

**Passed by Academic Council (Resolution No. 355/2006) dtd. 30/05/2006,  
subject to Uniformity in the Examination pattern.**

## **CURRICULUM OF M.D. IN COMMUNITY MEDICINE**

### **GOAL**

The overall goal of training programme is to produce a competent public health specialist who can function as a leader of health team and is able to provide effective health care at the primary, secondary and tertiary levels.

### **GENERAL OBJECTIVES**

The general objectives of the training programme in Community Medicine will be to enable a candidate to be a :

#### **Public Health specialist to**

1. Define and manage the health problems of the community, which he/she serves. He/she should be able to organize epidemiological studies to identify health problems.
2. Plan, implement and evaluate various health programs in his/her area, especially National Health, Family Welfare and disease control / eradication programmes.
3. Select, train supervise and manage various categories of health personnel working with him/her.
4. Organize health care services, routine and for special groups and during periods of special needs such as disasters/calamities and epidemics.
5. Should update himself / herself on latest advances / developments in the field of Public Health

#### **Teacher / Trainer to**

1. Plan and conduct an educational session/ programme. He/she will be able to draw up lesson plan with details of educational objective, content, process and essential inputs.
2. Assist in development of curriculum, teaching and learning activities and methods of evaluation
3. Assist in manpower planning and development. He/she should be able to participate in programmes for the selection, training and supervision of various cadres of health personnel

#### **Research to**

1. Plan and execute a research study including clinical trails. Use/Organize Biostatistical analysis using computers and softwares and prepare reports/papers.
2. Critically evaluate research activities
3. Make recommendations on policy and procedures.

## Special Objectives

- At the end of the MD program in Community Medicine the student will
1. Know the structure and functioning of the health system at the National and International levels and its historical perspectives.
  2. Know the principles of nutrition, maternal health and family welfare and put the same into practice.
  3. Apply the principles of Epidemiology and Biostatistics to health practice including the design and implementation of health related research studies and clinical preventive medicine trails.
  4. Know the principles of Communicable and Non-communicable diseases control and assist in the implementation of National Health programmes at a program level.
  5. Identify the socio-cultural dimension in Health and disease and apply this knowledge in the design and implementation of an integrated Health and development program.
  6. Apply the principals of environmental and occupational health in the design of health programmes aimed at improving health status.
  7. Access specific health situations in a population, plan, organize , implement and evaluate programs aimed at improving health situations.
  8. Identify the health needs of the special groups within populations especially the aged, the disabled and the worker and to respond to that need.
  9. Know the principles of learning and apply this knowledge in facilitating the learning process in groups of people involved in health.
  10. Relate his/her knowledge of curative medicine to the improvement of the health status of a given population.
  11. Identify the role of the Government, Private and Voluntary sector in health and understand the principles of innovations in health practices and research.

## COURSE CONTENTS.

### Health Systems in India and The World – Historical Perspective

1. History of Public Health in India
  - History of Health Services in India
  - Indigenous Systems of Medicines in India
  - Bhore Committee's and other "Committee Reports on Health Services, Health care and Health Professional Education in India.
  - National Health Policy
  - An update of achievements of the country vis-à-vis the Health for all Indicators
2. History of Public Health in the World
  - Influence of the various systems of Medicine i.e. Chinese, Mesopotamian, Egyptian, Geek etc.
  - Concepts in Public Health
    - Disease Control
    - Health Promotion
    - Social Engineering
    - Health for All
3. Primary Health Care
  - Concepts of Primary Health Care
  - Principles of Primary Health Care
  - Elements of Primary Health Care
  - Models of Delivery of Primary Health Care
  - Current status of Primary Health care the world over

#### 4. The Health Care System in India – Structure and Function

- Central Level
- State Level
- District Level
- Taluka Level
- Primary Health Centre Level
- Village Level
- Urban Level

#### SOCIO- CULTURAL DIMENSION IN HEALTH

1. Principles of Sociology and the Behavioral Sciences
  - Concepts of Sociology and Behavioral Sciences
  - Influence of Social and Cultural Factors on Health and Disease
  - Social Structures and Social Organisation
2. Principles of Social Psychology
  - Principles of psychology
  - Principles of behavioral sciences
  - Principles of social anthropology
3. Application of Sociology in Health and Development
  - Social Problems in Health and Disease
  - Use of Sociology in addressing problems in Health and Disease

#### PRINCIPLES OF EDUCATIONAL SCIENCE AND TECHNOLOGY

- Curriculum Planning, Educational objectives
- Principles of Learning
- Teaching/ Learning methods
- Teaching skills including Micro Teaching
- Preparation and Use of Teaching Aids and Learning Research Materials.
- Methods of Evaluation

#### PRINCIPLES AND PRACTICE OF INFORMATION, EDUCATION AND COMMUNICATION.

1. Principles of IEC Health Education
  - Objectives of Health Education
  - Content of Health Education
2. Communication Skills
  - Principles of Communication
  - Communication blocks
  - Body Language
3. The use of Media for IEC
4. Practice (Methods) of IEC and its application in Community Health
5. Evaluation of impact

#### PRINCIPLES OF NUTRITION AND APPLIED NUTRITION

1. Nutrients, Daily Requirements, Balanced Diet, Primordial Prevention of Lifestyle related disease.
  - Classification of Foods
  - Daily Requirements of Nutrients
  - Balanced Diet
  - Nutritional Profiles of Major Foods
2. Nutritional Deficiencies
  - Nutritional Requirements
  - Protein Energy Malnutrition

- Vitamin Deficiencies
- Mineral Deficiencies
- Deficiencies of Trace elements
- 3. Assessment of Nutritional status in a community and approach to a programme
  - Assessment of an Individual's Nutritional Status
  - Assessment of Community Nutritional Status
- 4. Nutritional Programmes in India – Critical Review
  - Nutritional Problems in India
  - Programmes to combat these problems
  - Nutritional Surveillance
  - Social Problems in Nutrition
- 5. Other Aspects of Nutritional
  - Food Borne Disease
  - Food Hygiene
  - Food Adulteration including PFA Act

## PRINCIPLES OF ENVIRONMENTAL HEALTH

1. Water
  - Sources of water
  - Water Pollution
  - Purification of water
  - Water Quality Standards
  - Water borne disease – Epidemiology and Control – Investigation of outbreak of water borne disease and report including water testing
2. Air
  - Indices of thermal comfort
  - Air Pollution including monitoring
  - Effects of air pollution and prevention and control
  - Ventilation
3. Housing including domestic and industrial housing standards
4. Noise and noise pollution
5. Radiation
6. Meteorological Environment including temperature, humidity and rainfall
7. Lighting
8. Disposal of Waste and Sanitation
  - Sources and Classification of wastes
  - Disposal of Solid Wastes
  - Excreta Disposal
  - Sewage Disposal
  - Health Care and Hospital Waste Management
9. Environmental Pollution
  - Sources of Environmental Pollution
  - Monitoring of Environmental Pollution
  - Prevention and Management of Environmental Pollution

## 10. Medical Entomology

- Insecta: Mosquito, Flies, Lice, Fleas and Bugs
- Arachnida: Ticks and Mites
- Crustacea: Cyclops
- Identification of the arthropods
- Diseases transmitted by arthropods
- Control of Arthropods and Disease borne by them
- Insecticides and Insecticide Resistance
- Rodents and Anti-Rodent Measures
- Integrated Vector Control

## MATERNAL HEALTH, CHILD HEALTH AND FAMILY WELFARE (RCH)

### 1. Common Maternal and child health problems at an individual level

- Antenatal Care
- Risk Approach
- Antenatal visits
- Preventive services
- Intranetal Care
- Postnatal Care
- Care of the mother
- Child Health Problems
- Low Birth Weight
- Growth and Development
- Childhood Infections
- Care of the infant

### 2. Genetics and Health

- Common genetic problems
- Management of Genetic Problems
- Preventive and Social Measures in Genetics

### 3. Structure of MCH and Family Welfare services in India

- Problems of Maternal Health in India
- Delivery of Maternal and Child Health Services
- Trends in the MCH services
- MCH related programmes in India eg.RCH,CSSM,ICDS
- Family Planning
- Methods of family planning
- Indicators of MCH care

### 4. Demographic Trends in India

- Demographic Cycle
- Trends in the world
- Demography related indicators
- Demographic trends in India

### 5. School Health services

- Objectives
- Components of school health services
- Planning for school health services
- Care of handicapped children
- Behavioral and Learning Problems in Children

6. Social Paediatrics
  - Juvenile Delinquency
  - Child Abuse
  - Child Labour
  - Street Children
  - Child Guidance Clinic
  - Child Marriage
  - Child Placement

## PRINCIPLES AND APPLICATION OF EPIDEMIOLOGIC METHODS IN HEALTH RESEARCH

1. Research Methodology
2. Principles of Epidemiology
3. Epidemiologic Studies
  - Descriptive
  - Analytical
  - Experimental

## BIOSTATISTICS

Collection/ Organisation of data / Measurement scales

Presentation of data

Measures of Central Tendency

Measures of variability

Sampling and planning of health survey

Probability, Normal distribution and inductive statistics

Estimating population values

Tests of significance (Parametric/Non-parametric including qualitative methods)

Analysis of variance

Association, correlation and Regression

Vital statistics

Evaluation of health and measurement of morbidity / mortality

Life table and its uses

Use of computers

Census

## PRINCIPLES OF TROPICAL MEDICINE

1. Infectious and non Infectious Disease Epidemiology
  - Respiratory Diseases such as Small Pox, Chicken Pox, Measles, Mumps, Rubella, Diphtheria, Pertussis, Influenza, Tuberculosis, ARI etc.
  - Intestinal Infections such as Poliomyelitis, Hepatitis, Food Poisoning, cholera, Enteric Fevers, Amoebiasis, Worm Infestations etc.
  - Arthropod Borne Infections such as Malaria, Filariasis, Dengue and others
  - Zoonotic Diseases such as Brucellosis, Rickettsial Diseases, Parasitic
  - Surface Infectious Diseases of Public Health Importance
  - Non-Infectious Diseases of Public Health Importance
  - Cardiovascular diseases, diabetes, blindness, accidents, cancers
  - Emerging and reemerging disease

## NATIONAL HEALTH PROGRAMMES

The origin, historical development, interventions, current state and critique of the different National Health Programmes: National Family Welfare Programme (NFWP)

- National Tuberculosis Control Programme
- National Leprosy Eradication Programme
- National Diarrhoeal Diseases Control Programme
- National Malaria Eradication Programme
- National Filariasis Control Programme
- National Acute Respiratory Infections (ARI) Control Programme
- National AIDS Control Programme
- National Guinea Worm Eradication Programme
- National Kala Azar Control Programme
- National Japanese Encephalitis (JE) Control Programme
- National Iodine Deficiency Disorders (IDD) Programme
- National Programme for the Control of Blindness
- National Cancer Control Programme
- National Mental Health Programme
- National Diabetes Control Programme
- Child Survival and Safe Motherhood (CSSM)
- Reproductive Child Health (RCH)
- Universal Immunization Programme (UIP)
- National Water Supply and Sanitation Programme
- Minimum Needs Programme
- National Rural Health Mission

The implementation of NHPS at a programme level and in the community

## COMMUNITY MENTAL HEALTH

1. Principles of Mental Health
  - Types, Causes and Warning signals of Mental Illness
  - Preventive aspects of mental Health
2. The Approach to Mental Health Problems in a Community
  - Primary Health Care approach to mental health problems
  - Mental Health Services in the country

## OCCUPATIONAL HEALTH

1. Principles of Occupational Health
  - Occupational Environment
  - Occupational Hazards
  - Absenteeism
  - Problems of Industrialization
  - Health Protection of Workers
  - Prevention of Occupational Disease
2. Legislation in Occupational Health
  - Factories Act
  - Employees State Insurance Act
  - Workmen's Compensation Act
  - Mines Act
  - Plantation Labour Act
3. Basics of Industrial Toxicology
4. Principles of Industrial Psychology
5. Basics of Ergonomics

## HEALTH CARE OF THE AGED AND THE DISABLED

1. Community Geriatrics
  - Implications of demographic changes in Indian Population
  - Health Problems of the aged
  - Preventive Health Services for the aged
2. The Disabled and Rehabilitation
  - Problem of disabled in the country
  - Types of disabilities and their management
  - Rehabilitation of the disabled
  - Community Based Rehabilitation

Health Care of Tribal people

## VOLUNTARY SECTOR IN HEALTH

Role of the Voluntary Sector in Health

- Activities undertaken by Vos in the Health Sector
- Activities of specific Vos in Health
- Innovative Approaches in the Voluntary Effort in Health

## HEALTH CARE ADMINISTRATION AND HEALTH MANAGEMENT

1. Principles of Planning and Evaluation
  - Plan Formulation
  - Execution
  - Evaluation
  - Planning Cycle
2. Health Management
  - Methods and Techniques of Health Management
  - Behavioral Sciences in Management
  - Quantitative Methods in Health Management
3. Basics of Health Systems Research
4. Basics of Health Economics
5. Basics of Health Information Systems

## RECENT ADVANCES AND TOPICS OF CURRENT INTEREST

1. Rational drug policy, Nutrition Policy, Health Policy, Population Policy
2. Computers in Health
3. Agricultural Medicine and Plantation Health
4. Introduction to Counseling
5. Community Ophthalmology
6. Qualitative Research and Operational Research
7. Disaster Management and Public health emergencies
8. Nosocomial Infection and Hospital Infection Control
9. Other Free Topics

## COURSE CONTENTS FOR PRACTICALS

1. Microbiology applied to Public Health (Dept.of Microbiology)
  - Hands off experience in staining techniques and interpretation of:
  - Leishmann stain
  - Grams Stain
  - JSB Stain
  - Alberts Stain
  - Ziehl-Neilson Stain
  - Peripheral blood examination of Thick and Thin Smears and Reporting
  - Collection and Dispatch of Samples to Laboratory
  - Experience in the collection, examination and interpretation of simple laboratory tests on blood, stool and urine.
  - Interpretation of commonly used serological tests such as Widal/HIV/Hepatitis B/VDRL/Viral Antibody Titres
2. Medical Entomology
  - Collection of mosquitoes/fleas/ticks/other
  - Hands on experience on mounting and reporting
  - Entomological Survey
3. Public Health Chemistry
  - Interaction of Commonly used tests with reference water solutions / water purifiers
4. Epidemiological Exercises and Case Studies (including family studies) to illustrate principles and practice of community Health
  - Statistical Exercises to illustrate Principles and Practice
  - Investigation of an Outbreak of a disease and Measures to control
5. Exercises in Public Health Administration
  - Planning Exercises
  - VED Analysis etc
  - Beneficiary Need Analysis
  - Preparation of Annual Plan
  - Budgeting at the PHC level
  - Supervision of a PHC/SC
  - Requirement of Vaccines, Medicines, Stationary at the PHC level
  - Organisation of a Family Welfare Camp
  - Conduction of an Immunization Camp
6. Diet and Nutritional Survey of a Community
  - Collection and Dispatch of Food Samples
7. Study of Environment and its influence on health in
  - Work Places
  - House-hold
  - Community
  - This includes the study of air pollution, noise pollution, temperature, humidity and other meteorological factors and their effect on health.
8. Study of sanitation problems to illustrate the principles and practice of community health
9. Environment Sanitation
  - Collection of Water Samples / Analysis / Reporting
  - Analysis of physical, chemical and microbiological quality of water
  - Study of Waste Management Methods
  - Adaptation of water supply methods and waste disposal methods to an industry or Plantation setting
  - Study of Requirement of Water in Urban and Rural Setting
10. Visits/ Postings to the following institutions

- District Health Office
- District Hospital
- Taluka Hospital
- PHC/ SC/CHC
- ICDS office / Anganwadi Centre
- Public Health Laboratory
- Sewage Treatment Plant
- Visit to Local Ward Office
- Infectious disease Hospital
- Malaria/DTC/Filaria units
- Visit to factory/Inspectorate of factories/ visit to Industry
- Home for the aged
- Blindness Rehabilitation schools
- Deaf and Dumb schools
- Spastic society
- Physically Handicapped Centre
- Market Place
- Slaughter Home
- Hotel
- Milk Dairy
- Food and Beverages Processing Units

#### Posting to Obstetric and Gynecology

1. Obstetrics (Urban and Rural Health Centres)
  - Antenatal Care
  - High Risk pregnancy
  - Intranetal care – The Management of normal Labour
  - Postnatal Care
  - Family Welfare
2. Gynecology
  - Adolescent Health
  - Reproductive Tract Infections
  - Cancer of the reproductive tract especially Carcinoma cervix

#### Posting to Paediatrics (Hospital and ICDS)

1. Paediatric Infectious diseases
2. Nutrition problems
3. Immunization
4. Neonatal Problems
5. Growth and development monitoring

Students doing MD Community Medicine can be allowed to do one semester / Posting in Obst Gynace / Medicine / Paediatric in 2<sup>nd</sup> Year.

## **TRAINING ACTIVITIES (for 3 years)**

The entire training and the facilitation of the learning process will be aided through the following methods of learning:

1. Lecture Discussions
2. Problem Based Learning
3. Practical Demonstarions
4. Field visits – Family Studies / Clinico-Social Case Studies/ Site Visits
5. Institutional Visits
6. Seminars
7. Journal Clubs
8. Epidemiological Exercises
9. Supervised Training of undergraduates including Lesson Planning
10. Involvement in Specific Departmental Project works
11. Plan, Design, Conduct Surveys

## **METHODS OF MONITORING :**

1. Self Evaluation – Through daily Work Diary
2. Faculty Evaluation – Through scrutiny of Diary and Log Book by Head of Department and staff
3. Technique of skills in Pedagogy – Through lesson plans and supervised taking of classes for undergraduates
4. Skill Evaluation – through demonstration and practical and field reports
5. Knowledge Evaluation – through journal clubs, seminars and tests.

**FORMATIVE EVALUATION :** The students will be evaluated by work diary and log book. It is mandatory to get a score of five in all items in order to get a final certification for appearing for M.D.University Exam.

## **THESIS**

Objectives: By carrying out a research project and presenting his work in the form of thesis. The student will be able to :

- Identify a relevant research questions;
- Conduct a critical review of literature;
- Formulate a hypothesis;
- Determine the most suitable study design;
- State the objectives of the study;
- Prepare a study protocol;
- Undertake a study according to the protocol;
- Analyze and interpret research data; and draw conclusions;
- Write a thesis

**GUIDELINES:** While selecting thesis topics, following should be kept in mind:

- The scope of study should be limited so that it is possible to conduct it within the resources and time available to the student;
- The emphasis should be on the process of research rather than the results;
- The research study must be ethically appropriate.
- The protocol, interim progress as well as final presentation must be made formally to the entire department.
- Only one student per teacher/thesis guide
- There should be a training programme on Research Methodology for existing faculty to build capacity to guide research.
- Within 3 months of thesis submission the candidate should be communicated the acceptance / rejection of the thesis.
- The thesis should be sent to at least 2 reviewers and rejected if only both reject it.

Within 6 months the topic to be selected, protocol to be presented at Department level. Local Ethical Committee approval to be obtained at the end of 6 months. The title and synopsis to be communicated to the University

First 6 months :        Topic Identification  
                                 Protocol Presentation  
                                 Submission of title and  
                                 Synopsis to University

Thesis submission to the university 6 months before the Final University Exam.

## EVALUATION

### SCHEME OF EXAMINATION (*As per Direction No. 01/2008 dtd. 26/05/2008*)

#### RECOMMENDED BOOKS AND JOURNALS

1. Maxcy Roseman John M.Last, Maxcy-Roseman **Public Health and Preventive Medicine**, Appleton-Century-Crofts, New York
2. Hobson W, **The Theory and Practice of Public Health**, Oxford Medical Publication
3. Barker D J P, **Practical Epidemiology**, Churchill Livingstone
4. Park J E & K Park, **Text Book of P & S.M.**, M/s Banarsidasm Bhanot, Jabalpur
5. Mahajan B K and M/C.Gupta, **Text Book of P & S.M.**, Jaypee Publications
6. Bradford Hill, **Principles of Medical Statistics**, The Lancet Ltd. No.7 Adam Street, Adelphine, London, 1967
7. Mac, Mahon & Pugh, **Epidemiology-Principles and Methods**, Little Brown and Co.Boston, U.S.A.
8. **Hunter's Diseases of Occupations**, Edited by P.A.B.Raffle, P.H.Adams, P.J.Baxter and W.R.Lee Edward Arnold Publishers (1994), Great Britain.
9. Text book of PSM : A P Kulkarni and Dr. Baride
10. Epidemiology and Management for Health Care, Fifth Edition- P.V. Sathe and P.P. Doke, Vora Medical Publications, Mumbai
11. COMMITTEE REPORTS AND POLICY DOCUMENTS – MEDICAL EDUCATION AND HEALTH POLICY:
  1. Bhore Committee Report (1946) **Health Survey and Development Committee**, Govt.of India, Delhi.
  2. Mudaliar Committee Report (1961) **Health Survey and Planning Committee**, Govt. of India, Delhi
  3. Shrivastav Report (1974), **Health Services and Medical Education – A programme for immediate action, Group on Medical Education and Support Manpower, Ministry of Health and Family Welfare**, Govt.of India, New Delhi.
  4. ICSSR/JCMR (1981), **Health for All- An alternative strategy – Report of a Joint study group of ICSSR/ICMR**, Indian Institute of Education, Pune.
  5. National Health Policy, (1982) **Ministry of Health and Family Welfare**, Government of India, New Delhi.
  6. **Compendium of Recommendations of various committees on Health and Development (1943-1975)**, Central Bureau of Health Intelligence (1985) Directorate General of Health Services, Ministry of Health and Family Planning, New Delhi.
  7. Bajaj, J.S. et al (1990) **Draft National Education Policy for Health Sciences**, I.J.M.E. Vol.29, No.1 & 2 (Jan-August 1990)

12. Epidemiology and Health Management: By Dr.P.V.Sathe
13. National Health Programmes of India : J.Kishore
14. Text Book of Infection Diseases : Christae
15. Preventive Paediatrics : O.P.Ghai
16. Statistics : K.Vishvesh Rao
17. Medical Entomology : A. K.Hati
18. Oxford Text Book of by Public Health : Holland & Detel

### **Journals**

1. Indian Journal of Community Medicine
2. Indian Journal of Public Health
3. Indian Journal of Community Health
4. Journal of Communicable Diseases
5. Indian Journal of Medical and Child Health
6. Indian Journal of Preventive and Social Medicine
7. Indian Journal of Occupational Health and Industrial Medicine
8. Indian Journal of Medical Research
9. National Medical Journal of India
10. Indian Journal of Malariology
11. Indian Journal of Environmental Health
12. Indian Journal of Medical Education
13. Journal of Indian Medical Association
14. Journals of Medicine, Paediatrics, OBG, Skin & STD, Leprosy, Tuberculosis & Chest Diseases ( For Reference)

### **International Journals**

1. WHO Publications – All
2. Journal of Epidemiology & Community Health
3. Tropical Diseases Bulletin
4. Vaccine
5. American Journal of Public Health
6. Lancet
7. New England Journal of Medicine.

### **ADDITIONAL READING**

1. Compendium of recommendations of various committees on Health and Development (1943-1975). DGHS, 1985 Central Bureau of Health Intelligence, Directorate General of Health Services, min.of Health and Family Welfare, Govt. of India, Nirman Bhawan, New Delhi.P-335.
2. National Health Policy, Min.of Health & Family Welfare, Nirman Bhawan, New Delhi, 1983.
3. Santosh Kumar, The elements of Research, writing and editing 1994, Dept. of Urology, JIPMER, Pondicherry
4. Srinivasa D K etal, Medical Education Principles and Practice, 1995 National Teacher Training Centre, JIPMER, Pondicherry
5. Indian Council of Medical Research, “Policy Statement of Ethical considerations involved in Research on Human Subject”, 1982, I.C.M.R., New Delhi.
6. Code of Medical Ethics framed under section 33 of the Indian Medical Council Act, 1956. Medical Council of India, Kotla Road, New Delhi.
7. Francis C M, Medical Ethics, J P Publications, Bangalore,1993.
8. Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.

9. Internal National Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N Engl J Med 1991;424-8
10. Kirkwood B R, Essential of Medical Statistics for Medical students, 1<sup>st</sup> Ed.Oxford: Blackwell Scientific Publications 1988.
11. Mahajan B K, Methods in Bio statistics for medical students, 5<sup>th</sup> Ed. New Delhi, Jaypee Brothers Medical Publishers, 1989
12. Raveendran B Gitanjali, A Practical Approach to PG dissertation, New Delhi, J P Publication, 1998
1. Hunter (Donald), **Diseases of the Occupations**, 6<sup>th</sup> edition, Hodder and stoughton (1978)
2. Schilling (1978), **Occupational Health Practice**, Butterworth & Company, Great Britain
3. Plunkett (E.R), **Occupational Diseases**, Barret Book Company, Stanford (1977)
4. Johastone (R.T), **Occupational Diseases and Industrial Medicine**, Saunders, Philadelphia (1960)
5. French (Geoffery), **Occupational Health**, Medical Technical Publishers, Lancaster
6. Mayers (May R), **Occupational Health etc.**, Williams and Wilkins, Baltimore (1969)
7. Government of India, Ministry of HRD, **Occupational Health : issues of women in the unrecognized sector**, New Delhi (1988)
8. Plunkett (E.R), **Handbook of Industrial Toxicology**, 3<sup>rd</sup> Edition, Arnold Publishers, USA (1987)
9. Charles Wn Sharp and L Thomas Carroll, **Voluntary Inhalations of Industrial Solvents**, U.S. Department of Health, Education and Welfare, National Institute on Drug abuse, U.S.A. (1978)
10. Patric Kinnersly (1979), **The Hazards of Work, How to fight them**, Pluto Press U.K.
11. Plunkett (E.R) (1977), **Occupational Diseases,A Syllabus of Sings and Symptoms**, Barret Book Company, Stamford, Connecticut (1977)
12. Edited by Robert j.Mc Cunney, **Handbook of Occupational Medicine**, Little Brown and Company, Boston/Toronto (1988)
13. WHO (1986) Geneva, **Early detection of Occupational Disease**
14. **Hunter's Diseases of Occupations**, Edicted by P.A.B. Raffle, P.H.Adams, P.J.Baxter and W.R.Lee Edward Arnold Publishers (1994), Great Britain
15. Carl Zenz (1994), **Occupational Medicine**, 3<sup>rd</sup> Edition Mosby, U.S.A.
16. ILO Publications Geneva, **Encycloperia of Occupational Health and Safety**, (1983) 3<sup>rd</sup> Edition Vol.122.