

# SYLLABUS

M.D. COMMUNITY MEDICINE

2012-2013

**GUIDELINES FOR COMPETENCY BASED POSTGRADUATE  
TRAINING PROGRAMME FOR MD IN COMMUNITY MEDICINE**

**Preamble**

The purpose of this programme is to standardize Community Medicine teaching at Post Graduate level throughout the country.

**Programme Objectives**

A candidate upon successfully qualifying in the M.D. (Community Medicine) examinations should be competent in the following areas:-

- (1) Health policy, planning; leadership and management
- (2) Epidemiology and Biostatistics
- (3) Health Promotion and disease prevention
- (4) Documentation and dissemination
- (5) Behavioral Change Communication,
- (6) Research Methodology
- (7) Education technology

***SPECIFIC LEARNING OBJECTIVES***

In the area of (I) **Public Health Management**, he/she should be able to:-

- (1) Identify health problems of the community in the context of the socio -economic - cultural milieu
- (2) Prioritize health problems
- (3) Identify threats to the environment
- (4) Identify groups which require special attention (elderly, adolescents, gender, the poor and other marginalized groups) including those facing occupational hazards
- (5) Set objectives; prepare action plan; implement programmes; and monitor, supervise and evaluate them
- (6) Manage Health Information System and respond appropriately to the information gathered
- (7) Assess costs, plan, implement and supervise budget and alternative health options
- (8) Understand and Implement public health laws
- (9) Initiate, implement and supervise National Health Programmes
- (10) Establish Surveillance System and respond to public health threats effectively and efficiently

- (11) Anticipate, prepare for and respond to disasters
- (12) Plan health manpower development, logistics and materials management.
- (13) Study quality assurance and medical audit
- (14) Understand basics of hospital management

In the area of (II) **Epidemiology**, he/she should be able to:-

1. Conduct epidemiological investigation of communicable, non-communicable and other phenomena of public health importance and suggest appropriate solution.
2. Use effectively the tools of epidemiology for understanding disease distribution and determinants of diseases.

In the area of (III) **Health Team Leadership**, he/she should be able to:-

- (1) Understand the structure and organizational behavior
- (2) Interact, communicate, educate effectively to persons from diverse backgrounds, ages and gender to promote healthy behaviour through community involvement.
- (3) Explain scientific information to decision makers and opinion leaders and general public.
- (4) Facilitate inter-sectoral coordination
- (5) Promote and establish partnerships - partnering with community, Panchayati Raj Institutions, public private partnerships, NGOs and corporate sector

In the area of (IV) **Teaching and Training**, he/she should be able to:-

- (1) Assess the learning needs of any given group.
- (2) Formulate learning objectives.
- (3) Plan curriculum and prepare curriculum materials.
- (4) Select and implement appropriate learning methods.
- (5) Evaluate learning experiences.

In the area of (V) **Research**, he/she should be able to:-

- (1) Critically evaluate data, identify gaps in knowledge and formulate research questions
- (2) Design and implement Epidemiological and Health Systems research studies
- (3) Design and implement qualitative research methods, when appropriate
- (4) Analyze data and present findings
- (5) Effectively document and disseminate findings

Apply ethical principles to the collection, maintenance, use and dissemination of data and information

## ***CURRICULUM***

## **SUBJECT SPECIFIC THEORETICAL COMPETENCIES:**

### **Course contents:**

Paper I: History of Public Health, Concepts in Public Health, Epidemiology and Research  
Methodology

#### **History of Public Health**

1. History of different systems of Medicine
2. Public health events - Sanitary awakening, germ theory of disease, rise of Public health in various countries
3. Primary Health Care

#### **Concepts in Public Health**

1. Definition of health; appreciation of health as a relative concept; determinants of health.
2. Characteristics of agent, host and environmental factors in health and disease and the multifactorial etiology of disease.
3. Understanding of various levels of prevention with appropriate examples.
4. Indices used in measurement of health.
5. Health situation in India: demography, mortality and morbidity profile and the existing health facilities in health services.
6. Difficulties in measurement of health.
7. National Health Policy

#### **Epidemiology**

1. Use of epidemiological tools to make a community diagnosis of the health situation in order to formulate appropriate intervention measures.
2. Epidemiology - definition, concept and role in health and disease.
3. Definition of the terms used in describing disease transmission and control.
4. Natural history of a disease and its application in planning intervention.
5. Modes of transmission and measures for prevention and control of communicable and non-communicable disease.
6. Principal sources of epidemiological data.
7. Definition, calculation and interpretation of the measures of frequency of diseases and mortality.
8. Common sampling techniques, simple statistical methods for the analysis, interpretation and presentation of data frequency distribution, measures of central tendency, measures of variability, statistical tests of significance and their application.
9. Need and uses of screening tests.
10. Accuracy and clinical value of diagnostic and screening tests (sensitivity, specificity, & predictive values).

11. Epidemiology of communicable and non-communicable diseases of public health importance and their control.
12. Epidemiological basis of national health programmes.
13. Awareness of programmes for control of non-communicable diseases.
  - (a) Planning and investigation of an epidemic of communicable diseases in a community setting.
  - (b) Institution of control measures and evaluation of the effectiveness of these measures.
14. Various types of epidemiological study designs.
15. The derivation of normal values and the criteria for intervention in case of abnormal values.
16. Planning an intervention programme with community participation based on the community diagnosis.
17. Applications of computers in epidemiology.
18. Critical evaluation of published research.

### **Epidemiology of Specific Diseases**

The specific objectives of selected communicable diseases of public health importance for which National Disease Control/Eradication Programmes have been formulated are described here. For other diseases, the individual teacher would formulate the objectives while drawing the lesson plans. The idea of formulating objectives for a few diseases is to highlight their importance and to emphasize certain learning outcomes. Infective hepatitis, ARI, T.B. Malaria, Filariasis, STDs & AIDS, Diarrhoeal diseases, Kala Azar, Mental Health, Non communicable diseases, Blindness, Hypertension, Leprosy, Accidents, JE, VPDs, Plague, Chickenpox etc.

1. Extent of the problem, epidemiology and natural history of the disease.
2. Relative public health importance of a particular disease in a given area.
3. Influence of social, cultural and ecological factors on the epidemiology of the disease.
4. Control of communicable and non-communicable disease by:
  - a. Diagnosing and treating a case and in doing so demonstrate skills in:
    - (i) Clinical methods
    - (ii) Use of essential laboratory techniques
    - (iii) Selection of appropriate treatment regimes.
    - (iv) Follow-up of cases.
  - b. Principles of planning, implementing and evaluating control measures for the diseases at the community level bearing in mind the relative importance of the disease.
5. Institution of programmes for the education of individuals and communities.
6. Investigating a disease epidemic.
7. Knowledge of the National Health Programmes.

8. Level of awareness of causation and prevention of diseases amongst individuals and communities.

### **Entomology**

1. Role of vectors in the causation of diseases.
2. Steps in management of a case of insecticide toxicity.
3. Identifying features of and mode of transmission of vector borne diseases.
4. Methods of vector control with advantages and limitations of each.
5. Mode of action, dose and application cycle of commonly used insecticides.

### **Biostatistics**

The scope and use of Biostatistics

- a. Collection, classification and presentation of statistical data.
- b. Analysis and interpretation of data.
- c. Obtaining information, computing indices (rates and ratio) and making comparisons.
- d. Apply statistical methods in designing of studies.
- e. Choosing of appropriate sampling methods and sample size.
- f. Applying suitable test of significance
- g. Use of statistical tables.

### **Paper II: Health planning and Public Health Administration**

1. Explain the terms: public health, public health administration, regionalisation, comprehensive health care, primary health care, delivery of health care, planning, management, evaluation, National Health Policy, Development of Health Services in India and various committee reports.

#### **Components of health care delivery**

- (i) Describe the salient features of the National Health Policy concerning :
  - (a) provision of medical care;
  - (b) primary health care and Health for All;
  - (c) health manpower development;
  - (d) planned development of health care facilities;
  - (e) encouragement of indigenous systems of medicine.
- (ii) Explain the process of health planning in India by demonstrating awareness of various important milestones in the history of health planning including various committees and their recommendations.
- (iii) The health systems and health infrastructure at Centre, state district and block levels. The inter-relationship between community development block and primary health centre. The organisation, function and staffing pattern of community health centre, primary health centre, rural health centre and sub-centre etc.

- (iv) The job descriptions of health supervisor (male and female); health workers; village health guide; anganwadi workers; traditional birth attendants.
- (v) The activities of the health team at the primary health centre, Community health centre, district hospital.

### **Health Management**

- (i) Familiarity with management techniques : define and explain principles of management; explain broad functions of management; personnel and materials management.
  - (ii) The components of health care delivery,. For this, he should;
  - (iii) Appreciate the need for International Health Regulations and Disease surveillance.
  - (iv) Be aware of the constitutional provisions for health in India.
  - (v) Enumerate the major divisions of responsibilities and functions (concerning health) of the union, local and the state governments.
  - (vi) Appreciate the role of national, international voluntary agencies in health care delivery.
6. Explain general principles of health economics and various techniques of health management e.g., cost-effectiveness, cost-benefit etc.

### **Paper III: Nutrition, Environmental Health, Demography, Mental Health and Education Technology**

#### **Nutrition**

1. Nutritional problems of the country; Role of nutrition in Health and Disease.
2. Common sources of various nutrients and special nutritional requirement according to age, sex, activity, physiological conditions.
3. Nutritional assessment of individual, families and the community by selecting and using appropriate methods such as : anthropometry, clinical, dietary, laboratory techniques.
4. Compare recommended allowances of individual and families with actual intake.
5. Plan and recommend a suitable diet for the individuals and families bearing in mind local availability of foods, economic status etc.
6. Common nutritional disorders: protein energy malnutrition, Vitamin A deficiency, anemia, iodine deficiency disorders, fluorosis, food toxin diseases and their control and management.
7. National Nutritional Policy.
8. National programmes in nutrition and their evaluation.
9. Food adulteration: prevention and control.

#### **Environmental Sanitation**

1. Awareness of relation of Environment to Health.
2. Awareness of the concept of safe and wholesome water.
3. Awareness of the requirements of sanitary sources of water.

4. Understanding the methods of purification of water on small scale with stress on chlorination of water
5. Various biological standards.
6. Concepts of safe disposal of human excreta.
7. Physical, chemical standards; tests for assessing quality of water.
8. Disposal of solid waste, liquid wastes both in the context of urban and rural conditions in the community.
9. Problems in the disposal of refuse, sullage and sewage.
10. Sources, health hazards and control of environmental pollution.
11. Influence of physical factors – like heat, humidity, cold, radiation and noise – on the health of the individual and community.
12. Standards of housing and the effect of poor housing on health.

### **Demography and Family Planning**

1. Definition of demography and its relation to Community Health.
2. Stages of the demographic cycle and their impact on population.
3. Definition, calculation and interpretation of demographic indices like birth rate, death rate, growth rate, fertility rates.
4. Reasons for rapid population growth in the world, especially in India.
5. Need for population control measures and the National Population Policy.
6. Identify and describe the different family planning methods and their advantages and shortcomings.
7. Principles of Counselling; Client satisfaction.
8. Medical Termination of Pregnancy Act.
9. Organisational, technical and operational aspects of the National Family Welfare Programme and participation in the implementation of the Programme. Target Free Approach.
10. Give guidelines for MTP and infertility services.
11. Recent advances in contraception.
12. National Population Policies.

### **Education Technology**

1. General principles of teaching/learning, methods of instructions, methods of evaluation.
2. Various teaching aids (including a.v.aids) and skills to use them correctly.
3. Behavioral change communication strategy - Health education

### **Mental Health**

1. Public health importance of mental health
2. Public health approach to mental health problems: types, diagnosis and management of mental health problems in the community.

### **Paper IV: Recent Advancements in Public Health and Miscellaneous topics**

1. Newer vaccines
2. New screening/diagnostic methods applicable to public health problems
3. Role of Genetics in Community Health and Genetic Counseling at Primary Care Level.

### **Sociology**

1. Conduction of a clinico-social evaluation of the individual in relation to social, economic and cultural aspects; educational and residential background; attitude to health, disease and to health services; the individual's family and community.
2. Assessment of barriers in health behaviour and identification of obstacles to good health, recovery from sickness and to leading a socially and economically productive life.
3. Development of a good doctor – patient relationship, public relations and community participation for health sectors.
4. Identification of social factors related to health and disease in the context of urban and rural societies.
5. Impact of urbanisation on health and disease.

### **School Health**

1. Problems of school and adolescents; Objectives of the School Health Programme.
2. Activities of the Programmes like :
  - (a) Carrying out periodic medical examination of the children and the teachers.
  - (b) Immunisation of the children in the school.
  - (c) Health Education
  - (d) Mid-day meals.
3. Obtaining participation of the teachers in the school health programme including maintenance of records; defining healthful practices; early detection of abnormalities.
4. Organization, implementation, supervision and evaluation of School Health Programme.

### **Occupational Health**

1. Relate the history of symptoms with the specific occupation including agriculture.
2. Identification of the physical, chemical and biological hazards to which workers are exposed to while working in a specific occupational environment.
3. Diagnostic criteria of various occupational diseases.
4. Preventive measures against these diseases including accident prevention.
5. Various legislations in relation to occupational health.
6. Employees State Insurance Scheme.

### **Urban health**

1. Common health problems (Medical, Social, Environmental, Economic, Psychological) of urban slum dwellers.
2. Organisation of health services for slum dwellers.
3. Organisation of health services in urban areas.

## **SUBJECT SPECIFIC PRACTICE BASED OR PRACTICAL COMPETENCIES**

### **Part I: General Skills**

The postgraduate student should be able to :

1. Elicit the clinico-social history to describe that agent, host and environmental factors that determine and influence health.
2. Recognise and assist in management of common health problems of the community.
3. Apply principles of epidemiology in carrying out epidemiological studies in the community.
4. Work a team member in rendering health care.
5. Carry out health education effectively for the community.

### **Part II : Skills in Relation to Specific Topics**

#### **1. Communication**

The student should be able to communicate effectively with family members at home; patients at clinics or at homes; individuals, family or a group for health educational; peers at scientific forums.

#### **2. Team activity**

Work as a member of the health team; in planning and carrying out fieldwork like school health.

#### **3. Environmental sanitation**

Collect water samples for microbiological evaluation; chlorination of water; estimate the chlorine demand of water; estimate the residual chlorine of water; insecticides: their proper storage and use in control of vectors.

#### **4. Communicable and Non-communicable diseases (including social problems)**

- (a) Eliciting clinico-social history and examining the patient for diagnosis and treatment.
- (b) Collection of appropriate material for microbiological, pathological or biochemical tests.
- (c) Fixing, staining, and examining smears – peripheral blood smear for malaria and filariasis, sputum for AFB; Hb estimation; urine and stool examination.
- (d) Assessing the severity and/or classifying dehydration in diarrhoea, upper respiratory tract infection.
- (e) Adequate and appropriate treatment and follow-up of leprosy, malaria, filariasis, rabies.
- (f) Advice on the prevention and prophylaxis of common diseases like vaccine preventable diseases, tetanus, malaria, filariasis, rabies, cholera, typhoid, intestinal parasites.
- (g) Use of proper screening methods in early diagnosis of common diseases.
- (h) Take necessary steps in disease outbreak/epidemics/natural disasters – investigation of epidemic, food poisoning; notification; organizing medical care following disasters.

#### **5. Reproductive and Child Health**

- (a) Antenatal – examination of the mother; application of the risk approach in antenatal care.
- (b) Intranatal – conducting a normal delivery; early recognition of danger signals in intranatal period; referral of cases requiring special care.
- (c) Postnatal – assessment of the mother and new born, advice about appropriate family planning method; promotion of breast-feeding; advice on weaning.
- (d) Assessment of growth and development of the child – use of ‘road to health’ card; recording important anthropometric assessments of the child; giving immunisation to the child; identifying high-risk infant.

## **6. Statistics**

- (a) Choose proper sample, sampling method and sample size.
- (b) Apply appropriate tests of significance to make a correct inference.

## **7. Nutrition**

- (a) Conducting a diet survey.
- (b) Community survey and clinical diagnosis of nutritional deficiencies : vitamin A deficiency, iodine deficiency, malnutrition.
- (c) Making recommendations regarding diet.

## **8. Occupational Health**

- (a) Inspection of work sites
- (b) Recommendation in improving work sites.
- (c) Medical examination of workers.

## **9. Health Care of the Community**

- (a) Ensuring community participation in health care.
- (b) Arranging intersectoral coordination where necessary
- (c) Working in liaison with other agencies involved in health care in various National Health Programmes.

## **10. Health Management**

- (a) Be an effective team leader.
- (b) Guide and train workers.
- (c) Supervision of workers and programmes.

## **11. Family Planning : Counselling on appropriate methods.**

Organize, Implement, Supervise & Evaluate National Programmes.

## **12. Managerial Skills**

## **13. Teaching Skills**

### ***TEACHING AND LEARNING METHODS***

To achieve the stated objectives, various modalities and methods are recommended:-

The proportion of these modalities and methods will vary from Institution to Institution due to varying facilities for exposure and number of postgraduate students and recognized teachers. However, modality wise minimum exposure is suggested below:-

#### **Orientation**

During orientation course, they should be exposed to the concepts of human behavior, research methodology including ethics, statistics, Health Management including economics, health policies etc.

#### **PG activities should be held at least thrice a week**

#### **Class room and field learning:**

- (1) Self directed: At least twice a week in which the student will present articles, abstracts from journals, seminars, group work, epidemiological and statistical exercises, case studies, family presentation.
- (2) Lectures: Recognized teachers should take lectures..
- (3) Participation in scientific activities, Participation in Panel, Symposia, debates, workshops, conferences

#### **Field posting and work**

- (1) Posting at Urban and Rural Health Training Centres for a period of one year.
- (2) Posting in the hospital for exposure to clinical departments namely Pediatrics, Gynaecology and Obstetrics, Medicine and Surgery for one month each.
- (3) Wherever possible work attachment at District Health Office and Directorate of Health Services
- (4) Short duration posting in various camps, melas, public health emergencies, Investigation of epidemics, implementation of National Health Programmes

- (5) Visits to various institution of Public Health Importance and related development organizations.

### **Teaching exposure**

They should conduct group teaching of undergraduate students. They should participate in the training programme conducted by the Department.

### **Research**

1. Thesis: The protocol must be submitted within Six months and completed thesis should be submitted six months before the University examination.
2. They should be involved in departmental research projects.
3. They should be encouraged to publish papers in scientific journals
4. They should be exposed to application of computers in medical science

## ***ASSESSMENT***

### **END ASSESSMENT, ASSESSMENT AT THE END OF TRAINING**

The Post Graduate examination shall be in three parts:-

**Thesis, to be submitted by each candidate at least 6 months before the date of commencement of the theory examination.**

**Theory: There shall be four theory papers.**

- |           |                                                                                            |
|-----------|--------------------------------------------------------------------------------------------|
| Paper I   | History of Public Health, Concepts in Public Health, Epidemiology and Research Methodology |
| Paper II  | Health planning and Public Health Administration                                           |
| Paper III | Nutrition, Environmental Health, Demography, Mental Health and Education Technology        |
| Paper IV  | Recent Advancements in Public Health and Miscellaneous topics                              |

**Practical:** should be spread over two days.

- i) Clinico-social case / family study exercise
- ii) Clinical cases- one long and one short case
- iii) Statistical and epidemiological exercise
- iv) Spots
- v) Thesis presentation
- vi) Assessment of teaching skills
- vii) Viva-Voce

## **Recommended reading:**

### **A. Books**

1. Public Health and Preventive Medicine (Maxcy-Rosenau-Last Public Health and Preventive Medicine) by Robert B. Wallace
2. Basic Epidemiology. R Bonita, R Beaglehole, T Kjellstrom. World Health Organization Geneva.
3. Epidemiology by Leon Gordis.
4. Oxford Textbook of Public Health. Holland W, Detel R, Know G.
5. Practical Epidemiology by D.J.P Barker
6. Park's Textbook of Preventive and Social Medicine by K.Park
7. Principles of Medical Statistics by A. Bradford Hill
8. Interpretation and Uses of Medical Statistics by Leslie E Daly, Geoffrey J Bourke, James MC Gilvray.
9. Epidemiology, Principles and Methods by B. MacMahon, D. Trichopoulos
10. Hunter's Diseases of Occupations by Donald Hunter, PAB Raffle, PH Adams, Peter J. Baxter, WR Lee.
11. Sathe PV and Sathe AP Epidemiology and Management for Health Care for All.
12. Vaccines by Stanley A. Plotkin.
13. All reports and documents related to all National Programmes from the Ministry of Health and Family Welfare.

### **B. Journals**

#### **National**

- a) Indian Journal of Community Medicine
- b) Indian Journal of Public Health
- c) Indian Journal of Community Health
- d) Journal of Communicable Diseases
- e) Indian Journal of Maternal and Child Health
- f) Indian Journal of Preventive and Social Medicine
- g) Indian Journal of Occupational Health and Industrial Medicine
- h) Indian Journal of Medical Research
- i) Indian Paediatrics
- j) Indian Journal of Paediatrics
- k) The National Medical Journal of India
- l) Journal of Vector Borne Diseases (previously Indian Journal of Malariology)
- m) Indian Journal of Environmental Health
- n) Indian Journal of Medical Education
- o) Journal of Indian Medical Association
- p) Journals of Medicine, Paediatrics, Obstetrics and Gynecology, Dermatology and Venereology, Leprosy, Tuberculosis and Chest Diseases

- q) Indian Journal of Dental Research

### **C. International**

- a) WHO Publications – All
- b) Tropical Diseases Bulletin
- c) Vaccine
- d) Lancet
- e) British Medical Journal
- f) New England Journal of Medicine.
- g) BMC infectious diseases
- h) The Journal of Communicable Diseases
- i) Journal of Travel Medicine: official publication of the International Society of Travel Medicine and the Asia Pacific Travel Health Association
- j) The Lancet infectious diseases
- k) American Journal of Epidemiology
- l) International Journal of Epidemiology
- m) American Journal of Public Health
- n) Journal of Epidemiology and Community Health
- o) Population Reports
- p) The American Journal of Clinical Nutrition
- q) MMWR. Morbidity and mortality weekly report
- r) MMWR. Recommendations and reports: Morbidity and mortality weekly report Recommendations and reports / Centers for Disease Control
- s) MMWR. Surveillance summaries: Morbidity and mortality weekly report surveillance summaries / CDC

### **D. Useful Websites**

- a) [www.icmr.nic.in](http://www.icmr.nic.in)
- b) [www.mohfw.nic.in](http://www.mohfw.nic.in)
- c) [www.nacoonline.org](http://www.nacoonline.org)
- d) [www.npspindia.org](http://www.npspindia.org)
- e) [www.tbcindia.org](http://www.tbcindia.org)
- f) [www.iapsm.org.in](http://www.iapsm.org.in)
- g) [www.iphaonline.org](http://www.iphaonline.org)
- h) [www.who.int](http://www.who.int)
- i) [www.whoindia.org](http://www.whoindia.org)
- j) [www.cdc.gov](http://www.cdc.gov)
- k) [www.unicef.org](http://www.unicef.org)
- l) [www.pitt.edu/~super1](http://www.pitt.edu/~super1) (supercourse epidemiology)