy for achieving Polio Eradication? (a) Attaining high routine immunization (b) National Immunization Days (NIDs) (c) Surveillance of Acute Flaccid Paralysis (AFP) (d) Mopping-up immunization (e) None of the above

41. National Mental Health Programme is (a) Vertical programme (b) Integrated Programme (c) None of the above

42. National Cancer Control Programme was started in (a) 1976 (b) 1986 (c) 1970 (d) 1992

43. Under National Cancer Control Programme, oncology wings were sanctioned to - (a) Regional Cancer Institutes (b) District Hospital (c) Medical College Hospitals (d) Voluntary Agencies treating cancer patients

44. National Cancer Registry Programme (NCRP) was started by (a) Ministry of Health and Family Welfare (b) Indian
45. The goal of NIDDCP is (a) To reduce the prevalence of iodine deficiency disorders below 10 percent in the entire country by 2012 AD (b) To reduce the prevalence of iodine deficiency disorders below 5 percent in the entire country by 2012 AD (c) To reduce the prevalence of iodine deficiency disorders below 10 percent in the entire country by 2010 AD (d) None of the above

46. The best indicator for monitoring the impact of Iodine Deficiency Disorders Control Programme is (a) Prevalence of goiter among school children (b) Urinary iodine levels among pregnant women (c) Neonatal hypothyroidism (d) Iodine level in soil

47. Which one of the following is not a target disease under 'Vision 2020: The Right to Sight' (a) Refractive error (b) Trachoma (c) Corneal blindness (d) Diabetic retinopathy

48. SAFE strategy in vision 2020 is for which eye condition (a) Trachoma (b) Cataract (c) Onchocerciasis (d) Childhood blindness

49. Vision 2020 ‘The right to sight’ includes all except (a) Trachoma (b) Epidemic conjunctivitis (c) Cataract (d) Onchocerciasis

50. ICDS is running under (a) Ministry of health and Family Welfare (b) Ministry of Women and child development (c) Collaboration of both of above (d) None of above

Answers: (1) b; (2) a; (3) d; (4) c; (5) b; (6) d; (7) a; (8) b; (9) a; (10) d; (11) c; (12) a; (13) d; (14) c; (15) d; (16) b; (17) b; (18) b; (19) c; (20) a; (21) b; (22) c; (23) b; (24) c; (25) d; (26) b; (27) c; (28) b; (29) d; (30) d; (31) d; (32) c; (33) b; (34) d; (35) a; (36) b; (37) c; (38) a; (39) d; (40) e; (41) b; (42) a; (43) c; (44) c; (45) a; (46) c; (47) d; (48) a; (49) b; (50) b.
Legislations are not an end in themselves. They have to be executed in letter and spirit by a responsible society and the officials responsible for their implementation. Often these legislations may not be able to bring about the desired result. There are many factors responsible for lack of effectiveness of these legislations, viz., Lack of awareness, Lack of implementation, Corruption, Lack of infrastructure, Inconsistency and Inadequacy. To overcome these problems Government of India has initiated National Legal Literacy Mission in 2005 to impart knowledge and education on various legal aspects including those related to Public Health. This programme seeks to sensitize, and create awareness among people about their legal rights, acts and regulations and interpretation of legal jargon.

**Laws in relation to Health Facilities and Services**
- Indian Red Cross Society Act, 1920
- All India Institute of Medical Sciences Act, 1956
- Post Graduate Institute of Medical Education and Research, Chandigarh, Act, 1966
- Bureau of Indian Standards Act and Rules, 1986, 1987
- National Institute of Pharmaceutical Education and Research Act, 1998
- Clinical Establishment Acts
  a. Nursing Homes Registration Acts
  b. State Clinical Establishment Acts and Rules

**Laws in relation to Disease Control and Medical Care**
- Epidemic Diseases Act, 1897
- Indian Aircraft Act and Rules, 1934, 1954
- Indian Port Health Rules, 1955
- Medical Termination of Pregnancy Act, 1971, 1975

**Laws in relation to Healthcare Resources**
The professional ethics, quality control of education programmes, standards etc. are important for all the systems of medicine, hence there are acts and regulations which are enumerated below:

**Allopathy**
- Establishment of New Medical Colleges, Higher Course Regulations, 1993.
- Eligibility Requirement for Taking Admission in Undergraduate Medical Course in a Foreign Medical Institution Regulations, 2002.

**Indian System of Medicine and Homeopathy**
- Homeopathy Education Courses, Standards, 1983
- Homeopathy Practitioners (Professional Conduct, Etiquettes and Code of Ethics) Regulations, 1982

**Dentistry**
- Dentist Act, 1948, 1993
- Dental Council (Election) Regulations, 1952
- BDS, MDS Course Regulations, 1983
- Establishment of Dental Colleges, 1993

**Pharmacy**
- Pharmacy Act, 1948
- Pharmacy Council of India - Regulations

**Nursing**
- Indian Nursing Council Act, 1947
- Indian Nursing Council Regulations

**Rehabilitation**

**Laws in relation to Ethics and Patients Rights**
- Ethical Guidelines for Biomedical Research on Human Subjects, 2000
- Right to Information Act and Rules, 2005
- Central Information Commission (Appeal Procedure) Rules, 2005

**Laws in relation to Pharmaceutical and Medical Devices**
- Drugs and Cosmetics Act, 1940, 2005, 2006
- Drugs Control Act, 1950
- Drug and Magic Remedies (Objectionable Advertisement) Act, 1954
- Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (Ayush) Orders, 2005

**Laws in relation to Radiation Protection**
- Atomic Energy Act and Rules, 1962, 1984
- Radiation Protection Rules, 1971
- Safety Code for Medical Diagnostic X-Ray Equipment and Installations

**Laws in relation to Hazardous Substances**
- Narcotic Drugs and Psychotropic Substances Act and Rules, 1985
- Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988

**Laws in relation to Occupational Health and Accident Prevention**
India is signatory to many International treatise and ILOs convention on occupational health. To bridge the large gap in health status of workers and provide a safe and secure work place certain legislations are required to be enacted to ensure health and safety of the workers, these legislations are as under:
- Workmen's Compensation Act, 1923
- Factories Act 1948, 1987
- Mines Act, 1952, 1957
Laws in relation to Elderly, Disabled, Rehabilitation and Mental Health
- Mental Health Act, 1987
- Central and State Mental Health Rules, 1990
- Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, 1996
- National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999, 2000

Laws in relation to Family, Women and Children
- Special Marriage Act, 1954
- Hindu Marriage Act, 1955
- Children Act, 1960
- Dowry Prohibition Act, 1961
- Suppression of Traffic in Women and Girls Act, 1956
- National Commission for Women Act, 1990
- Juvenile Justice (Care and Protection of Children) Act, 2000

Laws in relation to Smoking, Alcoholism and Drug Abuse
- Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975
- Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act and Rules, 2003, 2004
- Cigarettes and Other Tobacco Products (Prohibition of Sale on Cigarettes and Other Tobacco Products around Educational Institutions) Rules, 2004

Laws in relation to Social Security and Health Insurance
- Minimum Wages Act, 1948
- Employees State Insurance Act and Rules, 1948, 1950
- Life Insurance Corporation Act, 1956
- Maternity Benefit Act, 1961, 1963

Laws in relation to Environmental Protection
Environmental protection is one of the most important global requirements of today. There are many provisions in the constitution of India to safeguard the environment and state is made responsible for this. There are many Acts in the country to protect the environment and mankind. These are as under:
- Environment (Protection) Act, 1986, 2002
- Bhopal Gas Leak Disaster Act, 1985, 1992
- Central Board for the Prevention and Control of Water Pollution (Procedure for Transaction of Business) Rules, 1975

Laws in relation to Nutrition and Food Safety
- Atomic Energy (Control of Irradiation of Food) Rules, 1996
- Food Safety and Standards Act, 2006

Laws in relation to Health Information and Statistics
- Births, Deaths and Marriages Registration Act, 1886
- Registration of Births and Deaths Act, 1969
- Census Act, 1948, 1993

Laws in relation to Intellectual Property Rights
- Patents Act and Rules, 1970, 1972, 2005
- Arbitration and Conciliation Act, 1996
- Trade Marks Act, 1999
- Laws in relation to Custody, Civil and Human Rights
- Indian Penal Code, 1860
- Unlawful Activities (Prevention) Act, 1967
- Protection of Human Rights Act, 1993

Laws in relation to Other (Miscellaneous) Issues
- Essential Commodities Act, 1955
- Standards and Weights Measures Act, 1976

The Consumer Protection Act (CPA), 1986
The CPA is a comprehensive legislation in which consumers can approach with complaints to Commissions at the District, state and central level without any lawyers and there is no court fee.

The CPA protects following consumer rights
1. Right to safety
2. Right to be informed
3. Right to choose
4. Right to be heard
5. Right to seek redressal
6. Right to consumer education

Under this Act a complainant can file any allegation in writing about:

a) A loss or damage suffered as a result of any unfair trade practice adopted by the trader
b) The goods / service suffers from one or more defects
c) An excess price is charged than the one displayed for the goods or service

The Supreme Court declared that like other service providers under contract, doctors who offer services for the price offered are also under the same obligation to compensate the purchaser (patient) for any deficiency in the quality of their services. Doctors in government service, charitable clinics providing free service are exempted from CPA. If the cost of the
services or goods and compensation is less than 5 lakhs then the complaint can be filed in the district forum. If the cost is up to 10 lakhs then the complaint is filed with State Commission and for higher amounts the case is registered with National Commission at New Delhi.

The punishment for the guilty under the Act is imprisonment for minimum one month extendable up to three years or fine not less than Rs 2000/- extendable up to Rs 10,000/- or both.

Negligence means that, ‘a person who holds himself ready to give medical advice and treatment implied undertakes that he possesses the skills and knowledge for that purpose. Such person when consulted by a patient owes him certain duties namely a duty of care in deciding what treatment to give or a duty of care in the administration of that treatment. A breach of any of those duties gives a right of action for negligence to the patient’.

Registration of Births and Deaths Act, 1969

In India, vital statistics are generated through Civil Registration System (Registration of births and deaths), sample registration system, decennial population census, rural survey of cause of death, medical certification of causes of death from hospitals and health centres and adhoc surveys conducted by national and international research organizations.

The Registration of Births and Deaths Act was implemented in 1969 with the aim to collect and compile vital statistics which is necessary for planning and administration. The Act has given statutory authority to the Registrar General, India to coordinate the work of civil registration throughout the country. In rural areas, the local registrars are mainly drawn from panchayat, police, health or revenue departments. In urban areas, health officers of the municipalities or corporations or the executive officers are the Registrars.

Every registrar has to register births and deaths, occurring within his/her administrative areas. The information regarding occurrence is to be given within 21 days in both the events of births and deaths. Delayed registration requires late fee and affidavit from notary public. Every registering authority sends periodical returns to the Chief Registrar who in turn sends it to Registrar General of India. Registrar General brings out every year annual report called ‘Vital Statistics of India’.

The Act also provides for medical certification of cause of death. A medical officer has to certify free of cost in the prescribed format, the cause of death if he/she is attending the deceased during his last breath or illness.

Epidemic Diseases Act, 1897

The Act provides power to exercise for the control and to prevent any epidemic or spread of epidemic in the States or Country. The states may authorise any of its officers or agency to take such measures if the state feels that the public at large is threatened with an outbreak of any dangerous epidemic (Sec. 2). Person who is inspecting, is empowered to determine about the process and authority to take responsibility of all expenses incurred in compensation, travelling, temporary accommodation, segregation of infected person, etc. The State Government can authorise the Dist. Magistrate or other officials to utilise any resources in terms of man, money and material to mobilise infected persons or community to prevent spread of epidemic. State or Central Government can inspect any ship or vessel leaving or arriving at any port in the territories and take appropriate action as prescribed. Violation of this Act is punishable under sec 188 of the IPC.

The Drugs and Cosmetics Act, 1940 (Amended in 1964, 1985, 1995)

The Drugs and Cosmetics Act is mainly aimed to regulate the import, manufacture, distribution and sale of Drugs and Cosmetics, presumably for maintaining high standards of medical treatment. Substandard medicines / drugs may cause severe damage to lives of people.

The Act extends to the whole of India. In this Act the drug is defined as, ‘All Medicines (Ayurveda, Siddha, and Unani) for internal or external use of human being or animals and all substances (other than food) intended to be used for or in the diagnosis, treatment, mitigation or prevention of any disease or disorder in human beings or animals including preparation applied on human body or to destroy insects’.

The Central or State government have power to make rules and appoint inspector to control or inspect any drug or cosmetic for its standardization and safety which can be tested in the Central or State Drug laboratory. The Government can prohibit manufacturing, importing or selling of any drug or cosmetic. Violation of law by any person or corporate manager or owner is liable for punishment for a term which may extend to 3-10 years and shall also be liable to fine which could be five hundred or ten thousand rupees or with both.

Drugs and Cosmetic Rules 1995 contains the list of drugs for which license is required by manufacturer, importers, and exporters. Recently ‘in vitro’ blood groups, sera and in vitro diagnostic devices for HIV, HBsAg, and HCV are also included in schedule C1. All imported drugs in indigenous manufacturers have to register to control over the quality of imported as well as locally manufacturing kits.

The Medical Termination of Pregnancy Act, 1971

(It extends to the whole of India except the State of Jammu and Kashmir.)

Registered Medical Practitioners who may terminate Pregnancies : A pregnancy may be terminated by a Registered Medical Practitioner (RMP) registered under the MCI Act, and those who have undergone 6 months housemanship or 3 years post graduate training in obstetrics and gynaecology or any registered medical practitioner who have conducted 25 cases of MTP in approved institution. Where the length of the pregnancy does not exceed twelve weeks, then one RMP can conduct MTP and if the length of the pregnancy exceeds twelve weeks but does not exceed twenty weeks, opinion of not less than two registered medical practitioners are required to certify the valid reasons as per the law for discontinuation of pregnancy.

Conditions under which MTP can be carried out :

(i) Therapeutic : The continuance of the pregnancy would involve a risk to the life of the pregnant woman or of grave injury to physical or mental health.
In case of total or partial temporary disablement; a sum
have been employed in the specified occupation for at least 6
and the legal representative of a deceased employer and when
in wide varieties of hazardous occupations by an employer,
As per the Workmen's Compensation Act, any worker employed
in accordance with this Act at any
(a) a hospital established or maintained by Government, or
(b) a place for the time being approved for the purpose of this
Place where pregnancy may be terminated: No termination
of pregnancy shall be made in accordance with this Act at any
(a) a hospital established or maintained by Government, or
(b) a place for the time being approved for the purpose of this
Punishment: Termination of pregnancy not falling under the
purovie of MTP Act is an offence punishable with rigorous
imprisonment for a term which shall not be less than 2 years
up to maximum 7 years.

The Workmen's Compensation Act, 1923, 1984, 2000
As per the Workmen’s Compensation Act, any worker employed
in wide varieties of hazardous occupations by an employer,
when a workman is temporarily lent or let on hire
to another person by the person with whom the workman has
entered into a contract of service or apprenticeship means such
other person while the workman is working for him;
The disablement means the loss in the earning capacity of
a workman in every employment which he was capable of
doing at the time of accident. Its effect may be temporary or
permanent. To enter into contract of Workmen’s Compensation
Act, and claim for an occupational disease, he or she should
have been employed in the specified occupation for at least 6
months.
The compensation is paid to the workers according to the
damage:
1. In case of death, compensation is paid to the dependents;
40 percent of the monthly wage, multiplied by factor or Rs
20,000/- whichever is more.
2. In case of permanent disablement; 50 percent of the monthly
wage, multiplied by factor, or Rs.24,000/- whichever is more.
3. In case of partial permanent disablement; the compensation
is percentage of that payable in case of total permanent
disability as given in schedule I.
4. In case of total or partial temporary disablement; a sum
equal to 25 percent of the monthly wages of the workman
shall be paid half yearly.

Further details of Workmen Compensation Act and other laws
in relation to industrial health are discussed in detail in the
section on Occupational health in this book.

The Water (Prevention and Control of
Pollution) Act 1974
This Act was passed by the Parliament in 1974 to counter and
contain ever growing pollution of natural water resources. This
Act is comprehensive in providing the legal basis for prevention
and control of water pollution, maintenance and restoration of
wholesomeness of water sources in the country.

Definitions
Under the Act important definitions are:

a) Pollution: Pollution means contamination of water or such
alteration of the physical, chemical or biological properties of
water or such discharge of any sewage or trade effluent or of
any other liquid, gaseous or solid substance into water as may,
or is likely to create a nuisance or render such water harmful or
injurious to public health or safety, or to domestic, commercial,
industrial, agricultural or other legitimate uses, or to the life
and health of animals or plants or of aquatic organisms.

b) Sewage Effluent: Sewage Effluent means effluent from
any sewerage system or sewage disposal works and includes
sullage from open drains.

c) Trade Effluent: Trade Effluent includes any liquid, gaseous
or solid substance which is discharged from any premises used
for carrying on any industry, operation or process, or treatment
and disposal system, other than domestic sewage.

To execute the aforesaid purposes, the Act provides for
the constitution of Central, State and Joint Boards having
prescribed powers and functions. These boards are to be called
Pollution Control Boards. The main function of the Central
Board shall be to promote cleanliness of watercourses in
different areas of the States. The Board has been conferred the
to perform several functions i. e., advisory to the Central
Govt; co-ordinating the activities of the State Boards; provide
technical assistance and guidance to the state board, carry out
and sponsor investigations and research relating to problems
of water pollution and their abatement; plan and organize
training of persons engaged or to be engaged in programmes for
prevention and control; collect, compile and publish technical
and statistical data related to the subject; to lay down, modify
or annul the standards for a water course; plan and cause to be
executed, nationwide programmes and so on.

The Board may establish or recognize laboratories to enable
it to perform its functions including the analysis of samples
of water, sewage or trade effluents. The State Boards, under
the guidance of Central Board, are similarly responsible to plan
and execute comprehensive programmes in their respective
territories. They have also been conferred the powers of entry
into any premises after giving due notice to the owner and collect
samples of water, sewage and trade effluents for analysis and
recommend necessary legal steps. The State Governments, under
advice from the Board, are also authorised to take emergency
measures when pollutants have entered or threatened to enter
the watercourse due to accidental or unforeseen event or act of
omission or commission. A Joint Board is set up on subjects of
common interest by mutual agreement either between adjacent states or between the states(s) and the Central Govt. when the latter has been appointed as the executing agency for the Union Territories.

Punishments: Any person or organisations which fail to comply with regulations of this Act can be convicted and punished with imprisonment of 3 months or fine up to Rs 10,000/ or with both. If offender repeats the offence then additional fine up to Rs 5,000/- for everyday, during which such failure continues after the conviction for the first such failure.

If the failure continues beyond a period of 1 year after the date of conviction, the offender shall, on conviction, is punishable with imprisonment for a term which shall not be less than 2 years but which may extend to 7 years and with fine.

Air (Prevention and Control of Pollution) Act, 1981


Definitions

In this Act, important definitions are:

(a) Air Pollution: Air Pollution means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

(b) Automobile: Automobile means any vehicle powered either by internal combustion engine or by any method of generating power to drive such vehicle by burning fuel.

(c) Control Equipment: Control Equipment means any apparatus, device, equipment or system to control the quality and manner of emission of any air pollutant and includes any device used for securing the efficient operation of any industrial plant.

(d) Emission: Emission means any solid or liquid or gaseous substance coming out of any chimney, duct or fuel or any other outlet.

(e) Industrial Plant: Industrial Plant means any plant used for any industrial or trade purposes and emitting any air pollutant into the atmosphere.

(f) Occupier: Occupier, in relation to any factory or premises, means the person who has control over the affairs of the factory or the premises, and includes, in relation to any substance, the person in possession of the substance.

Central Pollution Control Board (CPCB)

The Central Pollution Control Board constituted under Section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974), shall, without prejudice to the exercise and performance of its powers and functions under that Act, exercise the powers and perform the functions of the Central Pollution Control Board for the prevention and control of air pollution under this Act.

Functions of Central Board

1. To improve the quality of air and to prevent, control or abate air pollution in the country.
2. To advise the Central Government on any matter concerning the improvement of the quality of air and the prevention, control or abatement of air pollution.
3. Plan and cause to be executed a nationwide programme for the prevention, control or abatement of air pollution.
4. Co-ordinate the activities of the State Boards and resolve disputes among them.
5. Provide technical assistance and guidance to the State Boards, carry out and sponsor investigations and research relating to problems of air pollution and prevention, control or abatement of air pollution.
6. Plan and organise the training of persons engaged or to be engaged in programmes for the prevention, control or abatement of air pollution on such terms and conditions as the Central Board may specify.
7. Organise through mass media a comprehensive programme regarding the prevention, control or abatement of air pollution.
8. Collect, compile and publish technical and statistical data relating to air pollution and the measures devised for its effective prevention, control or abatement and prepare manuals, codes or guides relating to prevention, control or abatement of air pollution.
9. Lay down standards for the quality of air.
10. The Central Board may establish or recognise a laboratory or laboratories to enable the Central Board to perform its functions under this section efficiently.
11. The Central Board may delegate any of its functions under this Act generally or specially to any of the committees appointed by it.

CPCB has power to restrict use of any area, automobile, or industry having or causing air pollution. Any person empowered by pollution control boards shall have right to enter, at all reasonable times as he considers necessary, any place for seizing or examining and testing any control equipment, air sampling, industrial plant, record, register, document or any other material object or for conducting a search of any place in which he has reason to believe that an offence under this Act or the rules has been made.

Punishment

Whoever fails to comply with the provisions shall be punished with imprisonment for a term which shall not be less than one year and six months but which may extend to six years and with fine, and in case failure to comply continues, an additional fine may be imposed which may extend to Rs 5,000/- for every day during which such failure continues after the conviction for the first such failure.

If the failure continues beyond a period of 1 year after the date of conviction, the offender shall, on conviction, is punishable with imprisonment for a term which shall not be less than 2 years but which may extend to 7 years and with fine.
The Transplantation of Human Organs Act, 1994

An Act to provide for the regulation of removal, storage and transplantation of human organs for therapeutic purposes and for the prevention of commercial dealings in human organs.

Definitions
In this Act, some important definitions are:

(a) Brain-stem death: Brain-stem death means the stage at which all functions of the brain-stem have permanently and irreversibly ceased.

(b) Deceased Person: Deceased Person means a person in whom permanent disappearance of all evidence of life occurs, by reason of brain-stem death or in a cardio-pulmonary sense, at any time after live birth has taken place.

(c) Donor: Donor means any person, not less than eighteen years of age, who voluntarily authorises the removal of any of his human organs for therapeutic purposes.

(d) Human Organ: Human Organ means any part of a human body consisting of a structured arrangement of tissues which, if wholly removed, cannot be replicated by the body.

(e) Near Relative: Near Relative means spouse, son, daughter, father, mother, brother or sister.

(f) Transplantation: Transplantation means the grafting of any human organ from any living person or deceased person to some other living person for therapeutic purposes.

Authority for Removal of Human Organs

Any donor may, in such manner and subject to such conditions as may be prescribed, authorise the removal, before his death, of any human organ of his body for therapeutic purposes in writing and in the presence of two or more witnesses use for therapeutic purposes. And no such removal shall be made by any person other than the registered medical practitioner.

Authority for Removal of Human Organs in Case of Unclaimed Bodies in Hospital or Prison

In the case of a dead body lying in a hospital or prison and not claimed by any of the near relatives of the deceased person within forty-eight hours from the time of the death of the concerned person, the authority for the removal of any human organ from the dead body which so remains unclaimed may be given, in the prescribed form, by the person in-charge, for the time being, of the management or control of the hospital or prison, or by an employee of such hospital or prison authorised in this behalf by the person in charge of the management or control thereof.

Restrictions on Removal and Transplantation of Human Organs

No human organ removed from the body of a donor before his death shall be transplanted into a recipient unless the donor is a near relative of the recipient.

Registration of Hospitals Engaged in Removal, Storage or Transportation of Human Organs

No hospital shall commence any activity relating to the removal, storage or transplantation of any human organs for therapeutic after the commencement of this Act unless such hospital is duly registered under this Act.

Punishment for Removal of Human Organ without Authority

(1) Any person who renders his services to or any hospital and who, for purposes of transplantation, conducts, associates with, or help in any manner in, the removal of any human organ without authority, shall be punishable with imprisonment for a term which may extend to five years and with fine which may extend to ten thousand rupees.

(2) Where any person convicted under sub-section (1) is a registered medical practitioner, his name shall be reported by the Appropriate Authority to the respective State Medical Council for taking necessary action including the removal of his name from the register of the Council for a period of two years for the first offence and permanently for the subsequent offence.

Punishment for Commercial Dealings in Human Organs

Whoever

(a) makes or receives any payment for the supply of, or for an offer to supply, any human organ; (b) seeks to find a person willing to supply for payment any human organ; (c) offers to supply any human organ for payment; (d) initiates or negotiates any arrangement involving the making of any payment for the supply of, or for an offer to supply, any human organ; (e) takes part in the management or control of a body of persons, whether a society, firm or company, whose activities consist of or include the initiation or negotiation of any arrangement referred to in clause (d); or (f) publishes or distributes or causes to be published or distributed any advertisement.

Shall be

Punishable with imprisonment for a term which shall not be less than two years but which may extend to seven years and shall be liable to fine which shall not be less than ten thousand rupees but may extend to twenty thousand rupees.

Punishment for Contravention of any other Provision of this Act.

Whoever contravenes any provision of this Act or any rule made, or any condition of the registration granted, thereunder for which no punishment is separately provided in this Act, shall be punishable with imprisonment for a term which may extend to three years or with fine which may extend to five thousand rupees.

The Immoral Traffic (Prevention) Act, 1956

An Act to provide in pursuance of the International Convention signed at New York on the 9th day of May, 1950, for the prevention of immoral traffic. Any person who keeps or maintains or acts or assists in the keeping and management or a brothel, is liable to be punished under this section.

Definitions

Some of the definitions in this Act are:

(a) Brothel: Brothel includes any house, room, conveyance or place, or any portion of any house, room, conveyance or place,
which is used for purposes of sexual exploitation or abuse for the gain of another person or for the mutual gain of two or more prostitutes.

(b) Prostitution: Prostitution means the sexual exploitation or abuse of persons for commercial purposes or for consideration in money or in any other kind, and the expression “prostitute” shall be construed accordingly.

c) Child: Child means a person who has not completed the age of 16 years.

d) Major: Major means a person who has completed the age of 18 years.

e) Minor: Minor means a person who has completed the age of 16 years but has not completed the age of 18 years.

Offences and Punishments in this Act are:

1. Any person who keeps, or manages, or acts or assists in the keeping or management of, or on the earnings of, a brothel, shall be liable to be punished with -
   (a) rigorous imprisonment for not less than 1 year but not exceeding 5 years, or fine not exceeding Rs. 5,000/-(or both).
   (b) rigorous imprisonment for not less than 2 years but not exceeding 7 years.
   (c) fine not exceeding Rs. 2,000/-.
2. Any person who procures or induces any person for the purpose of prostitution; or takes, causes or induces any person to carry on prostitution, shall be punishable with:
   (a) rigorous imprisonment for not less than 3 years but not exceeding 7 years; and
   (b) fine not exceeding Rs. 2,000/-.
3. Any person over the age of 18 years who knowingly lives on the earnings of the prostitution of any other person, shall be liable to be punished with imprisonment not exceeding 2 years, or fine not exceeding Rs. 1,000/-, or both.
   But, where such earnings relate to the prostitution of a child or a minor, the offender shall be liable to be punished with imprisonment for a term not exceeding 7 years and not more than 14 years.
4. Any person who detains any other person in any brothel, or in or upon any premises, for the purpose of prostitution, shall be liable to be punished with imprisonment for not less than 7 years but not exceeding 10 years and also fine.
5. Any person who carries on prostitution in or in the vicinity of public places which are within a distance of two hundred metres of any place of public religious worship, educational institution, hostel or hospital, or such other public place of any kind as may be notified in this behalf by the Commissioner of Police or Magistrate in the manner prescribed. Any person who commits an offence shall be punishable with:
   (a) imprisonment for not less than 7 years but for life; or
   (b) imprisonment up to 10 years and also fine.
6. Any woman who tempts, or attracts, or endeavours to tempt or attract the attention of, any person for the purpose of prostitution; or solicits or molests any person, or loiters or acts to cause obstruction or annoyance to persons or to offend against public decency, for the purpose of prostitution, shall be punishable with -
   (a) imprisonment up to 6 months or fine up to Rs. 500/- or both, on first conviction; and
   (b) imprisonment up to 1 year and fine up to Rs. 500/-, in the event of a second or subsequent conviction.

But, a man who commits any of offences under this section, shall be punishable with imprisonment for not less than 7 days but not exceeding 3 months.

Prostitution is a social evil and indicates poverty, weak social fabric, alcoholism and lower status of women. Immoral traffic will not only lead to lower social morals but also spread of certain killer diseases like STIs, HIV/AIDS etc. There is an increasing prevalence of HIV/AIDS noticed in commercial sex workers.

The Child Marriage Restraint Act, 1929

The Act extends to whole of India except state of J & K. the Act is expedient to restrain the solemnisation of child marriages.

Definitions

Under this Act some definitions are:

(a) Child: Child means a person who, if a male, has not completed twenty one years of age, and if a female, has not completed eighteen years of age.

(b) Child Marriage: Child Marriage means a marriage to which either of the contracting parties is a child.

(c) Minor: Minor means a person of either sex who is under eighteen years of age.

Punishments

a) Any male above eighteen years of age and below 21 years, contracts a child marriage shall be punishable with simple imprisonment which may extend to 15 days, or with fine which may extend to Rs 1,000/- or with both.

b) Any male above 21 years of age contracts a child marriage shall be punishable with simple imprisonment, which may extend to 3 months and shall also be liable to fine.

c) Where a minor contracts a child marriage, any person having charge of the minor, whether as parent or guardian or in any other capacity, lawful or unlawful, who does not act to promote the marriage or permits it to be solemnised shall be punishable with simple imprisonment up to 3 months and shall also be liable to fine. It is a cognisable offence and person can be arrested without the warrant or without the orders of a Magistrate.

Bio Medical Waste (Management and Handling) Rules, 1998

This is dealt in detail in an exclusive chapter in this book.

Municipal Solid Waste (Management and Handling) Rules, 2000

The solid waste generated in urban areas is increasing everyday. The characteristics of the waste generation are changing with more disposable plastic items being wasted along with other non decomposable low combustible items. On an average 0.2-0.5 kg of solid waste per capita per day is generated in the Indian cities and the civic authorities collect about 55 million tons of municipal solid waste every year. There are various reasons for poor management of solid waste in urban areas
such as lack of fund, lack of technology, lack of awareness and people’s participation, inadequate staff etc. Under the EPA 1986 to safeguard the environment and human health government of India has laid down Municipal solid waste management rules. These rules lay down the responsibility of management of solid waste disposal and various standards for disposal of treated leachate. The management of solid waste has been made the responsibility of municipal authority. The district magistrate / deputy commissioner shall have the over all responsibility for the enforcement of the provisions under these rules. Refuse based fuel technology has been advocated by the government and wastes like plastic generate energy but also emits carcinogens such as dioxins into air. By 2020, it is decided that 50 percent of municipal solid waste and 70 percent of the other waste must be recycled.

Cantonments Act 1924
An Act to consolidate and amend the law relating to the administration of cantonments. It extends to the whole of India. The important definitions in this Act are:-

Definitions
(a) Assistant Health Officer : Assistant Health Officer means the medical officer appointed by the officer Commanding-in-Chief to be the Assistant Health Officer for a cantonment.
(b) Board : Board means a Cantonment Board constituted under this Act.
(c) Civil Area : Civil Area means an area declared to be a civil area by the Central Government.
(d) Executive Officer : Executive Officer means the person appointed under this Act to be the Executive Officer of a cantonment.
(e) Health Officer : Health Officer means the senior executive medical officer in military employed on duty in a cantonment.

Constitution of Cantonment Boards
In Class I cantonments (population exceeding 10,000) & class II Cantonments (population > 2500 but not exceeding 10,000), the Board shall consist of (a) The Officer Commanding the station or such other military officer as may be nominated in his place by the Officer Commanding-in-Chief, the Command; (b) an executive Magistrate nominated by the District Magistrate; (c) the Health Officer; (d) the Executive Engineer; (e) 1, 2 or 3 military officers (depending on the population), nominated by name by the Officer Commanding the station by order in writing.

In Class III Cantonments (population upto 2,500), the Board shall consist of (a) The Officer Commanding the station, or such other military officer as may be nominated in his place by the Officer Commanding-in-Chief, the Command; (b) one military officer nominated by name by the Officer Commanding the station in writing; (c) one member elected under this Act. The Officer Commanding the station, if a member of the Board shall be the President of the Board; moreover, in every Board in which there is more than one elected member, there shall be a Vice-President elected by the elected members only.

Executive Officer : For every cantonment there shall be an Executive Officer appointed by the Central Government or by such person as the Central Government may authorise in this behalf. The Executive Officer shall have the following duties :- (a) exercise all the powers and perform all the duties conferred or imposed upon him by or under this Act or any other law for the time being in force; (b) prescribe the duties of, and exercise supervision and control over the acts and proceedings of, officers and other employees of the Board, other than medical officer in charge of the cantonment general hospital or dispensary; (c) be responsible for the custody of all records of the Board; (d) arrange for the performance of such duties relative to the proceedings of the Board or of any Committee of the Board or of any Committee of Arbitration constituted under this Act, as those bodies may respectively impose on him; (e) comply with every requisition of the Board on any matter pertaining to the administration of the cantonment.

Summary
The Public Health Legislations aims to improve the health status of the community by maintaining the balance between individual autonomy and community protection. Government of India has initiated, National Legal Literacy Mission in 2005 to impart knowledge and education on various legal aspects. The CPA is a comprehensive legislation in which consumers can approach with complaints to Commissions at the District, state and central level without any lawyers and court fee. Doctors in government service, charitable clinics providing free service are exempted from CPA.

The Registration of Births and Deaths Act was implemented in 1969 with the aim to collect and compile vital statistics which is necessary for planning and administration. The Act has given statutory authority to the Registrar General, India to coordinate the work of civil registration throughout the country. Every registrar has to register births and deaths, occurring within his/her administrative areas. The information regarding occurrence is to be given within 21 days in both the events of births and deaths. The Act also provides for medical certification of cause of death.

The Epidemic Diseases Act, 1897 provides power to exercise for the control and to prevent any epidemic or spread of epidemic in the States or Country.

The Drugs and Cosmetics Act aims to regulate the import, manufacture, distribution and sale of Drugs and Cosmetics for maintaining high standards of medical treatment.

As per the Workmen's Compensation Act, any worker employed in wide varieties of hazardous occupations by an employer, if suffers an injury, he/she is eligible for compensation, provided he is employed for at least 6 months. If he dies then legal dependents can claim the benefits provided by the Act.

The Water (Prevention and Control of Pollution) Act 1974 was passed by the Parliament in 1974 to provide legal basis for prevention and control of water pollution, maintenance and restoration of wholesomeness of water sources in the country. The State Boards, under the guidance of Central Board, are responsible to plan and execute comprehensive programmes in their respective territories.
The Air (Prevention and Control of Pollution) Act, 1981 is to provide for prevention, control and abatement of air pollution. The Central Pollution Control Board constituted under Section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974), exercise the powers and perform for the prevention and control of air pollution.

The Immoral Traffic (Prevention) Act, 1956 provides for the prevention of immoral traffic. Any person who keeps or maintains or acts or assists in the keeping and management or a brothel, is liable to be punished under this section. Immoral traffic not only leads to lower social morals but also spread of certain killer diseases like STIs, HIV/AIDS etc.

The Child Marriage Restraint Act, 1929 extends to whole of India except state of J & K. The Act is expedient to restrain the solemnisation of child marriages.

Municipal Solid Waste (Management & Handling) Rules, 2000 was laid down under the EPA 1986 to safeguard the environment and human health. The district magistrate / deputy commissioner shall have the over all responsibility for the enforcement of the provisions under these rules

The Cantonments Act 1924 consolidates and amends the law relating to the administration of cantonments.

Study Exercises

MCQs & Exercises

1. Following are the ways & means in which public health officials enforce rules: (a) Permits, licenses and registrations (b) Administrative orders (c) Civil penalties (d) Injunctions (e) All of the above

2. The factors responsible for lack of effectiveness of public health legislations are (a) Lack of awareness (b) Lack of implementation (c) Corruption (d) All of the above

3. CPA protects all of the following consumer rights except: (a) Right to safety (b) Right to be informed (c) Right to seek redressal (d) Right to consumer education (e) Right to follow religion

4. Who all are covered under CPA?

5. Define ‘Drug’ as in Drugs and Cosmetics Act, 1940?

Fill in the blanks

1. Public Health laws protect ______ rather than individual’s health.

2. Govt of India initiated National Legal Literacy Mission in 2005 to ______.

3. The Registration of Births and Deaths Act was implemented in ______.

4. The information regarding occurrence of birth and death event is to be given within ______ in ______ the events. Delayed registration requires ______.

5. Violation of Epidemic Diseases Act, 1897 is punishable under sec ______ of the IPC.

6. Recently under the Drugs and Cosmetics Act ______ and ______ are also included in schedule CI.

7. As per the Workmen’s Compensation Act, disablement means ______ and employer’ includes ______.

8. The Water (Prevention and Control of Pollution) Act 1974 states that term ‘Pollution’ means ______ and term ‘Trade effluent’ includes ______.

9. Name the Act which is an outcome of the United Nations Conference on the Human Environment held in Stockholm in June, 1972 ______.

10. “Brain-stem death” under the Transplantation of Human Organs Act, means ______.

11. Under the Immoral Traffic (Prevention) Act, 1956 “Minor” means a person who has completed the age of ______ but has not completed the age of ______.

12. The Immoral Traffic (Prevention) Act, 1956 defines ‘Child’ as a person who has not completed the age of ______ while under the Child Marriage Restraint Act, 1929 ‘Child’ means a person who, if a male, has not completed ______ years of age, and if a female, has not completed ______ years of age.

13. On an average ______ kg of solid waste per capita per day is generated in the Indian cities.

14. As per the Cantonments Act 1924 in Class I cantonments are with population exceeding ______ & class II Cantonments has population ______ but not exceeding ______. The Class III Cantonments has only population up to ______.

Answers: MCQs: (1) d; (2) d; (3) e; (4) The Supreme Court declared that like other service providers under contract, doctors who offer services for the price offered are also under the same obligation to compensate the purchaser (patient) for any deficiency in the quality of their services. (5) Under the Drugs and Cosmetics Act, 1940 defines drug as, ‘all Medicines (Ayurvedic, Siddha, and Unani) for internal or external use of human being or animals and all substances (other than food) intended to be used for or in the diagnosis, treatment, mitigation or prevention of any disease or disorder in human beings or animals including preparation applied on human body or to destroy insects’.

Fill in the blanks: (1) community health; (2) to impart knowledge and education on various legal aspects including those related to Public Health; (3) 1969; (4) 21 days, both; (5) 188; (6) ‘in vitro’ blood groups, sera and in vitro diagnostic devices for HIV, HBsAg, and HCV; (7) disablement means the loss in the earning capacity of a workman in every employment which he was capable of doing at the time of accident, includes any body of persons whether incorporated or not and any managing agent of an employer; (8) ‘Pollution’ means contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water, any liquid, gaseous or solid substance which is discharged from any premises used for carrying on any industry, operation or process, or treatment and disposal system, other than domestic sewage; (9) Air (Prevention and Control of Pollution) Act, 1981; (10) “brain-stem death” means the stage at which all functions of the brain-stem have permanently and irreversibly ceased; (11) 16yrs, 18yrs; (12) 16yrs, 21yrs, 18yrs; (13) 0.2-0.5kg; (14)10000, 10000,2500,2500.
A disability can be defined as 'an existing difficulty in performing one or more activities which in accordance with the subject’s age, sex and normative social role are generally accepted as essential basic components of daily living'. There seems to be lack of reliable data regarding the incidence and prevalence of various disabilities. National Survey Sample Organisation conducted a sample survey in 1991 which estimated that 1.9% of India’s population had disability, and 3% of children had delayed development and likely to be Mentally Retarded. Various studies have shown that 4% of India’s population has visual impairment and 6-15% children have learning disability. Overall 10% of our child population has special educational needs.

The highest prevalence of disaster in India is seen in Assam and Arunachal Pradesh states with prevalence more than 20 per 1000 population.

The Government of India has been very concerned regarding the problem and has taken a number of steps in this direction. The Ministry of Social Justice & Empowerment (previously welfare) has been identified as the nodal ministry by the government for the welfare of the disabled. The major legal initiatives towards the field of rehabilitation are described below.

Rehabilitation Council of India Act (RCI Act), 1992

The Government of India set up a Rehabilitation Council, as a registered society under the Societies Registration Act, 1860. Thereafter, this was converted to a statutory body under the Rehabilitation Council of India Act, 1992. It came into force from 31st July, 1993. This is under the administrative control of Ministry of Social Justice and Empowerment. RCI has been established to regulate training programmes in the field of rehabilitation and maintenance of central rehabilitation register, with the following objectives:

- To regulate the training policies and programmes in the field of rehabilitation of people with disabilities.
- To prescribe minimum standards of education and training of various categories of professionals dealing with people with disabilities.
- To regulate these standards in all training institutions uniformly throughout the country.
- To recognise institutions/universities running degree/diploma/certificate courses in the field of rehabilitation of persons with disabilities
- To recognise foreign degree/diploma/certificate awarded by universities/institutions on reciprocal basis;
- To maintain central rehabilitation register of persons possessing the recognised rehabilitation qualification; and
- To encourage continuing rehabilitation education in collaboration with organisations working in the field of disability.

Persons with Disabilities (Equal opportunities, protection of rights and full participation) Act (PWD), 1995

The legislation called Persons with Disabilities Act, was enacted in 1995 to protect the rights of persons with disabilities, to provide educational opportunities and full participation. The Act enshrines a multisectoral response to rehabilitation of persons with disabilities.

Visual Impairment

Blind persons are defined as those who suffer from either of the following conditions:

- Total absence of sight; Visual acuity not exceeding 6/60 or 20/200 (Snellen) in the better eye with correcting lenses;
- Limitation of the field of vision subtending an angle of 20 degrees or worse.

Different reports and studies, world wide shows that 35-45 million people are blind and an additional 110 - 135 million (Table-1) suffer from low vision conditions. As per the global statistics on Blindness 1998, India has approximately 10 million blind persons requiring services. The estimated incidence of blindness in India is 2.13 million per year (1). The common causes of blindness and visual impairment in India are : Cataract, Glaucoma, Corneal ulcer, Xerophthalmia and other froms of vitamin A deficiency, Conjunctivitis, Retinal detachment, Albinism, Astigmatism, Nystagmus, Optic atrophy, Retinitis pigmentosa and Trachoma. The percentage wise distribution of causes of visual impairment in India is cataract (81%), refractive errors (7%), corneal opacity (3%), glaucoma (2%), trachoma (0.2%), malnutrition related blindness (0.04%) and other causes put together (6.76%). The magnitude of blindness in India has multifarious dimensions with most of them having preventable background.

<table>
<thead>
<tr>
<th>Category</th>
<th>Prevalence per 1000 popn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>10.2</td>
</tr>
<tr>
<td>Female</td>
<td>12.2</td>
</tr>
<tr>
<td>All ages</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Table - 1 : The estimated prevalence of blindness in India (2004)

National Efforts

In India, efforts to control blindness were taken by the government during the seventies. The National Programme for Control of Blindness (NPCB) was launched in 1976 with the goal to bring down the prevalence rate of blindness from 1.4% to 0.3% by the end of twentieth century. Since its launch, considerable progress has been made in building up of infrastructure at Primary Health Centres (PHCs), district hospitals, and medical colleges, and in setting up of central and district mobile units for preventive and curative aspects of visual disability. The major work under the programme has been the effective tackling of cataract through large scale involvement of voluntary organizations and the private sector.
Collaborative Efforts
The WHO and a consortium of International Non-Governmental Development Organizations (INGDOS) have launched a massive scheme called Vision 2020 which states that the avoidable blindness in the developing countries must be prevented by the year 2020. The Danish International Development Agency (DANIDA) entered into bilateral agreement with the Government of India in 1987 with the objective of preventing blindness and also in capacity building in executing prevention related services. The Sight First Programme of the Lions Club International is also targeting many regions in India to prevent avoidable blindness. Similarly World Bank is assisting blindness control projects in India since 1994-95.

Vocational Rehabilitation
In the process of rehabilitation, employment should aim at normalization, sensitization and advocacy on the abilities of persons with visual impairment. The Persons with Disabilities Act 1995 states that government shall identify posts which can be reserved for persons with disabilities. The employment of persons with visual impairment in India may be classified into following:

<table>
<thead>
<tr>
<th>Types of Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment opportunity in government jobs through open competition</td>
</tr>
<tr>
<td>Employment in government sector through reservation</td>
</tr>
<tr>
<td>Employment opportunity through special drive</td>
</tr>
<tr>
<td>Employment exchange guided employment in private companies</td>
</tr>
<tr>
<td>Employment through placement services</td>
</tr>
<tr>
<td>Employment in special industries for the disabled</td>
</tr>
<tr>
<td>Employment in vocational / production centres for the blind</td>
</tr>
<tr>
<td>Family supported employment</td>
</tr>
<tr>
<td>Self employment</td>
</tr>
</tbody>
</table>

Schemes and Concessions for Persons with Visual Impairment

Travel Concession for the Disabled: A blind person traveling alone or with an escort, by rail, on production of a certificate from Government doctor or a registered medical practitioner, is eligible to get the concession as below. The concession certificate may be issued by the Station Master and blind person may not be present at the station for purchase of the ticket.

<table>
<thead>
<tr>
<th>Class</th>
<th>First Class</th>
<th>Second Class</th>
<th>Sleeper</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of concession</td>
<td>75</td>
<td>75</td>
<td>75</td>
</tr>
</tbody>
</table>

Similarly, The Indian Airlines Corporation allows 50% concessional fare to Blind persons on all domestic flights. To avail this facility (for blind persons) they have to produce a certificate from a medical practitioner. Air Hostess/Steward will look after the Blind Persons not accompanied by escorts in flight. The Public Relation Officer or the Traffic Officer Incharge at the airport will render necessary assistance to such infirm passengers at the airport of the departure and arrival. Escorts are to pay full fare.

Communication: Blind literature packets are exempted from payment of postage. Blind persons are given concessional and on priority telephone connections.

Customs Concession: The central government exempts goods like vocational aids or specific equipments which are essential for management, when imported in India by a handicapped or disabled person for his personal use.

Conveyance Allowance: In terms of GoI order vide OM 19029/1/78-E.IV (B) dated 31.8.78, as amended from time to time, conveyance allowance is admissible to such of the Central Government employees borne or regular establishment (including work-charged staff) as are Blind or Orthopaedically Handicapped with disability of lower extremities. Consequent upon coming into force of these orders, such conveyance allowance shall be abolished and instead all such employees may now be paid transport allowance at double the normal rates prescribed under these orders. The allowance shall not be admissible in case such employees have been provided with the facility of Government transport.

Scheme for Integrated Education for the Disabled Children: This is a centrally sponsored scheme and was launched in 1974 by the then Department of Social welfare and now with Department of Education since 1982. 100 percent assistance is provided to the states/UTs for education of the child suffering from certain mild handicaps in common schools with the help of necessary aids, incentives and specially trained teachers. The handicapped children are provided with the books and stationary allowance, uniform allowance, transport allowance, reader allowance, escort allowance and subsidized equipments.

Hearing Impairment
The first school for the deaf in India was started in Bombay Presidency in 1884. By the time India became independent in 1947, there were 38 schools for the deaf. In 1964, Kothari commission recommended the establishment of special schools in every district. All India Institute of Speech and Hearing (AIISH) was established in 1965 at Mysore. In 1983, All Yavar Jung National Institute for the hearing handicapped was started at Bombay under the Ministry of welfare, GOI as an apex body for the hearing handicapped.

The Deaf are defined as those in whom the sense of hearing is non-functional for ordinary purposes of life. They do not hear and understand sounds at all events with amplified speech. The cases included in this category will be those having hearing loss less than 90 decibles in the better ear (profound impairment) or total loss of hearing in both ears.

Worldwide there are about 123 million persons with hearing loss majority of them are living in South Asian Countries. In 1991, NSSO estimated that there are 3 million persons with hearing impairment in India. The age wise distribution per 1000 persons with hearing impairment is as shown in Table-2.

Hearing is one of the important factors which determines the ‘quality’ of life we lead. Irrespective of the age of onset of hearing impairment, it comes in the way of the individual utilizing his potentials to the maximum, be it in terms of speech and language acquisition, education, vocational placement, if
not attended to on time. WHO in 1980 summarised the main causes of hearing impairment in India as infections, neglect and ignorance.

### Table - 2: Age wise distribution of hearing impaired

<table>
<thead>
<tr>
<th>Age Group (years)</th>
<th>Hearing Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
</tr>
<tr>
<td>0-4</td>
<td>NA</td>
</tr>
<tr>
<td>5-14</td>
<td>85</td>
</tr>
<tr>
<td>15-59</td>
<td>387</td>
</tr>
<tr>
<td>60 &amp; above</td>
<td>526</td>
</tr>
</tbody>
</table>

#### National Efforts

National Information Centre of Disability and Rehabilitation (NICDR) was established in 1987. This is a nodal agency for creation of awareness regarding the causes and prevention of disabilities, services available for such disabilities etc. In addition to this National Institutes for hearing handicapped and District Rehabilitation Centre mainly for surveys, research and training were established. The setting up of Vocational Rehabilitation Centres (VRCs) by the government has formalized vocational training and rehabilitation. There are currently 17 VRCs that are working towards training of persons with disabilities, while the Training Centre for Adult Deaf (TCAD) at Hyderabad works exclusively for the hearing impaired.

#### Other Facilities Available

- Government of India set up the National Advisory Council for the education of the handicapped in 1955.
- All India Federation of the Deaf (AIFD), a voluntary organization was established in 1955.
- Special employment exchanges were started since 1959.
- AIFD established a multi purpose training centre in Delhi in 1960.
- Government started central scheme of assistance and awards scholarships.
- Training centre for the adult deaf was established by Madras Association of the Deaf in Madras, in 1973.
- A school for the partially hearing impaired started in Hyderabad by the Ministry of Welfare.
- NCERT developed a department for special education.
- There are 200 medical colleges and hospitals in the country where special medical facilities are provided for ENT problems.

#### Travel:

A deaf and dumb person traveling alone (both afflictions together in the same person) on production of a certificate from a government doctor is eligible for rail concession as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>First Class</th>
<th>Second Class</th>
<th>Sleeper</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of concession</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

A deaf & dumb person is permitted to travel by 2-tier A.C. on payment of concessional fare for first class and full surcharge for 2-tier A.C. Sleeper.

### Locomotor Impairment

Today it is estimated, 1.6 percent of the Indians - the figure comes to around 16 million in absolute terms are inflicted with locomotor disabilities. In India's below 14 yr child population, approximately 3 million were inflicted with locomotor disability - the most common cause of which is poliomyelitis, cerebral palsy etc.

The orthopaedically handicapped are those who have a physical defect or deformity which causes an interference with the normal functioning of the bones, muscles and joints. In above definition if inability resulting from afflictions of nervous system is added then it is called locomotor disability. It can be classified as:

1. **Congenital**: cerebral palsy, CTEV, meningocoele, meningo myelocoele, phocomelias, congenital dislocation of hip etc.
2. **Acquired**.
   a) Infective: Tuberculosis of spine or joints, poliomyelitis, septic arthritis, chronic osteomyelitis etc.
   b) Traumatic: Road traffic accidents, domestic accidents, industrial accidents etc.
   c) Vascular: Cerebro-vascular disease, peripheral vascular disease, Perthe's disease etc.
   d) Others: These include metabolic, neoplastic and degenerative diseases

#### National Efforts

An All India Institute of Physical Medicine and Rehabilitation (AIIPMR) came up at Mumbai under the aegis of the central health ministry. The centre’s main occupation is to provide rehabilitative services to the locomotor disabled and few non governmental organization also started contributing for locomotor disabled. The Medical Council of India (MCI) sent a directive to all medical colleges to start a department of physical medicine and rehabilitation so that students are exposed to principles of rehabilitation medicine.

The institutions engaged in rehabilitation of the locomotor disabled are National Institute for Rehabilitation Training and Research (NIRTR), Olatpur in Orissa, National Institute for Orthopaedically Handicapped (NIOH), Calcutta, Institute for the Physically Handicapped (IPH), New delhi.

The Artificial Limbs Manufacturing Corporation of India (ALIMCO), set up at Kanpur as a Government undertaking, mainly for social services and not for profits, started production in October 1976.

The District Rehabilitation Centre (DRC) Scheme was initiated in 1985 by the Ministry of Welfare in collaboration with the National Institute of Disability and Rehabilitation Research (NIDDR) and Department of Education and UNICEF. The services provided by these centres are:

1. Prevention and early detection
2. Medical intervention and surgical correction
3. Fitment of artificial aids and appliances
4. Therapeutic services such as Physiotherapy, occupational therapy and speech therapy
5. Provision of training for acquisition of skills through vocational training
6. Job placement in local industries.
Facilities and Concessions

Travel: State governments offer either full concession or 50 percent concession for traveling in state run buses. As regards rail travel, the Orthopaedically Handicapped person traveling with an escort, on production of a certificate from a Government doctor to the effect that the person concerned is orthopaedically handicapped and cannot travel without the assistance of an escort, is eligible for getting rail concession at the same rates as mentioned for locomotor handicapped persons. Locomotor Disabled persons (80% and above) are also allowed 50% Concession in Indian Airlines.

Mental Retardation

During the 1950s, children with moderate mental retardation emerged as focus of concern, largely through the efforts of increasingly well organized parent advocacy groups. This led to formation of National Association for Retarded Children (NARC) in 1950, now known as the Association for Retarded Citizens (ARC). Self advocacy and consumer awareness, that have empowered people with disabilities globally, have made human services to recognize and restructure their programmes and strategies.

Mental Retardation (MR) is prevalent in all societies and cultures and the prevalence is estimated to be around 30 per thousand worldwide. Nearly 75 percent of people diagnosed to have mental retardation fall in the category of mild mental retardation, while the remaining 25 percent have IQ of 50 or below are classified as moderately, severely or profoundly retarded. Nearly 10 percent have associated medical conditions like epilepsy, hyperkinesias or mental illness. Nearly 4 percent of all children with MR have multiple handicaps. In India the prevalence varies from 0.22 to 32.8 per thousand population. Family history and retardation had high association and in rural areas incidence of retardation is more.

Classification

The DSM-IV classifies four different degrees of mental retardation: mild, moderate, severe, and profound. These categories are based on the functioning level of the individual.

Mild mental retardation: Approximately 85% of the mentally retarded population is in the mildly retarded category. Their IQ score ranges from 50-75, and they can often acquire academic skills up to the 6th grade level.

Moderate mental retardation: About 10% of the mentally retarded population is considered moderately retarded. Moderately retarded individuals have IQ scores ranging from 35-55. They can carry out work and self-care tasks with moderate supervision.

Severe mental retardation: About 3-4% of the mentally retarded population is severely retarded. Severely retarded individuals have IQ scores of 20-40. They may master very basic self-care skills and some communication skills. Many severely retarded individuals are able to live in a group home.

Profound mental retardation: Only 1-2% of the mentally retarded population is classified as profoundly retarded. Profoundly retarded individuals have IQ scores under 20-25. They may be able to develop basic self-care and communication skills with appropriate support and training.

National Efforts

The development of education for the disabled and particularly mentally retarded took a different progressive turn after 1964-66 when the education commission, following the constitutional directives, suggested with emphasis that education for handicapped has to be organized not merely on humanitarian grounds but on grounds of utility by making them useful citizens. The National Policy for Children (1974) came in and measures were intended to cover all children including those who came from weaker sections of society and those who were handicapped. Integrated Education for the Disabled commenced with central funding in 1974.

To make programme planning more realistic, working groups on the education of disabled child were set up in 1981 by the Ministry of Welfare and Ministry of Education and culture, Government of India. The committee suggested special day schools, residential schools, resource teacher programme and partial integration over 20 year time span.

The National Institute for the Mentally Handicapped (NIMH) was established in Secunderabad in 1985. The Early Childhood Care and Education (ECCE) scheme through ICDS, preschool programme, and District Primary Education Programme (DPEP) have included disability education including mental retardation since 1999. From July 1999, RCI started a national level programme, training programme for PHC doctors, to train them in disability management. This national level programme named, “National Programme on Orientation of Medical Officers working in Primary Health Centres to Disability Management”, which will train 30,000 medical officers through a three day orientation module. Thakur Hari Prasad Institute of Research and Rehabilitation for the mentally handicapped (THPI), Hyderabad is a NGO run organization. It was established in the year 1968 and made significant contribution in the field of manpower development. The Mental Health Act, 1987 is an act to consolidate and amend the laws relating to the treatment and care of mentally ill persons, to make better provisions with respect to their property and affairs and for connected matters.

Facilities and Concessions

A mentally retarded person, accompanied by an escort, on production of a certificate in the prescribed form, from a government doctor, is eligible to get the same rate of railway concession as entitled for locomotor handicapped persons.

Vocational Training

With modern training procedures retarded children can engage in some occupations and achieve at least partial economic independence. Vocational training is therefore of great importance and about 200 institutions in this country offer vocational training. On completion of training, the adult MR person move towards four possible employment:

1. Open employment
2. Supported open employment
3. Sheltered employment
4. Self employment.

Placement services: About 10 percent of vocational institutions have taken up this task of not only providing vocational training but placing the adult mentally retarded
person in open employment with little support. Home based self employment in our Indian context are Agarbatti making, candle making, running photo copier, chalk making, telephone booths etc.

**Parental Counseling**

Several voluntary organizations are engaged in parents counseling through their multidisciplinary approach. The counseling of parents is very important because:

1. They have to deal with the normal development and interpersonal crisis in the MR child.
2. They have to cope with the complications introduced by the reality of child’s disability of which they have little knowledge or experience.

**Sports and Recreation**

Sports Olympics India was founded in 1988 to provide opportunity for persons with Mental Handicap to participate in National and International sports and games. Sports Olympics India organizes national games to select appropriate candidates for the International special Olympics.

**Foster Care Home**

Foster care home is a home away from home, specially mentioned home for children with mental retardation, who require accommodation and special care. Many voluntary organizations and NGOs are running such homes. Here with the help of foster care mothers who impart systematic training and guidance they learn daily routine of home, activities of daily living.

**Others**

1. Allotment of public telephone booths on priority to handicapped persons.
2. A scheme of scholarship for pursuing education in special schools run by NGOs.
3. Government servant is eligible to draw Children's Educational Allowance when his MR child goes to school away from the station of his/her posting.
4. Housing boards and urban development authorities have scheme of preferential allotment of plots and housing sites to individuals with disability.
5. The GOI, Department of Personnel and Training in 1991, makes a provision for a choice in the place of posting of parents in government service having a child with MR.

**Facilities and Concessions given by the Central and State Governments for the Disabled**

1. **Employment Opportunity Schemes**

3 percent Reservations in Gr ‘C’ & ‘D’ Posts: As per the order of Government of India reservation of 3% in jobs have been made in Gr.’C’ & Gr.’D’ posts for the PH persons. The category of handicapped persons benefited are the blind, the deaf and the O.H. Persons with disability will be given preference at the time of recruitment in the identified Gr.’A’ and ‘B’ posts.

**Age Concession:** As per the Government order it has been decided to extend the age concession of 10 years in favour of handicap persons to recruitment to posts filled through the SSC and through Employment Exchange in Gr.’C’ & Gr.’D’ posts.

Apart from other employment schemes/reservation in jobs as mentioned earlier for disabled persons, they are also provided relaxation in

**Age:** Upper age limit has been relaxed upto 10 years and if physically handicapped is SC/ST then further 5 years are relaxed in the age criteria.

**Physical fitness:** Physically handicapped persons are not subjected to the usual medical examination by the appointing authorities.

**Qualifications:** Relaxation is also given on various qualifications for different posts. e.g. exemption of typing for appointment to clerical posts.

Another scheme is being developed with the objective of providing assistance to disabled persons in getting gainful employment either through Special Cells in normal Employment Exchanges or through Special Employment Exchanges for physically handicapped persons. The scheme is implemented through Labour Department of State Governments/UT Administrations. Up to 100% financial assistance is provided in the case of Special Cells and 80% in case of Special Employment Exchanges to State Govts./Union Territory Administrations.

2. **Income Tax Concessions**

The following rebates are available. These rebates are available not only to a handicapped person but also to any normal person who has a handicapped person as his / her dependant.

a) **80DD (Deductions in respect of medical treatment, etc., of handicapped persons):** When an assessee is suffering from a permanent physical disability (including blindness) or is subject to mental retardation, being a permanent physical disability or mental retardation specified in the rules made in this behalf by the Board, which is certified by a physician, a surgeon, an oculist or a psychiatrist, as the case be, working in a government hospital, and which has the effect of reducing considerably such person's capacity for normal work or engaging in a gainful employment or occupation. The assessee shall be allowed a deduction of a sum of fifteen thousand rupees only (Rs.15,000/-) in respect of the previous year.

b) **80 DDA (Deduction in respect of deposit made for maintenance of handicapped dependent):** In computing the total income of an assessee the amount can be detected not exceeding twenty thousand rupees (Rs.20,000) paid or deposited by him in the previous year out of his income chargeable to tax, under any scheme framed in this behalf by the Life Insurance Corporation or the Unit Trust of India.

c) **80 DDB (Deduction in respect of medical treatment etc.):** Where an assessee who is resident in India has, incurred any expenditure for the medical treatment of such disease or ailment for himself or a dependent relative, the assessee shall be allowed a deduction of a sum of fifteen thousand rupees only (Rs.15,000) in respect of that previous year in which such expenditure was incurred.

d) **80U (Deduction in respect of permanent disability (including blindness)):** In computing the total income of an individual, who is suffering from a permanent physical disability or mental retardation shall be allowed a deduction of

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a sum of seventy five thousand rupees (Rs.75,000).

3. Financial Assistance to Persons with Disabilities
   (a) National Handicapped Finance & Development Corporation (NHFDC) : The “National Handicapped Finance and Development Corporation” has been incorporated by Ministry of Social Justice & Empowerment, Govt.of India on 24th Jan, 1997 under section 25 of the Companies Act, 1956 as a company not for profit. It is wholly owned by Govt. of India and has an authorized share capital of Rs. 400 crores (Rupees Four Hundred Crores only). The objectives of this corporation are:

   - Promote economic developmental activities for the benefit of persons with disabilities.
   - Promote self-employment and other ventures for the benefit/economic rehabilitation of persons with disabilities.
   - Extend loans to person with disability for pursuing general/professional/technical education for training at graduate and higher level.
   - Assist in the upgradation of technical and entrepreneurial skills of persons with disability for proper and efficient management of production units.
   - Assist self-employed individuals/group of individuals of registered factories/companies/co-operatives of disabled persons in marketing their finished goods and assist in procurement of raw materials.

   Any Indian Citizen with 40% or more disability and age between 18 and 55 years and annual Income below Rs.60,000/- for urban areas (less than Rs.55,000/-p.a. for rural areas) is eligible for the scheme.

   NHFDC Schemes : These include loans for setting up small business (Loan upto Rs.20.00 Lakhs), for higher studies, for agricultural activities (Loan upto Rs.5.00 Lakhs), for manufacturing/production of assistive Devices for disabled persons (Loan upto Rs.25.00 Lakhs), for self employment amongst persons with mental Retardation, Cerebral Palsy and Autism (Loan upto Rs.2.50 Lakhs).

(b) National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities: The National Trust for welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999 came into force w.e.f. 30th December, 1999. The National Trust supports programmes which promote independence, facilitate guardianship where necessary and address the concerns of those special persons who do not have their family support. The Trust also seeks to strengthen families and protect the interest of persons with autism, cerebral palsy, mental retardation and multiple disabilities after the death of their parents. The Trust is empowered to receive grants, donations, benefactions, bequests and transfers. It is exempted from income tax.

4. Central Government Schemes for the Rehabilitation of Persons with Disabilities

   Ministry of Social Justice and Empowerment

   a) Scheme to promote Voluntary Action for Persons with Disabilities (Umbrella Scheme)

      The enactment of the people with disabilities, equal opportunities and protection of Right Act of 1995 is landmark legislation and an expression of India's commitment of social justice. The Disability Division of the Ministry of Social Justice and Empowerment has so far been administering the following five grant-in-aid schemes which are being implemented through NGOs:

      - Scheme of Assistance to organizations for the disabled.
      - Scheme of Assistance to Disabled Persons for Purchase/Fitting of Aids/Apparatus.
      - Scheme of Assistance of Voluntary Organization for the Rehabilitation of Leprosy Cured Persons.
      - Scheme of Assistance to voluntary Organizations for Special School for Handicapped Children.
      - Scheme of Assistance of Organizations for Persons with Cerebral Palsy and Mental Retardation.

   b) Scheme of Assistance to Disabled Persons for Purchase/Fitting of Aids & Appliances (ADIP)

      Ministry of Rural Areas & Employment : Convergence of Poverty Alleviation Programme of the Ministry of Rural Areas and Employment with the ADIP Scheme of Ministry of Social Justice and Empowerment.

      - TRYSEM training to disabled.
      - Financial assistance to group of persons with disability in rural areas.
      - Revision/Modification of Jawahar Rozgar Yojana guidelines, earmarking of funds for persons with disability.
      - 3% reservation to persons with disability in the Rural Sanitation programme.
      - Earmarking of 3% of funds for the benefits of persons with disability under Indira Awas Yojana.

5. Pension and Unemployment Allowance

   Some of the state governments have introduced disability pension and unemployment allowance schemes.

6. Educational Assistance Schemes

   Ministry of Welfare covers scholarships for general education from class IX onwards and for technical training at certificate, diploma and degree levels.

   Department of Social Welfare provides scholarships to pursue education from class I to class VIII.

7. Fellowships

   The University Grants Commission has reserved 1 percent of the fellowships allocated to the Universities for the handicapped.


   A number of State Governments have reserved 3 percent seats in Industrial Training Institutes/Engineering and management Colleges (usually it is 1% each for Visual, Hearing and Locomotor handicapped persons).

9. District Rehabilitation Centres

   The Government of India launched the District Rehabilitation Centre Scheme in early 1995, to provide comprehensive rehabilitation services to the rural disabled right at their door steps. The scheme, at present, is operational at 11 different districts of the 10 states of our country. These are - Bhubaneswar (Orissa); Bilaspur (Madhya Pradesh); Kharagpur (West Bengal); Mysore (Karnataka); Chengalpattu (Tamil Nadu); Sitapur (Uttar Pradesh); Vijaywada (Andhra Pradesh);
Bhiwani (Haryana); Kota (Rajasthan) and Virar (Maharashtra), Jagdishpur (Uttar Pradesh).

**The services provided in the scheme includes -**
- Prevention and Early Detection
- Medical Intervention and Surgical Correction
- Fitment of Artificial Limbs, Aids and Appliances
- Therapeutic Services
- Training for acquiring Vocational Training, Job Placement etc.

10. Regional Rehabilitation Training Centres (RRTCs)

Four Regional Rehabilitation Training Centres (RRTCs), also been set up at Chennai, Cuttack, Lucknow and Mumbai for training and manpower development in the field of rehabilitation particularly for the DRCs. The RRTCs also have been conducting training programmes for Communities, Parents and even for Persons with Disabilities themselves.

11. Science and Technology Project in Mission Mode on Application of Technology for the Welfare and Rehabilitation of the Handicapped

The objective of the scheme is to coordinate and fund the research projects for generation of new technology in terms of development of assistive devices for large scale use by the disabled. The focus of S&T Mission Mode scheme is to design, develop and standardize new and innovative assistive devices of better materials, design and technology for fabricating high quality modern state of the art assistive devices.

Several products have been successfully developed, to name a few such as plastic aspheric lenses for the low vision persons, B.K. Prosthesis, inter-pointing Braille writing frame, PU Foam foot, multifunctional wheelchair, feeding aid for spastic etc. developed under the Mission Mode. The implementation of this scheme is through 100% funding to the research/scientific institutions through Rehabilitation Technology Centre.

12. Scheme for Setting up of Composite Regional Centre for Persons with Disabilities

It has been approved to set up Composite regional Centres for persons with disabilities in different parts of country. The basic objective of setting up Composite Resource Centres (CRCs) is to create the infrastructure required for training and manpower development, research and providing services to persons with disabilities, particularly in those parts of the country where much infrastructure is lacking at present. The Centres would be expected to function as the Outreach Centres of National / Apex Institutes, presently functioning under the Ministry and will facilitate the process of capacity building at local levels, in regions, in which these are being set up. The proposed centers would also carry out the following objectives.

- To serve as Resource Centre for rehabilitation and special education of persons with disabilities. To start with, short term and orientation courses will be taken up.
- To establish linkages with existing medical, educational and employment services, following the principles of community-based rehabilitation and offer extension services in the rural areas.
- To develop strategies for delivery of rehabilitation services suitable to the socio-cultural background of the region.
- To undertake designing, fabrication and fitment of aids and appliances.
- To undertake services of education and skill development leading to enhancement of opportunities for employment, rehabilitation, mobility communication, recreation and integration in society.

First such Composite Regional Centre has started functioning at Srinagar and the second Composite Regional Centre has started functioning at Lucknow since 2000.

13. Scheme for Setting up Regional Rehabilitation Centres for Persons With Spinal Injuries and other Orthopaedic disabilities

It has been approved to establish four Regional Rehabilitation Centres for Persons with Spinal Injuries and other Orthopaedic Disabilities in the country, as a Centrally Sponsored Scheme on 90:10 Centre : State sharing basis. These Centres would provide facilities for treatment and rehabilitation services to the spinally injured and persons with other orthopaedic disabilities. The Indian Spinal Injuries Centre, New Delhi, a Centre of Excellence will provide the required technical support for setting up of these centres and will also function as Referral Centre.

Various services to be provided by the Centre will include:

- Diagnostic Facilities
- Equipped Physio-Occupational Therapy
- In patient beds facility
- Minor Operation Theatre
- Artificial Limbs and appliances fitting centre
- Vocational Training
- Teaching and Training to health personnel & community workers.

14. National Awards for People with Disabilities

The Ministry of Social Justice & Empowerment has been giving National Awards since 1969 on the International Day of Disabled Persons on 3rd December every year. The Awards are given in different categories, namely best employer of disabled, outstanding employee, placement officer, best individual, institution, barrier-free environment, creative disabled person and National Technology Awards involved in the rehabilitation and welfare of persons with disabilities.

Institution of Awards has created awareness amongst the disabled persons both in public and private sector and brought them in the mainstream.

15. Others

(a) Handicapped persons are exempted from payment of application and examination fee as prescribed by UPSC/SSC

(b) Assistance to Disabled persons for purchase / fitting of aids/appliances to procure durable, sophisticated and scientifically manufactured aids and appliances to promote their physical, social and psychological rehabilitation.

(c) Assistance to voluntary organizations working for the disabled welfare. Financial support is given up to maximum limit of 90 percent of the total project cost.

(d) Assistance to voluntary organizations working for the rehabilitation of leprosy cured persons both in rural and
urban areas. Financial support is given up to maximum limit of 90 percent of the total project cost. Programmes like awareness generation, early intervention, educational and vocational training, economic rehabilitation, social integration etc are undertaken in the schemes.

(e) Physically handicapped owners of motorized vehicles are granted exemption from the payment of road tax by the state government and are eligible to claim refund up to 50 percent of the expenditure incurred by them on purchase of petrol/diesel from recognized dealers subject to certain ceilings. The scheme is operative through District Social Welfare Officers or Tehsildars or any other equivalent authority.

Important Organisations and Centres

National Level Rehabilitation Institutes

- All Yavar Jung National Institute for the Hearing Handicapped (AYJNIHHH), Mumbai
- National Institute of Mentally Handicapped (NIMH), Secunderabad
- National Institute of Visually Handicapped (NIVH), Dehradun
- National Institute for the Orthopaedically Handicapped (NIOH) rechristened as Dr. Shyama Prasad Mukherjee National Institute for Orthopaedically Handicapped, Kolkata
- National Institute for Rehabilitation Training & Research, Cuttack.
- The Institute for the Physically Handicapped, Delhi.

Associated Organisations

- Artificial Limbs Manufacturing Corporation of India (ALIMCO)
- Dr. Ambedkar Foundation
- Institute for the Physically Handicapped (IPH), rechristened as Deen Dayal Upadhyay Institute of Physically Handicapped
- National Handicapped Finance and Development Corporation (NHFDC)
- National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities
- National Institute of Social Defence (NISD)
- Office of the Chief Commissioner for Disabilities
- Swami Vivekanand National Institute of Rehabilitation, Training and Research (SVNIRTAR).

Summary

WHO has defined rehabilitation as “the combined and coordinated use of medical, social, educational and vocational measures for training and retraining the individual to the highest possible level of functional ability”. The GOI has set up a Rehabilitation Council in 1860, converted to a statutory body under the Rehabilitation Council of India Act, 1992 to regulate training programmes in the field of rehabilitation, under the aegis of the Ministry of Social Justice & Empowerment. The Persons with Disabilities Act was enacted in 1995 to protect the rights of persons with disabilities, to provide educational opportunities and full participation.

The National Programme for Control of Blindness (NPCB) was launched in 1976 with the goal to bring down the prevalence rate of blindness from 1.4% to 0.3% by the end of twentieth century and considerable progress has been made since its launch. The WHO and a consortium of international non governmental development organizations (INGDOs) have launched Vision 2020 with aim to prevent the avoidable blindness in the developing countries by the year 2020. DANIDA in 1987 and World Bank since 1994-95 are in agreement with GOI for assisting in control projects and capacity building.

The first school for the deaf in India was started in Bombay Presidency as back as 1884. Following recommendation of Kothari Commission, All India Institute of Speech and Hearing (AIISH) was established in 1965 at Mysore and Ali Yavar Jung National Institute for the hearing handicapped was started at Bombay in 1983. WHO in 1980 summarized the main causes of hearing impairment in India as infections, neglect and ignorance. National Information Centre of Disability and Rehabilitation (NICDR) was established in 1987 for creation of awareness regarding the causes and prevention of disabilities, services available for such disabilities etc. In 1991, NSSO estimated that there are 3 million persons with hearing impairment in India. Currently 17 VRCs that are working towards training of persons with disabilities, while the Training Centre for Adult Deaf (TCAD) at Hyderabad works exclusively for the hearing impaired.

In India around 16 million are inflicted with locomotor disabilities of which around 3 million are below 14 yr child population- the most common cause of which is poliomyelitis, cerebral palsy etc. The institutions engaged in rehabilitation of the locomotor disabled are All India Institute of Physical Medicine and Rehabilitation (AIIPMR), Mumbai; National Institute for Rehabilitation Training and Research (NIRTAR), Olarpur in Orissa; National Institute for Orthopaedically Handicapped (NIOH), Kolkata; Institute for the Physically Handicapped (IPH), New Delhi; and the Artificial Limbs Manufacturing Corporation of India (ALIMCO), Kanpur. The District Rehabilitation Centre (DRC) Scheme was initiated in 1985 by the Ministry of Welfare in collaboration with the National Institute of Disability and Rehabilitation Research (NIDDR) and Department of Education and UNICEF.

Mental Retardation (MR) is prevalent in all societies and cultures and in India the prevalence varies from 0.22 to 32.8 per thousand. National Association for Retarded Children (NARC) formed in 1950 is now known as the Association for Retarded Citizens (ARC) focusing on children with moderate mental retardation. Integrated Education for the Disabled commenced with central funding in 1974 and working groups on the education of disabled child were set up in 1981 to make it more realistic. National Institute for the Mentally Handicapped (NIMH) was established in Secunderabad in 1985. The Early Childhood Care and Education (ECCE) scheme and District Primary Education Programme (DPEP) have included disability education since 1999. From July 1999, RCI started “National Programme on Orientation of Medical Officers working in Primary Health Centres to Disability Management”, which will train 30,000 medical officers through a three day orientation module. The Mental Health Act, passed in 1987 to consolidate and amend the laws relating to the treatment and care of
mentally ill persons, to make better provisions with respect to
their property and affairs and for connected matters.

Facilities and Concessions given by the Central and State
Governments for the Disabled

1. Employment Opportunity Schemes
   ● 3 percent Reservations in Gr ‘C’ & ‘D’ Posts
   ● Age Concession of 10 years in favor of handicapped
     persons to recruitment to posts filled through the SSC
     and through Employment Exchange in Gr.‘C’ & ‘D’ posts.
   ● Physically handicapped persons are not subjected to the
     usual medical examination by the appointing authorities.
   ● Relaxation is also given on various qualifications for
     different posts. Eg exemption of typing for appointment to
     clerical posts.
   ● Getting gainful employment either through Special cells
     in normal Employment Exchanges or through Special
     Employment Exchanges for physically handicapped
     persons.
   ● Income Tax Concessions are applicable to not only to a
     handicapped person but also to any normal person who
     has a handicapped person as his / her dependant :
     ● 80D - Deduction in respect of medical treatment, etc., of
       handicapped persons
     ● 80D - Deduction in respect of deposit made for
       maintenance of handicapped dependent
     ● 80DB - Deduction in respect of medical treatment etc.
     ● 80U - Deduction in respect of permanent disability including
       blindness

2. Financial Assistance to Persons with Disabilities is
   available through:
   ● National Handicapped Finance & Development Corporation
     (NHFDC)
   ● National Trust for Welfare of Persons with Autism, Cerebral
     Palsy, Mental Retardation and Multiple Disabilities

3. Central Government Schemes for the Rehabilitation of
   Persons with Disabilities :
   ● Scheme to promote Voluntary Action for Persons with
     Disabilities (Umbrella Scheme)
   ● Scheme of Assistance to disabled persons for purchase/
     fitting of aids & appliances (ADIP)
   ● Convergence of Poverty Alleviation Programme of the
     Ministry of Rural Areas and Employment with the ADIP
     Scheme of Ministry of Social Justice and Empowerment
   ● Revision/Modification of Jawahar Rozgar Yojana
     guidelines
   ● Earmarking of 3% of funds for the benefits of persons with
     disability under Indira Awas Yojana.

4. National Programme for Control of Blindness (NPCB) was
   launched in ______ with the goal to bring down the
   prevalence rate of blindness from ________ to _______
   by the end of twentieth century.

5. AIIPMR, Mumbai established under the aegis of :
   ● Ministry of Social Justice & Empowerment (b) Ministry of Health
     and Family Welfare (c) Ministry of Labour
     (d) None

6. Integrated Education for the Disabled commenced in :
   (a) 1977 (b) 1974 (c) 1983 (d) 1965

7. National Institute for the Mentally Handicapped (NIMH)
   was established in 1985 at : (a) Bangalore (b) Secunderabad
   (c) Mysore (d) Mumbai

8. Possible employment for a mentally handicapped
   individual are : (a) Supported open employment
   (b) Sheltered employment (c) Self employment (d) All

9. WHO in 1980 summarized; the main causes of hearing
   impairment in India as : (a) Infections (b) Neglect
   (c) Ignorance (d) All

10. The most common cause of locomotor disability in India
    among below 14 yr child population : (a) poliomyelitis
    (b) cerebral palsy (c) both of above (d) congenital causes

11. Who all amongst the international agencies are providing
    collaborative support to GOI in prevention and control of
    Blindness : (a) DANIDA (b) World Bank (c) WHO (d) all of
    above

Fill in the Blanks

1. National Survey Sample Organisation in 1991 estimated
   that _______ of India’s population had disability, and ________
   of children had delayed development and likely to be Mentally
   Retarded.
2. Rehabilitation Council of India Act was passed in ______
   and came into force from
3. Commonest causes of blindness and visual impairment in
   India are : ________, ________, & ________.
4. National Programme for Control of Blindness (NPCB) was
   launched in ________ with the goal to bring down the
   prevalence rate of blindness from ________ to ________ by
   the end of twentieth century.
5. ____________ commission recommended the
   establishment of special schools for hearing impaired in
every district.
6. The Deaf are defined as those having hearing loss more than

Study Exercises

1. Which ministry has been made responsible by the
   government for the welfare of the disabled ? (a) Ministry
   of Social Justice & Empowerment (b) Ministry of Health
   and Family Welfare (c) Ministry of Labour (d) None

2. Blindness as per WHO classification is includes all except:
   (a) 3/60 (finger counting at 3 meters) to 1/60 (finger
   counting at 1 meter) (b) 1/60 to light perception (c) No light
   perception (d) 6/60 to 3/60

3. WHO in 1980 summarized; the main causes of hearing
   impairment in India as : (a) Infections (b) Neglect
   (c) Ignorance (d) All

4. The most common cause of locomotor disability in India
   among below 14 yr child population : (a) poliomyelitis
   (b) cerebral palsy (c) both of above (d) congenital causes

5. AIIPMR, Mumbai established under the aegis of :
   (a) Ministry of Social Justice & Empowerment (b) Ministry of Health
     and Family Welfare (c) Ministry of Labour
     (d) None

6. Integrated Education for the Disabled commenced in :
   (a) 1977 (b) 1974 (c) 1983 (d) 1965

7. National Institute for the Mentally Handicapped (NIMH)
   was established in 1985 at : (a) Bangalore (b) Secunderabad
   (c) Mysore (d) Mumbai

8. Possible employment for a mentally handicapped
   individual are : (a) Supported open employment
   (b) Self employment (c) Self employment (d) All

9. In India Regional Rehabilitation Training Centers is
   established in : (a) Bangalore (b) Secunderabad
   (c) Mysore (d) Secunderabad

10. Who all amongst the international agencies are providing
    collaborative support to GOI in prevention and control of
    Blindness : (a) DANIDA (b) World Bank (c) WHO (d) all of
    above
Upper age limit for physically handicapped has been
Sports Olympics India was founded in ________ to provide
District Rehabilitation Centre (DRC) Scheme was initiated in
Examples of Home based self employment for mentally
Artificial Limbs Manufacturing Corporation of India
Training Centre for Adult Deaf (TCAD) at _____________
Currently ____________VRCs are working towards training
Any Indian Citizen with ________ or more disability and

Fill in the Blanks
1. ________ in the ________ ear (profound impairment) or
2. ________, ________ loss of hearing in both ears.
3. Currently ________ VRCs are working towards training
4. Training Centre for Adult Deaf (TCAD) at ________ works exclusively for the hearing impaired.
5. Artificial Limbs Manufacturing Corporation of India (ALIMCO) set up at _____________ as a Government undertaking, mainly for social services and not for profits, started in ________.
6. Examples of Home based self employment for mentally retarded are ________, ________ & ________ etc.
7. District Rehabilitation Centre (DRC) Scheme was initiated in 1985 by the Ministry of ________ in collaboration with Department of ________ and ________.
8. National Association for Retarded Children (NARC) in 1950, now known as the
9. Sports Olympics India was founded in ________ to provide opportunity for persons with Mental Handicap to participate in National and International sports and games.
10. Upper age limit for physically handicapped has been relaxed up to ________ years & if physically handicapped is SC/ST then further _____ years are relaxed in the age criteria.

Answers : MCQs : (1) a; (2) d; (3) d; (4) c; (5) d; (6) b; (7) b; (8) d; (9) d; (10) d.

Further Suggested Reading
2. National Health Profile 2007, Central Bureau of Health Intelligence, DGHS, Govt Of India, New Delhi, 2008.

Human Manpower Resources in India (Including AYUSH)

Anagha Khot

Human resources are the most precious resource of a country. Globally national health systems are finding it challenging to train, sustain and retain their health workers. While India is being propelled to a position of international eminence, it faces three main groups of challenges: first, dealing effectively with unfinished agendas of communicable diseases, maternal and child health, and health systems strengthening; second, dealing with new emerging challenges such as premature burden of non-communicable diseases; and third, dealing with globalization related issues while contributing to the management and shaping of the global policy environment. In addressing these challenges, the health workforce is confronted by shortages, migration, issues of quality, accountability, public-private coordination, and the complexity of service provision to large and diverse populations.

Concepts and Definitions(1)

Human resources for health (HRH) : HRH (Used synonymously with ‘health manpower, health personnel, or health workforce’) refers to “people engaged in actions whose primary intent is to enhance health” (World Health Report, 2006). This includes both private and public sectors and different domains of health systems, such as personal curative and preventive care, non-personal public health interventions, disease prevention, health promotion services, research, management and support services (Fig. - 1).

HRH encompass “all individuals engaged in the promotion, protection, or improvement of population health, including clinical and non-clinical workers.” The persons are engaged in any capacity in the production and delivery of health services. These persons may be paid or volunteer, with or without formal training for their functions, and in the public or private sector. (JLI, 2004)

Health Human Power System : Health human manpower consists of a system composed of the following inter-related elements :

- Human resources development (HRD), as applied to human resources for health (HRH), includes the planning, production, and management of health personnel.
- Human resources planning “...is the process of estimating the number of persons and the kinds of knowledge, skills, and attitudes they need to achieve predetermined health targets and ultimately health status objectives” (WHO, 1978). Over the years this function has been broadened to include that of formulating human resources policy, in which the word ‘policy’ refers to statements made by relevant authorities that are intended to guide the allocation of resources and effort.
- Human resources production refers to “...all aspects related to the basic and post-basic education and training of the health labour force. Although it is one of the central aspects of the health manpower (development) process,
it is not under the health system’s sole control” (WHO, 1978). The production system includes all the educational and training institutions, which are increasingly a joint responsibility of service and educational institutions.

- Human resources management has been defined as the “mobilization, motivation, development, and fulfilment of human beings in and through work” (WHO, 1978). It “…covers all matters related to the employment, use, deployment and motivation of all categories of health workers, and largely determines the productivity, and therefore the coverage, of the health services system and its capacity to retain staff.” Management also encompasses programmes for in-service and continuing professional education, as well as evaluation.

**AYUSH**: An extremely important national initiative in India for ensuring appropriate utilization of technology and manpower of available indigenous systems of health in the country, viz. Ayurved, Yoga & naturopathy, Unani, Siddha, and Homeopathy, which fits very well with the ethos of the community and is quite acceptable by the people.

**Dimensions of the performance of the health work force (2)**

- Coverage refers to the extent to which the work force provides services to the various sub-groups of the population and supplies the whole range of services corresponding to their health needs.
- Productivity corresponds to the output extracted from personnel, such as patients seen per doctor, number of procedures per provider.
- Technical quality is the degree to which providers produce services which (1) respect the accepted technical norms, usually defined by professional associations, and (2) have a positive impact on the health status of users.
- Socio-cultural or service quality refers to the degree to which providers produce services which are culturally and ethically acceptable to users, meet their expectations, and are organized in a way that makes them accessible.

- Organizational sustainability is the degree to which the work force is utilized in a way that ensures (1) the maintenance of the capacity to provide needed services over time, both in quantitative and qualitative terms, and (2) the adaptation of services to changing needs and circumstances.

Each of these dimensions, individually or in combination, has an impact on health outcomes, responsiveness, even financial protection.

**Global & Regional Scenario**

The WHO estimates that there are a total of 59.2 million full-time paid health workers worldwide (World Health Report 2006). Of these, there are about 39.5 million health service providers and over 19.5 million management and support workers. It is estimated that there is a global shortage of more than 4 million doctors, midwives, nurses, pharmacists, dentists and support workers.

There exist considerable inter-regional as well inter-country variations in terms of availability of human resources. While the WHO South East Asia Region (South East Asia Region herein includes Bangladesh, Bhutan, DPR Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Timor- Leste and Thailand) has a quarter of the world’s population, it has only 12 per cent of the global health workforce. On the regional average, there are 29 essential health service providers per 10,000 population. This figure is well below the global average of 62 (See Fig. - 2 & 3). In addition, the Region also faces the imbalance in their distribution of these health workers, mainly between rural and urban areas as well as across the public and private sector.

**Fig. - 1 : Health Workers in All Sectors**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Health service providers</th>
<th>Health management and support workers</th>
<th>Health workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health sector</td>
<td>Professionals e.g. doctor, nurse</td>
<td>Professionals e.g. accountant in a hospital</td>
<td>e.g. physician employed in mining company</td>
</tr>
<tr>
<td>All other Sectors</td>
<td>Associates e.g. laboratory technician</td>
<td>Associates e.g. administrative professional in a hospital</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other communities e.g. traditional practitioner</td>
<td>Support staff e.g. clerical workers, drivers in a hospital</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Craft and Trade workers e.g. painter in a hospital</td>
<td></td>
</tr>
</tbody>
</table>

Some of the critical issues that countries are grappling to address include:

- Addressing issues of shortages of human resources
- Numerical and distributional imbalances of human resources that are not only wasteful but contribute to poor coverage of health services
- Poor training and technical skills of health personnel that impede the effective delivery of health care
- Inefficient skills- mix of health personnel
- Over-burdened district staff
- Personnel management issues involving non-existent career structures
- Inadequate staff supervision
- Lack of support and poor working environment
- Lack of opportunities for personal development and several other factors that lead to inefficient delivery of health care
- Migration of health personnel

Health Workforce in India

The state of human resources for health in India is diverse and multifaceted. They range from rigorously trained biomedical specialists and super-specialists at one end to an assortment of community and household based healers at the other. One half of this continuum is abounding with trained and qualified doctors of allopathic or modern biomedicine, psychiatrists, dentists, radiographers, a range of paramedical professionals - nurses, pharmacists, laboratory technicians, and a number of allied personnel - policy makers, health planners and managers, social workers, psychologists, researchers, health educators and promoters, and health technologists. While the other half is replete with the richness of India's traditional healing systems. Here one finds professionally trained and University qualified practitioners of Ayurvedic, Unani, Homeopathic, Siddha and Naturopathic medical traditions. One also comes across informally trained providers through apprenticeships, traditional and household birth attendants, a variety of healers and community or household elders learned in the art of traditional healing and indigenous remedies. These human resources can also be categorized into a public sector & a private sector.

A brief profile of main categories of health workforce is given below:

1. Doctors

As of 2007, a total of 6.96,747 allopathic medical practitioners practicing in the different states in India and, are registered with the different State Councils. Alongside, as on 2006, about 78096 dental surgeons were registered with different State Dental Councils. Table - 1 provides a state-wise overview of government allopathic doctors and dentists and average population covered. Moreover, around 26,252 allopathic doctors are part of the government’s network of rural Primary Health Centres (PHC) and Community Health Centres (CHC) across the country (See Table - 2 & 3). However, a comparison of these public sector doctors in the public system reveals sharp contrasts. Also, over 80% of the qualified private health care providers are concentrated in cities, towns and urban areas. In terms of the public health sector, a total of 22,608 doctors are located in PHCs and 5,117 specialists are posted at CHCs. Despite this there is a shortfall of about 1,410 doctors at the PHC and about 9,455 specialists at the CHC. A look at the data relating to specialists at CHC shows that in spite of around 10,615 positions being sanctioned, there are around 50% vacant positions.

Alongside, around 72,5338 AYUSH doctors are practicing in the different states in India and, are registered with the different State Councils Table 4 and 5 provide an overview of AYUSH (traditional medicine) infrastructure and human resources. All this data, clearly indicates the rural-urban divide in distribution of health personnel in the country. Various States have designed and implemented innovative measures to address these shortages of manpower in rural areas. Compulsory rural postings, incentives for rural posting and hiring of private specialists for providing essential services are some of the initiatives undertaken by the States. Integrating of AYUSH practitioners into general health service delivery system is yet another measure to enhance the reach of health care.

**Fig. - 2 : Health Service Providers (per 10,000 Population) by WHO Region, 2005**

<table>
<thead>
<tr>
<th>Region</th>
<th>Number per 10,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>19</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>29</td>
</tr>
<tr>
<td>Eastern</td>
<td>30</td>
</tr>
<tr>
<td>Mediterranean</td>
<td>45</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>62</td>
</tr>
<tr>
<td>World</td>
<td>131</td>
</tr>
<tr>
<td>Europe</td>
<td>142</td>
</tr>
<tr>
<td>Americas</td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. Data as reported by countries (compiled at WHO Regional Offices and Headquarters)
2. Reference year of data for some countries may differ from the reported year 2005
3. Health service providers include: (i) Physicians (ii) Nurses (iii) Midwives (iv) Dentists (v) Pharmacists (vi) Environmental and public health personnel (vii) Lab workers (viii) Community health workers (ix) other health workers

Source : Human Resources for Health in the South East Asia Region: Regional Priorities and Challenges, WHO SEARO, 2006
services in the community. Anesthetists and obstetricians are essential if CHCs are to function as FRUs. In order to meet these demands, the National Board of Examinations has expanded its post graduate equivalent courses and most states have also started training in-service MBBS doctors in short-term courses of anesthesia and emergency obstetric care.

2. Nurses and Midwives

The auxiliary staff is the backbone of the health system as they are the first point of contact between the health system and community. As of 2007, a total of 150,919 nurses (ANM, GNM and LHV) are registered in India (See Table - 6). The number of nurse midwives positioned in PHCs and CHCs is about 29,776 and the shortfall is 17,262 (See Table - 7). Migration of nurses (in-country and out-country) is one of the critical areas of concern.

Right from the Bhore Committee, different committees have emphasized the need to develop a huge pool of auxiliary health personnel to enhance the service delivery especially primary health care. The National Rural Health Mission (NRHM) has provided for additional ANM in high priority states as well as filling up of existing vacancies. Under RCH-II programme, some of the States too have experimented with additional ANM in sub-centers to boost the reach of RCH services.

3. Pharmacists

Pharmacists are an important source of health care provision, in rural as well as urban areas (Ray and Bhaduri, 2001). Even though they may not be perceived as doctors, households are known to procure modern medicines directly from pharmacists without going through a medical consultation. As of December 2007, around 681,692 pharmacists are registered in India (See Table - 6). At the level of PHCs and CHCs, 17,919 pharmacists health staff both to increase the reach of primary health care delivery as well as to allow trained professionals to deliver specialized services to a larger population.

Education and Training

Standardization and quality of education and training imparted in colleges is of utmost importance for development of human resources in health. The various statutory councils like the Medical Council of India (MCI), the Dental Council of India (DCI), Indian Nursing Council (INC), Central Council of Indian Medicine (CCIM), Central Council of Homeopathy (CCH), Pharmacy Council of India (PCI) and Rehabilitation council of India (RCI) are the appointed authorities establish uniform standards of higher qualifications in medicine; granting permission/recognition to educational institutions/practitioners; registration of doctors with recognized medical qualifications and address issues of ethics and standards of practice amongst others.

In India, the number of allopathic medical colleges had increased steadily during the years after Independence. There was a rapid growth of medical colleges from 25 in 1947 to 106 in 1981 and now to 289 (encompassing 31,298 seats at the MBBS level). Also, the colleges are not evenly distributed with the poorer states having a lesser number and the growth of medical colleges in the private sector has been tremendous. The report of the NCMH shows that there are 7,700 undergraduate seats in the north compared to 18,000 in the south: a total admission capacity of 25,500 seats per year. There are 55% seats in the public sector, a fall from 99% in 1950. This shows a rapid privatization of medical education, particularly in the Southern and richer states. For example in the states of Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Gujarat, Punjab, Haryana and Gujarat medical seats increased from...
about 60 in 1950 to over 9,500 in 2004. In contrast, in the states of Bihar, Jharkhand, Orissa, UP, Uttarakhand, Assam, North Eastern states, Rajasthan etc. seats increased from 0 in 1950 to less than 1000 in 2004 (NCMH, 2005). Some of this growth has been attributed to India’s liberalized economy post 1990 which saw investments in medical education increase as a response to favourable market conditions. Changes in the delivery of primary care is significant due to these developments. The high educational expenses involved are also one key factor that compels graduate doctors to look for better financial opportunities rather than practice in rural and primary care settings. There is at present an acute shortage of good teaching faculty in medical colleges, particularly acute in pre and para clinical subjects like anatomy, physiology, biochemistry, pathology microbiology, pharmacology, forensic medicine and community medicine (NCMH, 2005).

Training of ANMs and multipurpose workers is conducted through an elaborate network of State Institutes of Health and Family Welfare (SIHFW), Health and Family Welfare Training Centers (HFWTC), District Training Centers (DTCs) and ANM Training Centres (ANMTCs). As of March 2006, there are 356 ANM/MPW(P) Schools funded by Govt of India, 42 LHV promotional schools established by Govt of India and 56 MPW(M) training centres in the country. However, several of these suffer from shortages of good faculty and adequate budgets. Inadequate faculty implies poor quality of education. This is also true of nursing education, which has also witnessed shortfalls in the quality of education due to inadequate infrastructure, insufficient budgets, non-adherence to student-teacher norms, lack of commitment and accountability in educators for clinical supervision and guidance and insufficient hands-on training for students. In 2004, 61.2% of the 635 nursing schools and 165 nursing colleges were found unsuitable for teaching. De-recognition by the Indian Nursing Council has no impact as they continue to function with the permission of the State Nursing Councils (NCMH, 2005). There are also no specialized nursing disciplines in India like nurse anaesthetists or nurse practitioners as no formal system exists for the training of nurses and midwives to keep them abreast with the latest developments in the field.

The Pharmacy Council of India governs the education and functioning of the pharmacists in India. The minimum qualification required for registration is a D. Pharm. - a 2-year Diploma in Pharmacy. Higher qualifications include a 4 year Bachelor’s degree (B.Pharm.), a 2-year Masters’ degree (M.Pharm.) or a doctorate in pharmacy. Despite the presence of the Pharmacy Council, there are numerous unregulated and unauthorized pharmacy training centers that produce diploma trained pharmacists, whose skills are likely to be short of the required standards of registered pharmacists. Around 2% pharmacists were unaccounted for in the pharmacy workforce study in India (International Pharmaceutical Federation, 2006). In the case of paramedical professions too, like pharmacy and Laboratory technology, there is considerable diversity and dilution of standards of education. Pharmacy education is guided by a pharmacy council but in absence of enforcement of regulations, many unlicensed institutions provide diploma courses in pharmacy. There is no separate council to guide the training of laboratory technicians.

Recommendations concerning regulation of education, curriculum reforms and reorganization of statutory councils to maintain standards and quality of education have been the provided by different expert committees. Continuing education was recognized as an important measure to update the knowledge and skills of health personnel. Towards this objective, CME programmes were initiated in the 6th Plan period with National Academy of Medical Sciences as the nodal agency. While CME of medical personnel has received attention, CME of other categories of health personnel and their in-service training opportunities have had not been discussed adequately.

During the past few years, there has been an increase in dialogue and discussions on strengthening and reforming public health among the national, regional and state-wide public health associations. Public health education in India is provided at undergraduate level for medical, dental, veterinary, nursing and other allied health sciences by departments of preventive and social (P&S) medicine. There are about 210 departments of P&S medicine, which include 90 private institutions. The postgraduate programme at MD level is conducted in more than 60 institutes, while the Diploma in Public Health is provided in more than 15 institutes. Several postgraduate courses are provided as Diplomas, Masters, MD and Doctoral levels, in various public health disciplines. Alongside, several institutes of public health are being strengthened or are in the process of being established.

**Selected Key Challenges of Human Resources in India**

There exist various advantages as well as human resource related challenges in India. The advantages include availability of skilled work force; existence of an established system of training and educational institutions for medical and paramedical education; commitment by government to rural and population health. While some challenges are specific to the public and / or private sector, others are more cross cutting in nature.

1. **Information about Human Resources**: The exists lack of complete and current empirical data on different categories of medical, paramedical and allied human resources, required for efficient planning and forecasting, especially in the private sector. There is no adequate information about the private sector. Available data is primarily limited to the public sector. Furthermore, whatever data exists, it is not regularly updated and also, tends to concentrate on doctors and nurses. Moreover, available data shows large inter-state variations.

The existing registration systems of professional councils do not have robust processes for renewing registration; thus, data do not reflect attrition and dropouts. For instance, the Medical Council of India (MCI) gives comprehensive information on the total number of doctors in the country registered with various State Medical Councils. The data is available both State wise and year wise. However, the MCI data is cumulative and does not take into consideration attrition due to death, retirement, out of practice or migration within or outside the country. The MCI register does not give specific information regarding the
specialists; women doctors; public health workers and health capacity for production of health professionals, in particular, anaesthetists, and of women doctors in rural areas). There are numeric inadequacy of human resources. For instance, there is a mismatch between functions and skills; there is a lack of career development opportunities, transfer guidelines, performance appraisals and monitoring and supportive supervision. Last, but not the least, private practice by government doctors is also common, thereby impact delivery of health services. The public health system in India is plagued by issues of low motivation amongst its staff, high attrition rate, low productivity amongst others. The existing management policies and practices are out dated and ineffective - there is sharp public-private wage differential; unattractive incentive systems; unclear work roles, lack of recognition for good work; inadequate opportunities for career advancement and personal development; the recruitment, promotion and retirement policies are outdated; transfer policies tend to be unclear; further complicated by excessive political interference in transfers; there is a mismatch between functions and skills of staff; there is a lack of career development opportunities and of in-service training opportunities, poor working and living conditions for staff, and lack of systematic performance appraisals and monitoring and supportive supervision. Last, but not the least, private practice by government doctors is also common, thereby impact delivery of health services.

3. Shortage of human resources : Issues exist around numeric inadequacy of human resources. For instance, there is acute shortage of specialists (obstetricians, paediatricians, & anaesthetists, and of women doctors in rural areas). There are insufficient trained personnel for meeting the country's needs and demands for curative, preventive and promotive health. In part, this could be attributed to insufficient institutional capacity for production of health professionals, in particular, specialists; women doctors; public health workers and health managers; paramedical personnel. Moreover, large vacancies exist for key cadres in public sector across levels of health care system. This in turn, could be due to low/no incentives; poor working conditions etc. Irregular staff attendance or absenteeism aggravates the shortages. Overseas and in-country migration of personnel (doctors, nurses and paramedical) is also common leading to further shortages.

4. Inequitable distribution of human resources : Human resources are inequitably distributed between the public and private sectors, across states and regions, between rural and urban areas. For instance, 80-90% of all qualified and trained resources are present in the private sector (including AYUSH) and in urban “better off” areas. In part this could be attributed to a lack of deployment policies.

5. Skill Mix Issues : In order to cater to the health needs of the community and deliver promotive, preventive and curative health care, it is essential to have the right skill mix at all levels of health care. The skill mix is to be planned in a way to optimally utilize the available resources (including human resources) as well as to deliver the required services. Staffing of health facilities has to be directed towards providing personnel with the right skills. At the same time, it is also pertinent to enhance the skills of health personnel to function in situations demanding application of two or more skills.

6. Inadequate institutional infrastructure and capacity for education and training of all categories of HR : The need for trained human resources is enormous in India. For instance, under the National Rural Health Mission (NRHM) 6000 Block Mission Team and Block Resource Groups; 600 District level Mission Teams and Resource Groups; 35 State/UT level Mission Teams and Resource Centres; 1.75 lakh ANMs, 26000 LHV, 26000 Staff Nurses; 26000 Medical Officers into Skilled Birth Attendants and 2 lakh ANMs, Nurses, etc at induction level need to be trained and supported. Insipite of large scaling up initiatives, the existing institutional infrastructure is not adequate to meet the health requirements of the country. Furthermore, the education and training of human resources is affected due to low funding, lack of quality faculty, lack of effective regulation of the private sector, persisting and unchanged legacy of conventional educational models; sub-optimal technical standards in medical and paramedical education amongst others.

7. Competency of health workforce : In terms of competency of health workforce, pre-service training is not adequately geared to capture the challenges of service delivery; need-based, job oriented training is not yet practiced widely; there is an inadequacy of infrastructure and training equipment;
several training centres still use outdated teaching methods and materials; quality assurance mechanisms are often lacking and few opportunities exist for continuing education.

Possible Strategic Directions for Addressing the Challenges of Human Health Resources in India

Notwithstanding the various challenges of human resources, attempts are underway to address these critical issues. The launch of the National Rural Health Mission (NRHM) is a laudable step in this regard. Several initiatives for human resource development, manpower augmentation and strengthening of health management are already underway, both at the Centre and in the States/UTs. Some possible strategic directions that could be considered are:

Policy Making & Management
- Improve evidence base: Understand the health needs and demands of local populations.
- Systematically forecast and plan human resources to maximize responsiveness. The first step would be to set evidence based rather than population based norms; assessment of current workforce and future requirements with respect to the needs and demands of the population and the health system (A variety of diagnostic and planning tools are available and have been used in developing countries that use simulation models and scenario planning for forecasting, projecting and planning human resource. (Starkiene et al 2005)). The WPRO/RTC health workforce planning workbook is one such tool that provides steps for developing an HR plan and includes a simple computer based planning model (Dewdney, 2001).
- Need for human resources policy to be integral component of the health policy / policy documents.
- States to be persuaded to sanction posts for human resources especially for key public health cadres.
- Increase age of retirement for specialists from 60 to 62, Specialists could be allowed to continue upto 65 years provided willing to serve in underserved areas.
- Improve information systems: Professional councils could streamline and enforce periodic renewal of registration.
- Decentralizing human resource planning to local bodies and to district level.
- Public private partnerships for curative and preventive/promotive and non-clinical, especially for urban areas.
- Need for better understanding of the impact of migration on health care delivery, financial implications and health outcomes. Presently there is lack of adequate data on the nature of migration of health personnel in India.

Education & Training
- Increase training institutions for all types of health workers
- Relaxed norms for new medical colleges, especially in states without medical colleges
- Establishment of medical colleges in the public sector
- Existing manpower may have to be given short term course in public health
- Wherever possible PG seats in medical colleges to be increased on priority
- Explore possibility of a certificate course for accrediting informal providers including AYUSH practitioners

Enhancing Coverage
- Systematic forecasting and planning: based on needs rather than universal population size based norms
- Pool and optimize all available resources - allopathic & AYUSH; formal & informal
- Changing skill-mixes: allopathic & non-allopathic, formal & informal, doctors, nurses & paramedics to meet local health needs & demands
- Use of technology: computers, telemedicine, mobile phone technology, etc. to maximize reach and efficiency of all available health workers
- Innovations in medical education: reintroducing the shorter licentiate courses, recruiting students from rural educational backgrounds, incentives for rural service
- Innovative public private partnerships for increasing access to curative as well as preventive and promotive health care

Addressing Motivation
- Clear job roles and performance appraisals. Some States have develop job descriptions for various categories of staff
- Opportunities for in-service training and continuous professional development
- Financial and non-financial incentives for good work: linking promotions with qualifications/training and abilities rather than with seniority, and reducing political interference in transfers and promotions
- Better working conditions and safety from occupational hazards

Competence Building
- Create a cadre of community based providers who will be willing and able to live and work in rural areas, may be through revival of licentiate courses
- Improving standards of health education: improving technical skills as well as ration use of medicines and technologies
- Multi- skillling : e.g. an AYUSH practitioner trained in some essential allopathic treatments, training nurses as nurse anesthetists and as skilled birth attendants and training PHC doctors in emergency obstetric care and psychiatry
- Increase cadre of health providers who are trained in public health

Regulation
- Strengthening existing legislation and regulatory bodies to foster quality assurance for all categories of human resources.
- Innovative regulation - self regulation/peer regulation (e.g. accreditation); social franchising for informal sector.
- Licensing to ensure minimum standards.
- Decentralization of regulatory functions with strengthening of management capacity at all levels, including panchayati raj institutions.

To conclude, the health sector in India is at cross roads with having to deal with communicable diseases on one hand and rapidly increasing incidence of non-communicable lifestyle diseases on the other. This together with strengthening of health systems to deliver affordable, accessible and equitable services has been the thrust area of planning in recent years. One of the
key challenges in programme planning is the development and management of human resources.

In course-plotting the map for development of health sector, successive Five Year Plans have addressed various issues related to human resources and have recommended measures for building up this critical resource pool. From time to time, the Government has set up expert Committees to examine the existing health systems and provide recommendations on specific issues. Health workforce has featured prominently in these recommendations. Presently, various initiatives are underway to address these human resource challenges, both by the government across levels as well as other stakeholders. Adopting a multi-stakeholder approach with strong impetus on capacity building, addressing of systemic issues such as governance and stewardship, evidence based action and developing implementable initiatives would help address these human resource challenges.

References
Table 1: State/UT wise Number of Govt Allopathic Doctors & Dentists & Average Population Served in India 2007

<table>
<thead>
<tr>
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Notes: (1) Projected Population shown in the brackets relates to the reference period. (2) Tamil Nadu, the information relates to only the allopathic doctors in PHCs. (3) Uttar Pradesh figure for 1.1.2000 includes Uttarakhand also. (4) NA - Not Available; Source: Directorates of State Health Services
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Notes: NA: Not Available; *: Surplus

(1) One per each Primary Health Centre
(2) For calculating the overall percentages of vacancy and shortfall, the States/UTs for which manpower position is not available, should be excluded. Source: Rural Health Statistics, March 2007.
### Table - 3 : Total Specialists [Surgeons, OB&GY, Physicians & Paediatricians] at CHCs (As On March, 2007)

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Notes: NA: Not Available; * Surplus. (1) One per each Community Health Centre (2) For calculating the overall percentages of vacancy and shortfall, the States/UTs for which manpower position is not available, should be excluded (3) Break up of Specialist Doctors not available. Source: Rural Health Statistics, March 2007.
Table - 4 : State/UT wise Number of Registered AYUSH Doctors in India as on 1.1.2007

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<th>State/UT</th>
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<th>Siddha</th>
<th>Naturopathy</th>
<th>Homoeopathy</th>
<th>Total</th>
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Source : Dept. of AYUSH, MOH&FW / GOI as quoted in National Health Profile 2007
Table 5: Infrastructure Facilities and human resources under AYUSH (as of 1.4.2007)

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<th>Facilities</th>
<th>Ayurveda</th>
<th>Unani</th>
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<th>Yoga</th>
<th>Naturopathy</th>
<th>Homeopathy</th>
<th>Amchi</th>
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<td>725338</td>
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<td>839</td>
<td>154240</td>
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<td>63610</td>
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<td>8</td>
<td>10</td>
<td>185</td>
<td>385</td>
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<td>485</td>
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<td>Admission Capacity (Exclusive PG)</td>
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<td>99</td>
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Note: Total Figures of hospitals and beds and dispensaries includes one Hospital with 22 Beds and 86 Dispensaries of Amchi system respectively.

Table 6: State/UT Wise Number of Registered Nurses & Pharmacists In India

<table>
<thead>
<tr>
<th>State / UT</th>
<th>Total No. of Registered Nurses in India as on 31.3.2007</th>
<th>Pharmacists as on 31.12.2007</th>
<th>State / UT</th>
<th>Total No. of Registered Nurses in India as on 31.3.2007</th>
<th>Pharmacists as on 31.12.2007</th>
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<td>Nagaland</td>
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<td>17,186</td>
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<td>86,523</td>
<td>Tamil Nadu</td>
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</table>

Note: (1) Assam = Assam+Arunchal Pradesh+Manipur+Nagaland
(2) Maharashtra = Maharashtra+Goa+J &K
(3) Pendant = Pendant + J &K
(4) Tamil Nadu + Andaman & Nicobar Islands = Puducherry
(5) West Bengal = West Bengal + Sikkim
* Last year data for registered nurses in India; ** Estimated

Source: Indian Nursing Council, Pharmacy Council of India as quoted in National Health Profile, 2007
### Table - 7: Nurse Midwife/Staff Nurse At PHCs & CHCs (As On March, 2007)

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<th>S.No.</th>
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**All India**

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**Notes:**
- NA - Not Available; * Surplus.
- (1) One per Primary Health Centre and seven per Community Health Centre
- (2) For calculating the overall percentages of vacancy and shortfall, the States/UTs for which manpower position is not available, should be excluded. *Source: Rural Health Statistics, March 2007.*
### Table - 8 : Pharmacists at PHCs & CHCs (As on March, 2007)

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Notes: NA: Not Available; *: Surplus
(1) One per each Primary Health Centre and Community Health Centre (2) For calculating the overall percentages of vacancy and shortfall, the States/UTs for which manpower position is not available, should be excluded. Source : Rural Health Statistics, March 2007.
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Notes: Figures are provisional; NA = Not Available. HW = Health Worker, HA = Health Assistant, LHV = Lady Health Visitor
The promotion of Health needs to address a large number of areas, such as nutrition, environment, economic and social well being etc. Within this larger framework, access to essential medicines is a major determinant of health outcomes and an integral, and often crucial, component of health care. It has been estimated by different sources that 50% to 80% of the Indian population are not able to access all the medicines that they need. The World Medicine Report (2004) of World Health Organization finds that India is the country with the largest number of people (649 million) without having access to essential medicines. Given that India today is the 4th largest producer of drugs in the world and exports medicines to over 200 countries, this is clearly an unacceptable situation.

In an ideal situation all medicines that are researched and marketed should enhance therapeutic goals. Unfortunately the actual situation in the medicines market is much more complex. There are several issues that need to be addressed in order to pursue the broad goal of ensuring access to all medicines that a population may need.

The first issue relates to the price of medicines. Medicine prices often become a major determinant of access, especially in a country such as India where the income poor constitute a majority of the population. Studies indicate that poorer populations spend a larger proportion of health care expenditure in buying medicines. A World Bank Study suggests that out-of-pocket medical costs alone may push 2.2% of the population below the poverty line in one year (India - Raising the Sights: Better Health Systems for India’s Poor, World Bank, May, 2001). The situation is compounded by the fact that, in India, the proportion of private expenditure, of the total expenditure on health is one of the highest in the world - 84% as compared to just 16% public expenditure.

The Concept of Essential Drugs

We shall turn later to one obvious way of addressing this problem, which is to do with mechanisms designed to control medicine prices. Another approach to ensuring access has been promoted by the World Health Organisation since 1978. It is called the “Essential Drugs” Policy. The policy starts from an understanding that it is necessary for countries to prioritise which medicines should be made available to all its population(1). Each country would need to develop its priorities based on the country’s existing demographic profile and disease prevalence rates. The WHO defines “Essential Drugs” as those “that satisfy the health care needs of the majority of the population”. The WHO further suggests that “they should therefore be available at all times in adequate amounts and in the appropriate dosage forms, and at a price that individuals and the community can afford”.

The WHO, periodically, publishes a “Model” list of essential drugs (the first model list was published in 1978), but countries are encouraged to develop their own model lists, based on local conditions. The use of such lists have led to the improvement in the quality of health care and the reduction of costs. The broad criteria (2) that are recommended for selection of drugs for inclusion in such a model list include the following:

1. The disease burden in a particular country and data on the efficacy, safety and comparative cost-effectiveness of available treatments. The evaluation process bases itself on a comparison between various drug products and on cost/benefit considerations. The advantage of a new treatment over the existing one is then compared to its extra cost. Such information has proved very helpful in taking informed decisions about the selection of essential drugs. When adequate scientific evidence is not available on current treatment of a priority disease, choice of certain drugs may either be deferred until more evidence becomes available, or a choice can be made based on expert opinion and experience.

2. Stability of medicines in various conditions (temperature, humidity etc.), the need for special diagnostic or treatment facilities (i.e. if the use of a drug requires facilities for monitoring biochemical or other parameters in the patient) and pharmacokinetic properties are also considered if appropriate.

3. It is recommended that most essential medicines should be formulated as single compounds. Fixed-ratio combination products are selected only when the combination has a proven advantage in therapeutic effect, safety or compliance over single compounds administered separately, viz. combinations to treat Tuberculosis and Malaria.

4. As cost is an important factor that determines access, the ability of populations to afford a drug (or of the public health system to be able to procure it) is an important consideration. In cost comparisons between medicines, the cost of the total treatment, and not only the unit cost of the medicine, is considered. Cost and cost-effectiveness comparisons are made among alternative treatments within the same therapeutic group. However, the absolute cost of treatment does not constitute a reason to exclude a medicine from the Model List if other selection criteria are met (i.e. if medicines required to treat a disease of major public health importance are expensive, but no cheaper alternatives that are safe and effective are available, then the medicines should be included in the list).

5. As the list is aimed at facilitating availability, countries are also encouraged to factor in issues such as local manufacturing capability and availability.

It needs to be underlined that the formulation of a national essential drugs list is only the first step towards the realisation of a policy to promote access to essential medicines. For the list to be useful, its application needs to be integrated in the formulation of a national medicines policy. This would mean that the national policy should include measures to ensure that the medicines in the national list are available to all who need them, are affordable and of good quality, and ideally are locally manufactured so that a reliable and constant supply is ensured.

Second, the national policy on use of medicines should promote the use of medicines on the list as a matter of first choice, both
in the public and private sector. This requires constant updating of the knowledge of prescribers, so that prescription practices are tailored to the essential list. Further, the essential drugs list should be accompanied by the development of evidence-based standard treatment guidelines. If prescribers are trained to use the essential drugs list as a guide, they also become more familiar with a relatively small set of medicines and are better able to recognise and report adverse events related to medicines use. Moreover, a limited range of drugs in the supply system may lead to economies of scale and competition between manufacturers, further reducing the costs.

An Essential Drugs Policy has been critiqued in certain quarters as one that restricts the freedom of practitioners to prescribe according to their choice. To the contrary a well designed Essential Drugs Policy is geared towards assisting prescribers in making a choice based on the best available evidence. An Essential Drugs list, ideally, should include all medicines that are necessary to treat more than 95% of illnesses that a physician is likely to encounter. This means that a policy based on the Essential Drugs List does not preclude the use of medicines outside the list, when it is so warranted.

An Essential Drugs List also needs to be dynamic, that is it needs to be updated periodically (every 2-3 years) in order to be able to capture recent advances in therapeutics and changes in disease prevalence scenarios. The WHO’s model list is also a graded list of essential drugs, and countries are encouraged to do the same. A graded list indicates at which level of care (primary, secondary, tertiary) a certain medicine should be recommended. So while some medicines may be needed for all levels of care (e.g. an antipyretic like paracetamol), others may be needed at the secondary and tertiary levels only, or at the tertiary level only. The grading that is built into an essential drugs list is also a helpful planning tool, as it helps public health authorities to decide which medicines should be made available at appropriate levels.

**Rational Use of Medicines**

As we have seen above, an Essential Drugs Policy is a prerequisite for ensuring that physicians prescribe medicines based on sound scientific evidence. An ideal situation would be one where the only medicines that are available for prescribing, are those that are scientifically validated and recommended in standard text books that students read in medical college. Unfortunately the real situation is very different, and students fresh out of college are suddenly confronted with a plethora of medicines that they have read little or nothing about. This happens because rational treatment goals and the goals of commerce that are pursued by drug manufacturers, are largely at variance. Drug manufacturers are driven by the need to maximise profits, not by the need to optimise therapeutic goals.

In India, an average family spends Rs.2,000 in buying medicines and on diagnostics. It has been estimated that at least 50% of this expenditure is incurred on irrational or unnecessary drugs and diagnostic tests. This adds up to a colossal waste of Rs.15,000 - 20,000 crores every year, and amounts to an average unnecessary drain of Rs.1,000 per year for every family. The first, and best known, part of irrational practices in health care is related to irrational prescription of drugs. WHO has defined irrational prescribing as use of a therapeutic agent when the expected benefit is negligible or nil or when its usage is not worth the potential harm or the cost.

**Irrational drug prescribing**: It can occur when the medication prescribed is incorrect, inappropriate, excessive, unnecessary or inadequate. Accordingly, the types of Irrational Prescribing are:

1. **Incorrect prescribing**: This means the use of wrong medicines to treat a disease or the use of medicines when no medicines are required.

2. **Inappropriate prescribing**: This pertains to use of medicines that are not suitable for the particular patient, viz. use of medicines that may be harmful in pregnancy, in children, in older people, etc.

3. **Over prescribing**: This is related to use of too many different kinds of drugs to treat a disease, when fewer (or just one) drugs would have sufficed. It also includes use of drugs for long periods, when a shorter course of treatment is adequate.

4. **Multiple prescribing**: This means the prescription of more than one drug of the same kind (i.e. drugs which have the same effect) to treat a disease.

5. **Under prescribing**: This has to do with prescribing medicines for too short a duration or in inadequate dosage.

All these irrational practices are rampant in India. The reasons are manifold. One is to do with the proliferation of a large number of drugs in the Indian market that are either irrational or useless. With rapid developments in Science and Technology there has been an explosion in the number of drugs which are available in the market. Unfortunately only a small minority of drugs entering the market offer an advantage over existing drugs. A study in the U.S. showed that of the 348 new drugs introduced from the 25 largest US drug companies between 1981 and 1988, 3% made an “important potential contribution to existing therapies”; 13% made a “modest potential contribution; and 84% made “little or no potential contribution”. A more recent study by the French journal, Prescrire International, estimated that out of 2257 medicines introduced in the global market between 1981 and 2000, 0.31% were a major therapeutic innovation and 2.96% were an “important” therapeutic innovation, while 63.23% “does not add to existing clinical possibilities”. The situation in India is no different and probably worse, given the fact that our Drug Control mechanisms are much more lax than in developed countries. The only reason why Indian studies are not available is because there is virtually no mechanism in India to monitor the use of irrational and hazardous drugs.

As a consequence there are an estimated 60,000 to 80,000 brands of various drugs available in the Indian market. On the other hand the WHO lists a little over 350 drugs which can take care of an overwhelming majority (over 95%) of the health problems of a country. In this situation of extreme anarchy the task of an already overstretched Drug Control Authority becomes almost impossible to cope with. A majority of the estimated 80,000 products in the market are either hazardous, or irrational or useless.
The pharmaceutical companies and the government regulatory bodies need to share the blame for allowing such a situation to develop. But all this would not be possible without the active involvement of the medical profession, who contribute by prescribing such irrational and useless drugs. One reason for this is the fact that there is almost no source of regular unbiased, authentic information on drugs available in the country. Given the rapid changes in treatment procedures and introduction of a large array of new drugs, medical practitioners need to update their knowledge regularly. Such a system of continuing medical education is largely absent in this country, and most doctors do not find the need to take time out from their busy practice to update their knowledge by reading the most recent books and journals. Thus we have the sad practice of a bulk of medical practitioners depending on promotional material supplied by Pharmaceutical companies. Obviously such promotional material only provides information to doctors, with a view to maximising the sale of the products being promoted. It thus makes it possible to sell a large number of useless and irrational drugs.

The problem is not limited to just a question of irrational or useless or harmful drugs. Rational, or even life saving drugs can be used in an irrational manner. The commonest problem is the unnecessary use of drugs. Thus, often we see expensive antibiotics being used for trivial infections. Moreover this is often accompanied by wrong dosage schedules. Another problem is the prescription of a large number of drugs for a simple ailment, when one or few drugs would have sufficed. Doctors, in many cases, when they are not sure of the diagnosis prescribe a large no. of drugs to cover for all the possibilities. Thus a patient coming with fever may be given some antibiotic, a drug to treat malaria, a drug to treat typhoid, etc. It may turn out that the patient was just suffering from a viral fever, which could have been treated with some paracetamol tablets, only. Such prescription practices increase the cost to the patient, unnecessarily exposes the patient to potential side effects, and in the case of antibiotics leads to drug resistance, i.e. a situation when these antibiotics become useless when they are really required.

Patients must also realise that if a Doctor advises no drugs, he is giving as valuable (or in some cases more) advice as someone who prescribes a large number of drugs. All illnesses do not require drugs -- in fact a large number of illnesses are "self limiting", i.e. the body cures itself without the use of drugs.

While the costs of individual drugs is very important, what affects patients is the total cost of treatment. Irrational drug use increases treatment costs, at times enormously, by affecting the patients is the total cost of treatment. Irrational use is contrary to scientific evidence. There is insufficient data in India to quantify the impact on drug prices. An indication may however be found from a recent study in the US (4), that examined the quantum spent on promotion by US drug companies in the US market. The study concluded that the drug industry spent around US$61,000 in promotion per physician in 2004, and further that as a percentage of US domestic sales promotion consumed 24.4% of the sales.

Effective medicines have an obvious marketability and demands are self-generating. But any drug that is therapeutically not valid needs artificial generation of demands and contributes to unethical marketing practices. Irrational prescribing practices are often initiated and maintained by marketing techniques of the drug industry. The industry spends 20% of its annual sale or about Rs. 3,000 crores in advertising; this works out to about Rs. 50,000 per doctor per annum and each doctor prescribes drugs worth Rs. 250,000 per annum.

Drug companies have been known to use incomplete or misleading evidence to promote irrational medicines. Physicians are sought to be influenced by a variety of inducements and sponsorships. Such a practice gets perpetuated also because prescribers depend on information provided by drug companies, as there is scant availability of unbiased information on the rational use of medicines.

Unlike in India, many countries control the promotion of medicines through ethical guidelines, such as the model guidelines authored by the WHO (5). Policies in India need to consider the fact that large investments made by drug companies push up medicine costs and promote irrational prescription practices.

**Prescribing of Medicines by Generic (non-proprietary) Names**

A fresh medical graduate is often confronted with a situation that medical college seldom prepares them for - the need to make sense of a huge variety of brand names of medicines. While medical education relies almost entirely on familiarising students with the scientific names of medicines (i.e. generic or non-proprietary), an overwhelming bulk of prescribing is done by the use of Brand (proprietary) names. The promotion of generic prescription has always been seen as a primary requirement for ensuring of rational use of medicines. It is globally acknowledged that aggressive promotion of Branded
medicines by pharmaceutical companies, much of which is unethical, leads to irrational prescription practices. Prescriptions based on Brand names also allow commonly prescribed branded drugs to be priced much higher than generic equivalents. In India the situation is further complicated by a lack of avenues and requirements for continuing medical education - thereby leaving doctors at the mercy of pharmaceutical companies to update their knowledge about newly introduced medicines. This opens the door for prescription practices that are driven, on many occasions, not by therapeutic needs but by promotion of specific brands.

For efforts aimed at encouraging prescription of medicines by their generic names to be successful, there are some crucial areas that need to be addressed. Critiques of the mandatory introduction of generic prescription argue that prescriptions based on generic names compromises the ability of doctors to prescribe quality medicines. The argument is premised on the belief that there is a major variation in the quality of medicines in the Indian market, thereby requiring brand names to identify quality drugs. While the concern for quality is not incorrect, it is also true that substandard drugs are also produced or marketed by large companies with big reputations - both Indian and Foreign. It is also a common practice today for big companies to get their drugs manufactured in the small scale sector. Thus the issue is really one of implementing quality control measures at all levels which if not done will always compromise attempts to promote prescriptions by generic names. If issues about quality remain doctors could well just shift to prescribing by the generic name and identify the company as well. This would defeat the whole purpose of introducing generics to foil monopoly pricing based on brand images.

The other issue is the necessity to have qualified pharmacists at retail outlets for medicines. This is a requirement if Chemists are to have the authority to substitute generic versions of the same drug. Today there are not enough pharmacists to service all medicine shops and the issue needs to be addressed. What also needs to be ensured is that pharmaceutical companies do not start targeting Chemists more aggressively to promote their drugs once generic names are introduced.

**Pricing of Medicines**

Finally, the big issue that determines the access to medicines for poor people, relates to how medicines are priced. The WHO states (6) : “In 1975, less than half the world’s population were estimated to have regular access to essential medicines. New estimates from the 1999 World Medicines Survey show that this fraction has fallen to around one third. However absolute number of people without access has remained unchanged, at about 1.7 billion. Getting the right medicines to the people who need them at the time they need them remains a major challenge.”

Studies indicate that poorer populations spend a larger proportion of health care expenditure in buying medicines. Given, that a very large portion of this cost is borne by patients themselves, there is clear evidence that the cost of medicines is a major barrier to access to health care. A World Bank Study (7) suggests that out-of-pocket medical costs alone may push 2.2% of the population below the poverty line in one year.

The situation is compounded by the fact that the proportion of private expenditure, of the total expenditure on health is one of the highest in the world - 84% as compared to just 16% public expenditure. The NSS (National Sample Survey) 55th round on consumer expenditure shows that 77% of health expenses in rural areas and 70% in urban areas is on medicines alone. Poorer the people, larger the share of expenses on medicines. Clearly the situation requires attention from regulatory agencies in the form of controls on the prices of medicines. Price control is a form of market regulation that limits the capacity of the supplier to set the price of a product. Price control usually takes the form of a maximum price (ceiling), which means that the supplier is allowed to set a lower price. The mechanics of price control usually differ from country to country, but the end result is normally the same: the pharmaceutical companies are prohibited from charging a market-based price for the products they manufacture. Interestingly, most developed countries implement price regulation for pharmaceuticals that cover the majority of their population. The methods of regulating prices vary. In stark contrast, the majority of developing countries do not regulate pharmaceutical prices.

India introduced a very stringent regime of price control on medicines in 1978, whereby the prices of 378 medicines were controlled. However, in the last thirty years the price control regime, that is administered by the Drug Price Control Order (DPCO) has been significantly relaxed. Today only 74 medicines are under price control, and as the last time the list of medicines under control was drawn up was in 1995, many of the medicines under price control have ceased to be of importance.

The decontrol of medicine prices in India in the last 30 years have been premised on the argument that drug prices do not need to be controlled if there is competition in the market, i.e. if there are several companies who market the same medicine under different brand names. However the experience has been that this assumption is largely false. This is shown to be so by the fact that most top-selling brands are more expensive than brands of other companies making the same medicine, and in some cases the most expensive among all competitors.

The reason why competition in the market does not depress medicine prices is manifold. First, in the pharmaceutical market the decision to buy a drug is not taken by the consumer but is based on a Doctor's prescription or a pharmacist's choice. Prescription practices of doctors are prone to being influenced by marketing strategies of drug companies, and chemists are also influenced by inducements provided by companies. Second, unlike in the case of consumer goods, patients do not have the choice not to buy if they are in need of medicines. Third, in India over 80% of medicines are bought by patients from their own finances. This is the reverse of the situation in most developed and many developing countries, where public health insurance or the public health services provide for over 80% of medicines consumed. Thus patients in India, especially poor patients bear the brunt of high medicine prices.

The shift in policies in India, that has led to most medicines being outside price control today, have been increasingly questioned. The Government is believed to be actively considering the imposition of price controls on a much larger number of medicines.
Drug Policy Formulation in India

Drug policies in India are formulated by the Ministry of Chemicals and Fertilizers. In addition, in 1997, the National Pharmaceutical Pricing Authority (NPPA) was instituted as an independent body to take decisions on pricing. The Ministry of Health and Family Welfare looks into the issues of quality, manufacturing, sales and distribution of drugs. These two functions are performed in isolation and there is minimal coordination between the two major areas of policy making in the pharmaceutical sector.

As a consequence the drug policy focuses only in the areas of production and pricing. Drug policies, thus formulated, have not incorporated a focus on health. In successive policies, the emphasis has shifted to addressing the viability of the private pharmaceutical industry. In the absence of a coherent link between health needs and the policies on drug pricing, issues of equity have been generally ignored.

In addition there are other Acts that regulate the use of medicines. The prominent ones are the Drugs and Cosmetics Act that deals with manufacturing and quality norms, prescribing norms etc. and the Magic Remedies Act that deals with the promotion and advertising of medicinal products. The Drug price Control Order (DPCO) lays down regulations for controls over drug prices. The Magic Remedies Act, especially is outdated, and requires a major overhaul as it contains provisions that are of little or no relevance in today's context.

According to guidelines formulated by the WHO (8), a national drug policy is a commitment to a goal and a guide for action. It expresses and prioritizes medium- to long-term goals set by the government for the pharmaceutical sector, and identifies the main strategies for attaining them. It provides a framework within which the activities of the pharmaceutical sector can be coordinated. It covers both the public and the private sectors and involves all the main actors in the pharmaceutical field. In the broadest sense, a national drug policy should promote equity and sustainability of the pharmaceutical sector. The present practice in of drug policy making in India is thus at variance of such accepted norms.

There is thus, the need to formulate a National Pharmaceutical Policy that addresses the critical issue of universal access to essential medicines. Such a policy needs also to harmonise different aspects of the Drugs and Cosmetics act and the Magic Remedies Act. This policy should be prepared by an inter-sectoral committee of the Ministry of Health & Family Welfare and Ministry of Chemicals & Fertilizers after discussions with all sections that have a stake in the pharmaceutical sector. The two should jointly constitute a National Drugs and Therapeutic Authority, which should be a statutory body with powers to regulate all aspects of the National Pharmaceutical Policy.

Summary

Access to essential medicines is a major determinant of health outcomes and an integral, and often crucial, component of health care. An approach to ensuring access has been promoted by the World Health Organisation since 1978 called the “Essential Drugs” Policy. It defines “Essential Drugs” as those “that satisfy the health care needs of the majority of the population”. The WHO further suggests that “they should therefore be available at all times in adequate amounts and in the appropriate dosage forms, and at a price that individuals and the community can afford”. The WHO, periodically, publishes a “Model” list of essential drugs but countries are encouraged to develop their own model lists, based on local conditions. The national policy should include measures to ensure that the medicines in the national list are available to all who need them, are affordable and of good quality, and ideally are locally manufactured so that a reliable and constant supply is ensured. An Essential Drugs List also needs to be dynamic, that is it needs to be updated periodically.

WHO has defined irrational prescribing as use of a therapeutic agent when the expected benefit is negligible or nil or when its usage is not worth the potential harm or the cost. Irrational drug prescribing can occur when the medication prescribed is incorrect, inappropriate, excessive, unnecessary or inadequate. Irrational prescribing and aggressive promotion of medicines by drug companies go hand in hand. Policies in India need to consider the fact that large investments made by drug companies push up medicine costs and promote irrational prescription practices. The promotion of generic prescription has always been seen as a primary requirement for ensuring of rational use of medicines.

Finally, the big issue that determines the access to medicines for poor people relates to how medicines are priced. Clearly the situation requires attention from regulatory agencies in the form of controls on the prices of medicines. Price control is a form of market regulation that limits the capacity of the supplier to set the price of a product. In India the price control regime, administered by the Drug Price Control Order (DPCO) needs to be more stringent.

Drug policies in India are formulated by the Ministry of Chemicals and Fertilizers. In addition, in 1997, the National Pharmaceutical Pricing Authority (NPPA) was instituted as an independent body to take decisions on pricing. The Ministry of Health and Family Welfare looks into the issues of quality, manufacturing, sales and distribution of drugs. These two functions are performed in isolation and there is minimal coordination between the two major areas of policy making in the pharmaceutical sector. In addition there are other Acts like Drugs and Cosmetics Act, the Magic Remedies Act, Drug price Control Order (DPCO) that regulate the use of medicines. There is thus, the need to formulate a National Pharmaceutical Policy that addresses the critical issue of universal access to essential medicines and need for joint constitution of ministries to form a National Drugs and Therapeutic Authority, which should be a statutory body with powers to regulate all aspects of the National Pharmaceutical Policy.

Study Exercises

Long Question : What are the possible approaches/policies to ensure universal accessibility and availability of Drugs? Describe Essential drug policy in India.

Short Notes : (1) Essential Drug policy (2) Rational prescribing of drugs
Medical Education in India

There were 30 medical colleges in India at the time of independence which have expanded to 262 medical colleges now. The annual turn out is of about 24000 medical graduates every year. The system of medical education in India is basically westernized and hospital oriented since its origin about 150 years ago. This has not undergone much change over all these years. There is still lack in the production of basic doctors, competent enough to provide primary health care and meet the requirements at the grass root level. Health related education and training has become more urban oriented, doctor-centric and technology-driven; the quality, quantity and distribution of the health oriented human resources being produced leaves much to be desired. Over the years, the bulk of the growth in medical education institutions has occurred in the richer states, potentially leading to increased regional inequity in access.

Aim of medical education

The aim of medical education is to:
1. Impart theoretical knowledge about patient care and health needs.
2. Teach practical procedures for diagnosis, treatment, communication and management.
3. Create competence and motivation to serve the health needs of the country and its people.

Current Scenario

The medical education system in India is a heterogeneous system. It is broadly classified into:
- Allopathy, or Non Indian System of Medicine (NISM)
- Indian Systems of Medicine and Homeopathy (ISMH)

There are at present, the following number of recognized medical, dental and nursing colleges in the country, with the respective number of seats:
1. Medical: Colleges = 262; Seats = 30558
2. Dental: Colleges = 204; Seats = 11850
3. Nursing: Colleges = 116; Seats = 2845

Higher Organisation

The medical education system in India comes under the Ministry of Health and Family Welfare which has the Department of Health, the Department of Family Welfare and the Department of ISMH. It is headed by the Union Minister. There is also a Minister of State for Health and Family Welfare. The Health Secretary is an IAS officer who looks after the affairs related to the Department of Health and the Department of Family Welfare, whereas the Department of ISMH has its own Secretary. The Director General of Health Services is associated with the Department of Health. Besides, there are various technical officers in the department. The flow chart is shown in figure-1.

The Medical Council of India: The Medical Council of India was established as a statutory body under the provisions of the Indian Medical Council Act, 1953 which was later repealed by the Indian Medical Council Act, 1956. A major amendment in the Indian Medical Council Act, 1956 was made in 1993 to stop the mushroom growth of medical colleges, increase of seats and starting of new courses without prior approval of the Central Government in the Ministry of Health and Family Welfare. The main functions of the Council are:
1. Maintenance of uniform standards of medical education at undergraduate and post-graduate level
2. Maintenance of Indian Medical Register
3. Provisional/permanent registration of doctors with recognised medical qualifications and registration of additional qualifications

MCQs

1. It is recommended that essential drug list in any country is to be updated at least every (a) 1-2 yrs (b) 2-3 yrs (c) 6months (d) 3months
2. Irrational drug prescribing can occur when the medication prescribed is (a) Incorrect (b) Inappropriate (c) Excessive (d) All of the above
3. In India Drug policies are formulated by the Ministry of (a) Chemicals and Fertilizers (b) National Pharmaceutical Pricing Authority (c) Ministry of Health and Family Welfare (d) None of the above
4. An Essential Drugs list, ideally, should include all medicines that are necessary to treat more than ___% of illnesses that a physician is likely to encounter. (a) 100 (b) 95 (c) 90 (d) 50

Answers: (1) b; (2) d; (3) a; (4) b.

References

6. The World Medicines Situation, WHO 2004
7. India - Raising the Sights: Better Health Systems for India’s Poor, World Bank, May, 2001
Reciprocity with foreign countries in the matter of mutual recognition of medical qualifications.

**Fig. - 1 : Hierarchy of Medical Education in India**

Universities and Deemed Universities: The function of the universities is to ensure proper and systematic instruction, teaching, training and research in the institutions affiliated to them. They ensure balanced growth in the various fields of medical sciences and also maintain uniformity in various courses offered by the institutions affiliated to them. A doctor passes out of a medical college affiliated to a university and gets registered with the MCI and/or the State Medical Council in order to practice medicine.

**Structure of Medical Education in India**

Most of the medical colleges in the country are located in urban areas. There is a geographic mal-distribution of the medical colleges all over the country. The six states of Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, Kerala and Gujarat have a total of 65% of the medical colleges and 67% of total medical seats in the whole country. The North Eastern states, on the contrary, have only 3% of medical colleges. Almost 50% medical colleges in the country are in the private sector. This number has more than doubled from 60 in 2000 to 131 in 2006. The number of seats at the undergraduate level has increased by nearly 5 times while the number of institutions has increased by eight times during 1970 to 2004.

**ISMH:** The developments in ISMH education parallel these trends. The number of ISMH institutions increased by nearly 70 percent over the last two decades. Nearly 82 percent of all ISMH enrollment capacity in training and 76 percent of all ISMH training institutions are in the private sector. Almost all of the increase in ISMH institutions during the last two decades has occurred in states with the richest of the population. The Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) was established as Department of Indian Systems of Medicines and Homoeopathy (ISM & H) in Ministry of Health & Family Welfare in March, 1995, to oversee the educational process in this system.

**Process of Medical Education**

**Selection of Students:** The selection of students is based on the marks obtained by students on the basis of a MCQs test. The test is usually directed towards testing of mere recall of facts. The humanistic approach, attitudes and communication skills are hardly assessed. Merit in the board examinations or competitive tests is not combined with any aptitude test (except in few institutions that have their own entrance exam) to form the criteria for selection tests. However, there is also non-availability of appropriate objective instruments for testing aptitude in large number of students at present. Besides, the private medical colleges offer subsidized “merit seats”, based on a common entrance exam. Remaining seats are offered through “management” quota, apparently on considerations of merit, but do require substantial fees.

**Teachers:** Criteria are laid down explicitly by the MCI in terms of the basic University or equivalent qualification, the experience, the number of papers published (in national and international journals), as well as the number of teachers authorized to a particular type of medical institution.

**Courses:** For the undergraduate, the course is for a period of 5 years. The pattern of curriculum is split up as follows:

- 1 year: basic sciences
- 1 1/2 years: para-clinical sciences
- 2 years: clinical subjects

Compulsory rotatory internship has to be there for a period of 1 yr after completing the final year. Recent recommendation has been of a compulsory rural phase for all graduates before they can be awarded the bachelor’s degree. For the post-graduate, there are three main types of “post-graduate” training opportunities:

- 3 year residency programs i.e. MD or MS
- 1 or 2 year long diploma training programs and DNB

For super specialization, there are super-specialty residency programs in medical and surgical specialties for those who have completed the MD/MS or the DNB.

**Curriculum:** The curriculum is well laid out. Horizontal and vertical integration of the subjects is advocated e.g. anatomy with physiology and anatomy with surgery, respectively. The division into theory classes and practicals for all subjects as well as topics is well laid out.

**Assessment:** Periodic assessment is advocated, both objective and subjective. But actually, it is the textual knowledge that is mainly assessed.

**Internship:** Compulsory rotatory internship for a period of one year is there, following the completion of the undergraduate course. 3 months each is laid down in the field of medicine (and allied subjects), surgery (and allied subjects), obstetrics and gynaecology and preventive and social medicine.

**Specialisation:** All medical graduates are eligible for specialization after completion of internship. Seats for the same are available through an all India exam, state PG medical entrance exams and PG medical entrance exams of private institutions.

**Issues**

**Current Scenario:** The medical education system in India is more westernized. The western model has not been adapted well to Indian realities. The settings for training are different than the ground realities. Doctors are usually not competent enough to provide primary health care. Medicine used to be a highly sought after profession earlier. But it is minus the “nobleness” now. The status is falling now and it is losing the
luster. Over the years, there has been a disproportionate growth of institutions which has been more in richer states. This has lead to increased regional inequity.

**Higher Organisations**: The higher organizations tend to have a dictatorial approach. The MCI wants at least a particular number of teachers in a medical institution, at the same time itself being the body which has a documented deficiency of many at all levels. It is ironical when the MCI itself fails to understand such problems and derecognises institutions for lack of teaching faculty. Often there are politically motivated decisions as well as vested interests, with many politicians owning medical colleges. At the top positions in the government, there are bureaucrats instead of technocrats who handle the affairs related to medical education. The former can hardly be trusted for their knowledge of technical matters as the latter can be.

**ISMH**: It is not clear as to where do these doctors practice. Many are in competition with allopaths. Many more actually are practicing allopathy. This is happening especially in the private nursing homes and clinics where they are employed at lesser salary and allowed to practice allopathy. Also, we do not know of any regulatory body for them like the MCI.

**Issues with Process of Education**

**Selection of Students**: The selection of students is by MCQs tests. This involves a mere recall of facts. There is no subjective assessment of aptitude of the students. At the same time, it is actually difficult to do an aptitude test on such a large scale, as lakhs of students appear in the medical entrance exams every year. In assessing the students by a MCQs test alone, the approach, attitudes and communication skills are hardly assessed.

**Selection of Teachers**: While selecting teachers, aptitude to teach is hardly assessed. A good student may not be a good teacher since there is a difference in acquiring knowledge and being able to impart the same. Adequate training in the techniques of teaching is rarely imparted to them. Teachers are not held accountable to the students. The teacher’s performance is taken for granted and his or her competence in teaching is never questioned. There isn’t much accountability and monitoring of the teaching faculty towards fulfillment of their teaching responsibilities. Besides this, it is observed that research is taking precedence these days over patient care, in the clinical specialities.

The last inspection conducted by the MCI showed that a large number of doctors are claiming employment as medical teachers in more than one medical college at the same time. It was being observed that the names of the doctors shown as medical teachers in a particular medical college were getting repeated in the inspection reports of certain other medical colleges, in the same proximity of time. Apparently, the medical colleges and the medical teachers were indulging in such activities only to show to the inspection team of the Council that the colleges concerned are fulfilling the minimum requirement for the teaching staff for seeking permissions/renewals. The pathetic state can be gauged by the fact that there are reports that even in government medical colleges, teachers are transferred from one college in the state to another, just before an anticipated MCI inspection, so as to show to the inspecting team that there is no shortage of teaching staff!

**Continuing Medical Education**: The concept of Continuing Medical Education (CME) is a good one that helps keep the professionals abreast of the latest knowledge. But a resistance to change has been observed on the part of doctors. Most lack motivation to attend CMEs. These days, CMEs have been reduced more to pharmaceutical industry driven activities only. Many doctors utilize this opportunity for furthering their own careers.

**Curriculum**: The pattern of curriculum is fragmented. Subjects are taught in isolation. There is little or no integration of the basic sciences with the clinical disciplines. Often there is neglect of realities of rural and remote areas. The medical graduate, after passing out, finds himself more at home in better developed countries, than in the villages of India since he has been trained at an institute akin to a tertiary care set-up. There is over-burdening with theoretical knowledge. Due attention is not given to subjects like medical ethics, behavioral sciences, communication skills and managerial skills. This puts the medical graduate at a disadvantage when after passing out he/she gets posted to a PHC and has to manage the men, materials and money all alone.

Over the years, there has been a tendency to increase the number of subjects in which the student is to be independently assessed. For instance, fifty years back, medical curriculum had 10 subjects which were to be studied in 5 years; today a medical student has to cope up with 13 subjects in 4 ½ years; the number of subjects may further increase in the next couple of years to come.

**Assessment**: It is common knowledge that learning is driven by the method of assessment. Examinations are knowledge dominated rather than skill oriented. Performance of students is assessed in comparison to other students (peer-referenced), or norm-referenced rather than a standard criterion (criterion-referenced). This is what happens in practice, since most of the examinations in medicine do not have a clear criteria laid down beforehand for the purpose of assessment. Regular feedback is not provided to students during the training. There is dilution of the requisite standards of teaching and the transparency in examinations and results are also doubtful in most institutions.

A senior faculty of a premier medical college in India says, “We accept racehorses and turn out asses”, meaning thereby that we accept the best students into the college after an entrance exam, but do not teach them as they should be taught, before they pass out as doctors.

**Clinical Skills**: Investigative medicine has largely taken over these days. This is likely to increase the cost of medical care and learning. Learning on the part of the students is inadequate to make a sound clinical judgement. Skills of traditional clinical bedside history taking, physical examination, formulation of differential diagnosis, and planning a diagnostic and management plan for various problems are not well inculcated.

**Internship**: The period of internship is not effectively utilised to develop and refine clinical skills. More often it is utilised
for preparation of postgraduate entrance examinations. Irregularities in attendance have been observed, especially during rural attachments. Lack of interest has been noticed in case of medical officers under whom the interns get attached. Rural works, preventive activities are not attractive to interns who are not motivated at the end of their undergraduate days. Moreover they feel that 6 months period of rural internship is too long a period which deprives them of the clinical experience in hospitals that they value more. Internship is more about completion in paper at most places and less to do with acquiring skills. Ground realities observed in studies conducted showed that 30% students had not performed simple procedures like recording the weight of mother and infant, 30-40% had never given any immunization while 70% had never prescribed common contraceptive methods like condom or oral pill.

Specialisation: There is inadequate training for service in rural areas. There is a lack of production of “basic” doctors who are able to deliver primary health care at the community level. Medicine, surgery and their super specialties are more popular among the fresh graduates. Less importance is given to community based education compared to institution or hospital-based education.

Privatisation of Medical Education: Measures are required to ensure proper regulation of medical education in these institutions by the medical council. Growing merchandisation of medical education has been observed in certain private institutions. Certain such institutions have been found to be substandard. Improper admission practices under the management quota have been observed. There is compelling evidence that many private medical colleges are short of staff and infrastructure, including hospital beds.

Recommendations
In view of the above mentioned problems, following recommendations are put forward:

1. Increase in the number of human resources at all levels should be done
2. Shortage of experienced teachers should be met
3. Performance of teachers should be assessed from time to time
4. Teachers should be made more accountable
5. There should be revamping of the teacher training at all levels and promotion of development of teaching aids to retain student attention in classrooms
6. Academic recognition should be given to the teachers for their contribution
7. It is important to encourage and reward teachers who show a flair for teaching and adopt innovative teaching methods
8. Career prospects of teachers need to be enhanced, by giving promotions more frequently, rather than stagnation at certain appointments
9. There is a need to shift from knowledge dominated examinations to more skill oriented examinations for the students
10. Assessment should predominantly be based on the core curriculum and should be criterion referenced, i.e. the performance of students is assessed against a standard criterion and not just in comparison to others
11. Radical changes are required in the evaluation system to encourage scientific thinking and promote better understanding of basic science concepts
12. Objective and subjective feedback to students should be given to help them improve their deficiencies, instead of a mere verbal input on their performance
13. Trust is needed during the training in the basic skills in human resource management, leadership qualities (ability to lead a health care team) and providing cost effective care in rural/non-hospital settings
14. Internship training should be revamped so that it is not just a repeat learning of the skills but should be aimed at delivery of health services
15. A formal assessment at the end of internship can ensure proper utilisation of this period for development of skills
16. Greater importance needs to be given to community based education rather than institution or hospital-based education
17. PG entrance examinations should be made more suitable for testing higher level of knowledge and skills rather than mere recall of facts
18. There is a need to urge medical students to look at specialising in disciplines on considerations other than their market value
19. The profession should be made financially more gainful
20. At the top positions in the government, in addition to the bureaucrats, there is a need for more technocrats to handle the affairs related to medical education
21. The state-wise skewed distribution of doctors should be corrected by providing adequate and as far as possible, equal facilities in all states
22. Rural health services need to be made more attractive - by improvements in position, pay, facilities and job satisfaction
23. New institutions need to be raised in rural and backward areas (In the 11th Five Year Plan: 2007-12, the government plans to set up six institutions like the All India Institute of Medical Sciences and upgrade 13 existing medical institutions)

There is a need to revamp the medical education system in our country. The aim of professional education in health must be production of a cadre of professionals who would have competence as well as motivation to serve the health needs of the country and its people as a whole. The number and type of medical training institutions in India is entirely disproportionate to the actual needs of the vast majority of people. We must train professionally competent doctors and bring back the nobleness in the profession. Concurrent concepts and modalities of implementation are not conducive to our achieving the aims of medical education in India. And although India is, no doubt, still producing good doctors, the standards vary to an alarming extent. That most young doctors - irrespective of their ability, emerge with a jaundiced view of the integrity of the medical system is probably no bad thing. It prepares them for the future; they have to be politically aware. Being bright and highly motivated is simply not enough. Therefore, there is a need to change.
Summary
At the time of independence, there were 30 medical colleges in India, which have expanded to 262 medical colleges now. The annual turn out is of about 24000 medical graduates every year. The system of medical education in India is basically westernized and hospital oriented since its origin about 150 years ago. There is still lack in the production of basic doctors, competent enough to provide primary health care and meet the requirements at the grass roots level. Most of the medical colleges in the country are located in urban areas. There is a geographic mal-distribution of the medical colleges all over the country. Currently, the medical education system in India is broadly classified into Allopathy, or Non Indian System of Medicine (NISM) and Indian Systems of Medicine and Homeopathy (ISMH). It comes under the Ministry of Health and Family Welfare which has the Department of Health, the Department of Family Welfare and the Department of ISMH.
It is headed by the Union Minister. There is also a Minister of State for Health and Family Welfare. The Director General of Health Services is associated with the Department of Health. The Medical Council of India is the apex body that regulates the medical education in India. The selection of students is on the basis of a MCQ test that tests mere recall of facts. For the undergraduates, the course is for a period of 5 1/2 years whereas for the post-graduates it is for 3 years (MD/ MS) and 1 or 2 years (Diploma). The curriculum is well laid out. Horizontal and vertical integration of the subjects is advocated. But actually the pattern of curriculum is fragmented and the subjects are taught in isolation. Both objective and subjective periodic assessment is advocated. Besides, the concept of CME is advocated that have been reduced merely to pharmaceutical industry driven activities these days. Many doctors utilize this opportunity for furthering their own careers. Irregularities in the placement of teaching faculty were observed during the last MCI inspection. Investigative medicine has largely taken over the medical education system in our country. Therefore, there is a need to revamp the medical education system in our country.

Study Exercises
Long Question: Critically review the current medical education system in India.

MCQs:
1. A medical graduate needs to get his degree registered with the following: (a) Ministry of Health and Family Welfare (b) MCI (c) State Medical Council (d) MCI and/ or State Medical Council
2. The Ministry of Health and Family Welfare has the following departments: (a) Dept. of Health and Dept. of Family Welfare (b) Dept. of Health, Dept. of Family Welfare and the Dept. of ISMH (c) Dept. of Family Welfare (d) Dept. of Health
3. The various departments under the ministry are headed by: (a) Secretary, Dept. of Health and Family Welfare (b) Secretary, Dept. of Health (c) Secretary, Dept. of Health, Family Welfare and ISMH (d) Secretary, Dept. of Health & Family Welfare and the Secretary, Dept. of ISMH
4. ISMH comprises of: (a) Ayurveda, Yoga, Unani, Siddha and Homoeopathy (b) Allopathy, Yoga, Unani, Siddha and Homoeopathy (c) Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (d) Allopathy, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
5. The Indian Medical Register is maintained by: (a) Ministry of Health and Family Welfare (b) MCI (c) State Medical Council (d) Both the MCI and State Medical Council

Answers: (1) d; (2) b; (3) d; (4) c; (5) b.

References & Further Suggested Reading
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(This chapter is based on the proceedings of a professional seminar on the subject held at Dept. of Community Medicine, AFMC, Pune, presented by Dr (Ms) Sukhmeet Minhas and moderated by Dr (Ms) S Marshar).
Urban Slums

The growth of slums in the cities has accompanied the pace of their industrialisation. Migration of people from rural to urban areas has compounded the housing problem in the latter and these people settle in shanty towns and slums in the fringes of the cities. Majority of them are economically backward, less educated and poorly paid workers prone to ill health due to overcrowding, poor housing, unsanitary environment and poverty. As per the 2001 census in the country, in cities with population of over one million, nearly one-fourth of the population reside in slums. Slum areas include the recognised and unrecognised slums, temporary settlements and pavement dwellers of whom the latter two are the poorest and the most needy.

Problems in urban slums

Change in the environment: The necessities enjoyed freely by slum dwellers while residing in rural areas, become commodities in the urban areas such as drinking water, cooking fuel, housing space etc. Marginal increase in income for the urban poor does not by itself assure better living conditions. Relative difference in income and wealth with the rich in the cities drives up the prices of food, health care goods and essential commodities, making them unaffordable to the poor. The change in environment for the people who have migrated to slums from rural areas has strong impact on their livelihood.

Social support: Consumption of public goods such as water, infrastructure and electricity is higher by the richer people, who also enjoy the subsidies provided by the government for these goods. The urban laws look upon migration as the root cause of all problems in the cities, as a result the migrants are denied the right to housing, their infrastructure is neglected and they are not provided easy access to basic health care. This aggravates the economic dependency already prevalent in the urban poor.

Access to water supply: Water supply in urban slums is usually not satisfactory. Per capita consumption of water in slums is less than in non-slum areas in a city. Water is supplied in common water points in slums. Overcrowding reduces the quantity available per head and subsoil water through borewells also does not prove sufficient. At times contamination of ground water table due to proximity to industries affects its quality thereby reducing the available water supply even further.

Sanitation in surroundings: As a result of higher population density in the slums, the total quantity of garbage and other wastes generated is higher, though the per capita solid waste is lower as compared to the non-slum areas. Solid wastes in slum areas are not appropriately disposed due to various reasons such as low awareness among the dwellers regarding waste hazards, segregation of wastes is not attempted, high rate of recycle of any material which has a perceived use, waste bins are not kept in sufficient numbers, waste carriage to final disposal site is infrequent, streets are narrow inhibiting access to lorries/vans and stray animals/birds have easy access to the bins thereby dispersing the wastes in the surrounding area.

Sewage disposal: Disposal of sewage slums is inadequate or at times rudimentary. The public toilets installed for this purpose are insufficient in number and not cleaned properly. The slum dwellers resort to open air defecation in nearby areas. Storm water drains and nullahs flowing near the settlements are frequently used for this purpose, creating filth and insanitation. The most vulnerable in this community are young children, elderly and women who also suffer the most due to improper toilet facilities. Lack of adequate water for cleaning or bathing increases their vulnerability and diarrhoeal diseases are highly endemic in this population.

Care in illness: Slum dwellers are subjected to various diseases brought about by interplay of factors such as poverty, ignorance and poor health infrastructure. Numerous studies have found high levels of malnutrition among the under 5 years old residing in these areas. The children below 5 years show high levels of stunting suggesting chronic malnutrition equal to that seen in the remote areas of the country. A study has also revealed that approximately 27% of infants in slums had a low birth weight as compared to 18% of those born in non-slum areas. Anaemia among the pregnant women is a major cause of maternal and perinatal mortality. Urban poor also spend substantially on childhood illnesses such as respiratory infections, diarrhoeal diseases as well as on tuberculosis, HIV/AIDS etc. The latter two have shown rising trends in the slum population.

Level of health care: There are consistent differences seen in the health care between slums and the non-slum areas in the cities. This is marked in the reproductive and child health care with studies revealing only about 55% women in slums having received three or more antenatal check ups compared to 74% of the non-slum population. The levels of institutional delivery and awareness of safe delivery practices also differ between the slum and non-slum areas. Immunisation coverage among children in urban slums is poor and so is the health care service available to residents. Besides, the treatment seeking behaviour in these areas is influenced by the negative-gender attitudes, which compounds the discrimination against the women and young & vulnerable group.

Social issues: Violence against vulnerable people in the slums is widely prevalent. The most affected are the women. Alcoholism and drug abuse envelop the slum youth who are uneducated or unemployed and this results in their getting involved in anti-social activities.

Strategies for health care of the slum dwellers

Comprehensive health policy: There is a need for a comprehensive policy to focus on the health needs of the slum population. Governments in different countries need to focus on the requirements of the urban poor and the strategies for improvement of their health care need to be adopted accordingly. The various aspects covered under this policy could be:

- Involvement of the community in all aspects of health care delivery. This should be encouraged by the local/municipal bodies
- Generate the demand for health services including the preventive and curative services
- Involvement of the local non-governmental organisations, medical practitioners and practitioners of traditional medicine in the community
- Create a secure economic environment in which the dwellers do not feel a threat due to illnesses or hospitalisations
- Special funds could be created in the State government health plans to cater to the health care in slum areas and disadvantaged groups.

**Provision of the basic necessities**: The policy should enunciate the means and the method to provide basic necessities to the slum dwellers, including nutritious diet with the locally and seasonally available food, safe and wholesome drinking water in adequate quantities for the family, system of hygienic disposal of excreta and the availability of healthy housing conditions.

**Network of services**: There is a need to generate a network of health care services such that the facilities are easily accessible to all the sections of population. Special emphasis should be given to the most vulnerable sections of slum dwellers as described above and also the pavement dwellers and temporary settlers who are not ordinarily included in the slum rehabilitation schemes. These networks could include the following:

- **Free health care** should be available on-site, adequate to the local needs, functional and non-discriminatory in nature such that it is universally acceptable in the spirit of health for all.
- **Outreach services** which are able to provide for the most peripheral of populations and also able to empathise with and understand their health care needs.
- **Referral services** should be integrated with the health care and outreach services such that comprehensive health care is available to the slum inhabitants.

**Curative services**: The health infrastructure in the urban slum areas needs to be strengthened at all the tiers to cover the entire slum area. A health care centre could be created as a first tier to cater to primary health care requirement of community. Similar attempt has been made in the Urban health care model by the Government of India by creating Urban Health Posts. The health care centre should be equipped to provide basic health facilities and reach the most vulnerable population. It should have necessary manpower to function the centre. The services provided should be OPD based including Reproductive & Child Health (RCH), first aid, treatment for common ailments, basic laboratory service, counselling, ancillary services and facility for referral to second tier of health care. The second tier of facility should be appropriately identified for referral such as hospitals, maternity homes and nursing homes. Private partners should be identified at each level of care to improve the coverage and quality of services.

**Preventive services**: Primary care should be integrated with preventive health care services. Immunisation of children and pregnant women should be carried out on priority as per laid down schedule. The immunisation days at the health centres should be communicated to all people. The workers at the health centres should teach the community to adopt safe and healthy family planning practices. Active and passive disease surveillance should be established at the first tier, which could integrate with the state/central surveillance network. Voluntary workers could be identified and involved in conduct of preventive care activities in the slum community.

**Involvement of NGOs and self-help groups**: Aim of provision of urban health care is to be able to reach each and every person or group with these services. Involvement of community in identifying their health needs and improving their health awareness could be achieved with the help of these organisations. Volunteers could be identified from the community, who could spare 3-4 hours a day to provide outreach services. They would also be integrated with other slum development activities.

**Income generating activities**: The volunteer groups, NGOs and State health authorities could motivate the community members to be involved in income generating activities especially the ones where the youth could be addressed. Community leaders could be asked to lead in this regard. Slum development activities could help in diverting the youth from anti-social activities to more productive work.

**Public-private partnerships**: Partnerships between the urban local bodies, family welfare organisations and State government will improve the chance of success of the urban health schemes for the slums. Coordination between various State departments such as engineering, health and education would help in making the schemes sustainable and improve overall sanitation services in slum areas.

**Monitoring**: Health Management Information Systems should be established in slums to measure health data in the population, for future policy planning. At present this data is inadequately received at the State level. Baseline indicators should be determined from health surveys. These could include morbidity, mortality indicators, immunisation coverage, infant and neonatal care, safe delivery-abortion practices and so on. Periodic review of the implementation of these schemes could be carried out by establishing programme management units at district and State levels.

**Tribal Health and Health Care of Population in Remote Areas**
Tribal people inhabit various geographic and climatic zones in different countries in the World. Their vocations range from hunting, gathering, nomadic living to living in societies with settled culture in harmony with nature. In India majority of the tribal population live in remote areas and their problems depend on their remoteness from the rest of the communities as well as their indigenous customs and traditions. Tribal communities in the country belong to more than 400 linguistic and cultural groups, with some states having almost fifty percent tribal population.

**Nature of problems**

**Urbanisation and industrialisation**: The rich heritage of knowledge, expertise and age old wisdom passed over generations in the traditional communities have been endangered by urbanisation and industrial growth. Oppression, land exploitation and degradation of environment have dented their simple ways of cohabitation with nature.
Diseases and deficiencies: Tribal communities are more prone to communicable diseases and nutritional deficiencies. Major health problems include respiratory infections, malaria, diarrhoeal diseases and skin infections. Women are more affected by anaemia, complications during pregnancy such as toxaemias, prolonged labour, abnormal foetal presentations etc. The maternal, perinatal and infant mortality rates are quite high. Some tribal communities are also exposed to environmental pollutants and effects of progressive land/forest degradation severely depleting their habitat.

Social issues: Tribal communities and those living in remote areas depict a higher rate of alcohol intake and substance abuse. The harmonious living with nature is disturbed; lack of employment and awareness, availability of cheap or spurious liquor, trading in opium and narcotic drugs increases their vulnerability to these behaviours.

Awareness and utilisation of health facilities: The level of awareness regarding health facilities among the tribal community is fairly low. In a study carried out in Bastar district of Madhya Pradesh, it was found that only 40% population knew about subcentres and PHCs. Where services are available, indigenous people are often reluctant to use them because of insensitive staff at the health centres. Most communities still rely on the traditional systems of medicines to address their health problems.

Availability of infrastructure: Government health care facilities are usually inadequately available in tribal and remote areas. Buildings, equipments, drugs and other supplies and health personnel are insufficient in these places. NGOs and self help groups therefore take up the cause of providing health care and social mobilisation of tribals.

Strategies to improve health care

Identifying the objectives: To assess the unmet needs in tribal communities, stimulate the demand for health care services, improve service coverage, and ensure accessibility and acceptability of these services by the community.

Strengthen health infrastructure: Government health infrastructure should be upgraded. Policies should be made to relax qualifications for personnel to suit local requirements, effective remuneration and turnover of health personnel in these areas ensured. Institutions such as the Panchayati Raj Institutions should be encouraged to help communities in various health care activities, besides the socio-economic development of the community. Referral services should be made organised and effective.

Promote community participation: Involve people to map inaccessible areas, community based organisations could participate in outreach services, volunteers could be involved in improving awareness and education of community. Existing health functionaries such as Anganwadi workers under in Indian villages could create demand for services for women and children.

Involvement of Non Governmental Organisations: NGOs with good track records should be encouraged to take responsibility for managing MCH services as well as support the public health facilities in tribal communities and remote areas. Practitioners of traditional systems of medicine should also be involved in health care.

Behaviour Change Communication strategies: Local area specific IEC activities should be planned. The tribal leaders and persons of prominence in the community should be taken into confidence for developing such communication strategies, which should be based on values, beliefs and practices locally prevalent.

Development of human resources: Promoting training in midwifery for the community volunteers and local married women in supporting the health care activities in these communities.

Summary

Urban Slums: The Migration of people from rural to urban areas has compounded the housing problem in the latter and these people settle in shanty towns and slums in the fringes of the cities. There are some unique problems faced by the people in urban slums. High prices of food, health care goods and essential commodities are making them unaffordable. They are denied the right to housing, their infrastructure is neglected and they are not provided easy access to basic health care; Scarcity of water supply and overcrowding reduce the quantity available per head. Solid wastes in slum areas are not appropriately disposed due to various reasons and disposal of sewage in slums is inadequate or at times rudimentary. Slum dwellers are subjected to various diseases brought about by interplay of factors such as poverty, ignorance and poor health infrastructure. Malnutrition among the under 5 years old, Low birth weight, Anaemia among the pregnant women and childhood illnesses such as respiratory infections, diarrhoeal diseases as well as on tuberculosis, HIV/AIDS etc. have shown rising trends in the slum population. Violence against vulnerable people in the slums is widely prevalent. Alcoholism and drug abuse envelop the slum youth who are uneducated or unemployed and this results in their getting involved in antisocial activities.

There is a need for a comprehensive policy to focus on the health needs of the slum population. Governments in different countries need to focus on the requirements of the urban poor and the strategies for improvement of their health care need to adopt accordingly. The policy should enunciate the means and the method to provide basic necessities to the slum dwellers, including nutritious diet with the locally and seasonally available food, safe and wholesome drinking water in adequate quantities for the family, system of hygienic disposal of excreta and the availability of healthy housing conditions. Health Management Information Systems should be established in slums to measure health data in the population, for future policy planning.

Tribal Health: In India majority of the tribal population live in remote areas and their problems depend on their remoteness from the rest of the communities as well as their indigenous customs and traditions. Urbanisation, industrialisation, Oppression, land exploitation and degradation of environment have dented their simple ways of cohabitation with nature. Tribal communities are more prone to communicable diseases and nutritional deficiencies. Major health problems include respiratory infections, malaria, diarrhoeal diseases and skin
In our vast country, a number of extremely important, scientifically appropriate and acceptable systems of indigenous medicine are available. These include the Ayurved system, which is popular mostly in the States of Kerala, Himachal Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan, Uttar Pradesh and Orissa. The Unani system is particularly popular in Andhra Pradesh, Karnataka, Tamil Nadu, Bihar, Maharashtra, Madhya Pradesh, Uttar Pradesh, Delhi and Rajasthan. The Siddha system is widely acceptable in Tamil Nadu and Kerala. Homoeopathy is practised all over the country and is especially popular in Uttar Pradesh, Kerala, West Bengal, Orissa, Andhra Pradesh, Maharashtra, Punjab, Tamil Nadu, Bihar, Gujarat and North-Eastern States. These Indian Systems of Medicine and Homoeopathy (ISM&H) were given an independent identity in the Ministry of Health and Family Welfare in 1995 by creating a separate department, which was renamed as Department of Ayurved, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) in November 2003. The department is entrusted with the responsibility of developing and propagating the above-mentioned officially recognised Indian systems of medicine and Homoeopathy.

Organization
The department is a part of the Ministry of Health and Family welfare, Govt of India and is administratively headed by the Secretary, Dept of AYUSH, assisted by various administrative and technical officials. The Department has two subordinate offices, one public sector undertaking, two statutory organisations, four research councils, eight educational institutions and a national Medicinal plant board (with 35 State/ UT level boards) under its administrative fold, as per following details :-

Subordinate Offices : These include the Pharmacopoeial Laboratory for Indian Medicine (PLIM), located at Ghaziabad, which is the Standard Setting-cum-Drug-Testing Laboratory for Indian Medicine (Ayurveda, Unani and Siddha System) at the National level and the Homoeopathic Pharmacopoeial Laboratory (HPL) which is also located at Ghaziabad for the purpose of laying down standards and testing for identity, purity and quality of Homoeopathic Medicines.

Public Sector Undertaking : There is one PSU, viz., the Indian Medicine Pharmaceutical Corporation (IMPCL), located in Almora, Uttarakhand, with the prime objective of manufacturing authentic Ayurvedic and Unani medicines according to classical texts, for catering to the needs of dispensaries of Central Government Health Scheme (CGHS), Units of Central Research Councils of Ayurveda and Unani, and state government institutions.

Statutory Regulatory Councils: The Central Council of Indian Medicine (CCIM) and the Central Council for Homoeopathy (CCH) were set up under the Acts of Parliament. Ayurveda, Siddha and Unani systems are within the ambit of the Central Council of Indian Medicine, and Homoeopathy is under the Central Council for Homoeopathy. These councils prescribe course curricula, evolve and maintain standards of education and maintain central registers of practitioners of Ayurveda, Siddha, Unani and Homoeopathy respectively. Their main responsibilities are to regulate education and practice of respective systems of medicine and advice the Government regarding education.

Research Councils: There are four apex research councils, all located in New Delhi, namely, Central Council for Research in Ayurveda and Siddha (CCRAS), Central Council for Research in Unani Medicines (CCRUM), Central Council for Research in Homoeopathy (CCRH) and Central Council for Research in Yoga and Naturopathy (CCRYN).
National Apex Institutes: Eight apex educational institutions are established to promote excellence in Indian Systems of Medicine and Homoeopathy education. For each system there is a national institute, viz.: National Institute of Ayurveda, Jaipur; National Institute of Siddha, Chennai; National Institute of Unani Medicines, Bangalore; Morarji Desai National Institute of Yoga, New Delhi; National Institute of Naturopathy, Pune and National Institute of Homoeopathy, Kolkata. The Rashtriya Ayurveda Vidyapeeth has been established at New Delhi.

Broad Goal, Strategies and Activities

Broad Goal of the Programme: Mainstreaming of AYUSH in the health care service delivery system, with a view to strengthen the existing public health system.

Strategies: Mainstreaming of AYUSH is one of the key strategies under the National Rural Health Mission (NRHM) under which it is envisaged that all PHCs/CHCs would be provided AYUSH facilities under the same roof. AYUSH manpower would be arranged either by relocation of AYUSH doctors from existing dispensaries or from contractual hiring of AYUSH doctors under NRHM funds. The other infrastructure and supply of medicines to PHCs/CHCs would be done through the Centrally Sponsored Scheme of Hospitals and Dispensaries which has received a very good response from States in the last two years of the 10th five year Plan. The following are the main strategies of this programme:

- Integrate and mainstream ISM&H in health care delivery system including National Programmes.
- Encourage and facilitate in setting up of specialty centres and ISM clinics.
- Facilitate and Strengthen Quality Control Laboratory.
- Strengthening the Drug Standardization and Research Activities on AYUSH.
- Develop Advocacy for AYUSH.
- Establish Sectoral linkages for AYUSH activities

Main Activities

(a) Improving the availability of AYUSH treatment faculties and integrating it with the existing Health Care Service Delivery System

- Integration of AYUSH services in various CHC / Block PHC with appointment of contractual AYUSH Doctors.
- Appointment of paramedics where AYUSH Doctors shall be posted.
- Appointment of a Data assistant to support the ISM&H Directorate.
- Strengthening of AYUSH Dispensaries with provision of storage equipments.
- Making provision for AYUSH Drugs at all levels.
- Establishment of specialized therapy centers in District Headquarters Hospitals and Medical Colleges.
- AYUSH doctors to be involved in all National Health Care programmes, especially in the priority areas like IMR, MMR, Control of Malaria, Filaria, and other communicable diseases etc.
- Training of AYUSH doctors in Primary Health Care.
- All AYUSH institutions will be strengthened with necessary infrastructure like building, equipment, manpower etc.
- One Yoga Therapy Centre will be opened in district Headquarters Hospitals to provide Yogic therapy for specific diseases and also as a synergistic therapy to all other systems of treatment.
- Block level School Health Programmes to be conducted twice in a year in two groups consisting of 100 students in each group to improve the physical and mental health of the school children.
- It is proposed to create necessary Managerial post in the State and District level for effective supervision and implementation of different activities.
- Necessary vehicles with supporting manpower has also been proposed to strengthen the supervisory Joint monitoring visits to health centres to be undertaken by both AYUSH and Health Care Officials at the District level's/State level.

(b) Integration of AYUSH with ASHA.

- Training module for ASHA and ANMs to be updated to incorporate information of AYUSH.
- Training & capacity building to be undertaken by the Director, SIHFW, Bhubaneswar and necessary training material for the purpose to be modified and provided accordingly.
- Drug kit that will be provided to ASHA will contain one AYUSH preparation in the form of iron supplement. But other drugs which are used in the treatment of common diseases, control of communicable diseases as well as drugs promoting the maternal and child health as well as improving quality of life could be included subsequently.

(c) Drug Management:

- Priority will be given to manufacture of drugs in Govt. Sector Pharmacies, as per their capacity. In case of any surplus funds, drugs will be procured from the market observing all financial formalities of the Govt.
- Provision of Rs. 25,000/- to supply drugs per AYUSH dispensary has been projected as per NRHM norm.
- Provisions of medicines for District AYUSH wings and Specialty Therapy Centres proposed to be operated in the State.

(d) Special Initiatives for Development of AYUSH Drugs.

(i) Strengthening the Quality Control Laboratory

- The quantum of Ayurvedic and Homoeopathic medicines used / procured in both public and private health sectors is huge. There has been wide ranging concern about spurious, counterfeit and sub standard drugs. In order to prevent the spread of sub-standard drugs and to ensure that the drugs manufactured or sold or distributed throughout the state are of standard quality, drug regulation and enforcement unit has to be established in the state.
- The drug regulatory mechanism to be strengthened at the state level to improve the quality of drugs used in AYUSH and ensure proper standardization. The existing State Drug Testing and Research Laboratory (ISM) at Bhubaneswar shall also be modernised and strengthened for the purpose.

(ii) Strengthening the Drug Standardisation and Research Activities on AYUSH: Standardisation and research is an important activity in the process of development of a drug used for preventive and curative purpose. The major drawback in the development of AYUSH is lack of research and development activity on the drugs used for the System. The
following activities will be undertaken to strengthen the drug standardisation and research activities on AYUSH:

- It has been proposed to evaluate the chemical, pharmacological and clinical efficacy of the plant drugs.
- The phytochemical entities responsible for the therapeutic activity of the plant drugs used in AYUSH system will be evaluated through intensive R & D activity.
- The pharmacologically viable drugs will be screened clinically under WHO guidelines to establish the therapeutic activity.
- Clinical trials on different diseases like Psoriasis, Liver disorders, Diabetes, Asthma will be conducted to establish the effect of various drugs used for such diseases.
- It has also been proposed to conduct literary research like translation of manuscripts and its publications.
- Re-vitalisation of the local health traditions and the knowledge of traditional drugs used by experienced local health practitioners will be gathered and documented.

(iii) Development of Herbariums and crude drug museums:

- Herbarium will be developed in collaboration with the Forest departments in 15 selected Districts of the State.
- The existing Herbal gardens will be strengthened with necessary infrastructure.
- One State Herbarium at Bhubaneswar shall be developed. This shall enable greater research and study on development and innovation in AYUSH Drugs.
- 10 selected centres will be developed for extraction and innovation in AYUSH Drugs.

Modalities of Delivery

- For mainstreaming of AYUSH in NRHM, the personnel of AYUSH may work under the same roof of the Health Infrastructure, i.e. PHC, CHC; however, separate space should be allocated exclusively for them in the same building.
- The Doctors under the Systems of AYUSH are required to practice as per the terms & conditions laid down for them by the appropriate Regulatory Authorities.
- Provision of one Doctor of any of the AYUSH systems as per the local acceptability assisted by a Pharmacist in PHC.
- Provision of one Specialist of any of the AYUSH systems as per the local acceptability assisted by a Pharmacist in CHC.
- Supply of appropriate medicines pertaining of AYUSH systems.
- The already existing AYUSH infrastructure should be mobilized. AYUSH dispensaries that are not functioning well should be merged with the PHC or CHC barring which, displacement of AYUSH clinic is not advised.
- Cross referral between allopathic and AYUSH streams should be encouraged based on the need for the same.
- The specific choice of AYUSH system that should be set up in each state should be decided by the State depending on the local preference.
- AYUSH Doctors shall be involved in IEC, health promotion and also supervisory activities.
- The Indian Public Health Standards (IPHS) pertaining to AYUSH will be developed and also the detailed manpower and other requirements and financial projections for the same will be provided by the Department of AYUSH for further consideration.

Regulatory Measures

The Central Acts are in place to regulate education and practice, manufacture of drugs for sale and enforcement mechanism. Ayurveda, Siddha, Unani and Homoeopathy drugs are covered under the purview of Drugs and Cosmetics Act, 1940. Since most of the medicines of AYUSH sector are made from medicinal plant materials, the Department has set up a National Medicinal Plants Board to promote cultivation of medicinal plants and ensure sustained availability of quality raw material. A separate National Policy on Indian Systems of Medicine and Homoeopathy is in place since 2002.

Infrastructure

The infrastructure under AYUSH sector consists of 1355 hospitals with 53296 bed capacity, 22635 dispensaries, 450 Undergraduate colleges, 99 colleges having Post Graduate Departments, 9,493 licensed manufacturing units and 7.18 lakh registered practitioners of Indian Systems of Medicine and Homoeopathy in the country. 7 Ayurvedic and 5 Unani drugs have been supplied to 9 States and 4 Cities respectively as part of the on-going National Reproductive & Child Health Programme (RCH) for the treatment of common ailments of pregnant, women and children. As regards mainstreaming of AYUSH in the activities of NRHM, the following was the status as on 30 April 2008 is given in Table - 1.

The details of AYUSH manpower have also been described in detail, earlier, in the chapter on health manpower resources.

<table>
<thead>
<tr>
<th>Table - 1</th>
<th>Parameter</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of PHCs where AYUSH practitioners have been co-located</td>
<td>3793</td>
</tr>
<tr>
<td></td>
<td>No. of AYUSH doctors posted on contractual appointments in CHCs</td>
<td>2199</td>
</tr>
<tr>
<td></td>
<td>No. of AYUSH doctors posted on contractual appointments in PHCs</td>
<td>1683</td>
</tr>
<tr>
<td></td>
<td>No. of AYUSH paramedics posted on contractual appointments in CHCs</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>No. of AYUSH paramedics posted on contractual appointments in PHCs</td>
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<tr>
<td></td>
<td>CHCs where AYUSH facilities are co-located</td>
<td>973</td>
</tr>
<tr>
<td></td>
<td>PHCs where AYUSH facilities are co-located</td>
<td>2012</td>
</tr>
</tbody>
</table>

Budget

There has been a three fold increase in the Plan budget of the Department in the 10th as compared as 9th Plan, most of which was on account of scaling up of the budget provision in the last two years of the 10th Five Year Plan i.e. 2004 - 2005 and 2005 - 2006 in line with the declared policy of the Central Government to increase the budgetary provision for AYUSH sector for mainstreaming it in the national health care delivery network. The Plan allocation for 2006-07 is Rs. 381.60 crore. It is proposed to scale up Plan provision for Department of AYUSH from Rs.1057.26 crore in the 10th Plan to Rs.2486.45 crore in the 11th Plan.
Future Course
It has been proposed to further step up the activities under AYUSH during the 11th five year plan. The following special steps are contemplated:

1. Development and Upgradation of AYUSH Institutes/Colleges: This is one of the Centrally Sponsored Schemes being implemented by the Department for Development of AYUSH Institutions. This Scheme has been in operation since last three plan periods and the present plan period. The scheme has following components:
   (i) Development of UG colleges.
   (ii) Assistance to PG. Medical Education
   (iii) Re-orientation Training Programme for AYUSH Personnel.
   (iv) Renovation and strengthening of Hospital wards of Govt./Govt. aided teaching
   (v) Establishment of computer laboratory.
   (vi) Up-gradation of academy institutes to the status model Institutes of AYUSH.

2. Strengthening of Hospitals & Dispensaries: The scheme has the following components
   (i) Setting up of Speciality Therapy Centres and Speciality Clinics of ISM&H
   (ii) Setting up of ISM&H Wings in District Allopathic Hospitals
   (iii) Strengthening of existing AYUSH health care facilities
   (iv) Supply of essential medicines

3. Quality Control of AYUSH Drugs
   (i) To establish/strengthen the State Drug Testing Laboratories for ASU&H drugs.
   (ii) To establish/strengthen the State Pharmacies of ASU&H drugs.
   (iii) To strengthen state Drug Controllers on ASU&H enforcement mechanism.
   (iv) To assist AS&U drug manufacturing unit to improve their infrastructure.

Summary
All the Indian Systems of Medicine and Homoeopathy (ISM&H) were given an independent identity in the Ministry of Health and Family Welfare in 1995 by creating a separate department, which was renamed as Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) in November 2003. The Department has two subordinate offices, one public sector undertaking, two statutory organisations, four research councils, eight educational institutions and a national Medicinal plant board (with 35 State/UT level boards) under its administrative fold.

The broad Goal of the Program is to mainstream the AYUSH in the health care service delivery system, with a view to strengthen the existing public health system. Mainstreaming of AYUSH is one of the key strategies under the National Rural Health Mission (NRHM) under which it is envisaged that all PHCs/CHCs would be provided AYUSH facilities under the same roof.

The main activities are (a) improving the availability of AYUSH treatment facilities and integrating it with the existing Health Care Service Delivery System (b) Integration of AYUSH with ASHA. (c) Drug Management / Provisions of medicines (d) Special Initiatives for Development of AYUSH Drugs. For mainstreaming of AYUSH in NRHM, the personnel of AYUSH may work under the same roof of the Health Infrastructure and the Doctors under the Systems of AYUSH are required to practice as per the terms & conditions laid down for them by the appropriate Regulatory Authorities. The already existing AYUSH infrastructure should be mobilized. AYUSH dispensaries that are not functioning well should be merged with the PHC or CHC barrier which, displacement of AYUSH clinic is not advised. AYUSH Doctors shall be involved in IEC, health promotion and also supervisory activities. The Indian Public Health Standards (IPHS) pertaining to AYUSH will be developed.

The Central Acts in place to regulate education and practice, manufacture of drugs for sale and enforcement mechanism. Ayurveda, Siddha Unani and Homoeopathy drugs are covered under the purview of Drugs and Cosmetics Act, 1940. A separate National Policy on Indian Systems of Medicine and Homoeopathy is in place since 2002.

The infrastructure under AYUSH sector consists of 1555 hospitals with 55296 bed capacity, 22655 dispensaries, 450 Undergraduate colleges, 99 colleges having Post Graduate Departments, 9,493 licensed manufacturing units and 7.18 lakh registered practitioners of Indian Systems of Medicine and Homoeopathy in the country. It is proposed to scale up Plan provision for Department of AYUSH from Rs.1057.26 crore in the 10th Plan to Rs.2486.45 crore in the 11th Plan.

It has been proposed to further step up the activities under AYUSH during the 11th five year plan. Some of them are Development & Upgradation of AYUSH Institutes/Colleges, Strengthening of Hospitals & Dispensaries and Quality Control of AYUSH Drugs.

Study Exercises
Long Question: Mainstreaming of AYUSH is one of the key strategies under the National Rural Health Mission (NRHM). Comment and discuss the activities and modalities of delivery of AYUSH

Short Notes: (1) Mainstreaming of AYUSH (2) Activities proposed under AYUSH during the 11th five year plan (3) AYUSH Organisation

MCQs
1. Indian Systems of Medicine and Homoeopathy (ISM&H) was renamed as Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) in (a) 2003 (b)2000 (c)2005 (d)2007
2. As per NRHM norm, the amount projected for supply of drugs per AYUSH dispensary is (a) 20000 (b) 25000 (c) 30000 (d)35000
3. Which of the following is a subordinate office under Dept of AYUSH,MOHFW (a) Pharmacopoeial Laboratory for Indian Medicine (b) Homoeopathic Pharmacopoeial Laboratory (c) Indian Medicine Pharmaceutical Corporation (d)all the above

Answers: (1) a; (2) b; (3) d.

References
1. Official website of National Rural health Mission, Dept of Health & Family Welfare, Govt of India, National Informatics Centre, NUAPADA.
2. AYUSH official websites http://india.gov.in and http://mohfw.nic.in