

# **Syllabus for MD (Community Medicine)**

## **University of Delhi**

### **1. BROAD GOALS:**

To prepare a Planner, Manager, Solution -seeker, Researcher, Teacher and Philosopher in health issues (specifically preventive, promotive and rehabilitative health) of individual, family, community, nation and cross-nations.

### **2. PROGRAM OBJECTIVES:**

The objectives of postgraduate degree training programme in Community Medicine - in terms of knowledge and skills – are to enable a candidate to:

1. Lead team of health professionals for planning and managing community health problems effectively and proactively.
2. Study critically and manage existing health programmes of all levels (local state, national) and suggest alternatives for achieving desired goals.
3. Be proficient in human resource management along with materials (resources) and finance management for health schemes and health service implementation.
4. Have global perspective of health scenario and be capable of understanding cultural and societal specific health needs, its implications and its interventions.
5. Plan budget, execute and evaluate health problems of routine and emerging in nature.
6. Have strong analytical abilities, comprehension skills, creativity, lateral thinking and resourcefulness.
7. Administer functions of big hospitals (Size > 500 beds).
8. Function effectively as Industrial Health Officer.
9. Conduct and guide research in various disciplines of health sciences, health management, health systems research, and operational research.
10. Impart undergraduate curriculum of university in the subject in terms of knowledge and skills to medical, nursing and paramedical students.
11. Work as consultants / full time officer of national and international agencies (Govt. as well as Non Govt.) working in the field of health.
12. Identify and understand the changing health needs of ever-changing community and organize relevant effective interventions for amelioration of health problem.
13. Design need based teaching and training programmes / teaching materials for various categories of health professionals including its implementation and evaluation for the desired change in knowledge and skills.
14. Design need based health – teaching and training programmes / teaching materials for community at large for desired change in health practice.
15. Develop as a “Health – Philosopher.”

### 3. POST-GRADUATE TRAINING

#### Course Content

**History of Public Health and Evolution of Community Medicine:** Historical aspects of Community Medicine, Distinct Phases of evolution of Public Health, Recent national and international historical development such as Alma Ata Declaration, Millennium Development Goals, etc.

**Concepts in Community Medicine:** Concept of Health & Disease, Positive Health, Health Spectrum, Determinants, Indicators, Methods of Assessment of Health, International Classification of Diseases (ICD 10), Health Situation of India, Natural History of Disease, Levels of Prevention, various health care strategies, evidence based public health.

**Epidemiology:** Definition, aim and uses, Screening, Measures of causal association, Epidemiological study designs: Ecological Cross-sectional, Case-control, Cohort, Clinical trials, Systematic reviews including meta analysis, biases, confounders, surveillance, Investigation of outbreaks/epidemics, Prevention & Control of communicable and non-communicable diseases and other conditions, Role of Computers in Epidemiology.

**Biostatistics:** Probability theory, Level of Measurement, Central Tendency and dispersion, Sampling methods, Sampling errors and confidence intervals, Test of significance, Sample size calculation, Adjustments for confounding, Multivariate analysis, Correlation and regression, computer applications.

**Research Methods:** Literature search, Choosing research topics, Formulating research questions, Study designs – Quantitative & Qualitative, Measuring reliability and validity, Sampling, Instrument development, Data collection and management, Data analysis and report, Communicating research findings, Scientific writing, Development of research proposal, Ethical issues

**Epidemiology of Specific Diseases:** This includes key diseases of public health problem in India keeping in mind key operational National Health Programs in India.

- **Respiratory Infections:** Chicken Pox, Measles, Rubella, Mumps, Diphtheria, Whooping Cough, Meningococcal meningitis, Influenza, Avian Flu, ARI, SARS, Tuberculosis, and others
- **Intestinal Infections:** Poliomyelitis, Viral Hepatitis, Acute Diarrheal diseases, Cholera, Typhoid fever, Food Poisoning, Amebiasis, Ascariasis, Hook worm Infections, Dracunculiasis, and others
- **Arthropod Borne diseases:** Dengue, Malaria, Lymphatic Filariasis and others
- **Zoonoses: Bacterial Zoonoses-** Brucellosis, Leptospirosis, Plague, Human Salmonellosis; **Viral Zoonoses-** Rabies, Yellow Fever, JE, KFD, Chickungunya fever; **Rickettsial Zoonoses-** Scrub Typhus, Murine Typhus, Tick Typhus, Q fever; **Parasitic Zoonoses-** Taeniasis, Hydatid Disease, Leishmaniasis.
- **Surface Infections:** Trachoma, Tetanus, Sexually Transmitted Infections, Yaws, Tetanus, Leprosy, HIV/AIDS
- **Emerging and Re-emerging infectious diseases**
- **Hospital Acquired Infections**

- **Non Communicable Diseases:** Cardiovascular Diseases, Over weight and Obesity, Diabetes Mellitus, Cancers, COPD, Mental Disorders
- **Injuries and disasters:** Epidemiology of Road Traffic Injuries, Fall Related injuries, Drowning, Fire Related Injuries, Natural and Man Made and prevention and control.

**Health Management:** Health related policies and committees: National Health Policy, National Population Policy; Five Year Plans in India, National Health Mission (Rural and Urban), Program planning, implementation, monitoring and evaluation, Strategic projects management, Organizational behavior, Logistic management, Medical audit, Introduction to human resource management, Social Marketing, Quality management, continuous quality improvement, Operations Research, Introduction to Public Health Laws, Introduction to Health Medical Information System, Health Systems (organizations, agencies, infrastructure etc.) : International & within the country, Communication in organizations, networking and advocacy, Public Health emergencies, Disaster management, International Health, Organization of Health Services in India and its comparison with other nations

**Health Economics:** Introduction to Macro and Micro-economics, Pharmaco-economics, Demand and supply, Health financing, National and District Health Accounts, Insurance (commercial, social security), User fees, Resource mobilization and utilization, Costing and budgeting, Financial sustainability, Concept of Social Health Insurance, Community based Insurance in India.

#### **Health Services for Special Groups**

- A. **Reproductive and Child Health, Family Planning and Population Medicine:** Problems and strategies related to various services, initiatives, policies, legislations and programs for ANC, INC, PNC, Under 5 children population control, Women Empowerment, Gender related issues and Recent Advances.
- B. **School Health: need,** Organization, implementation, supervision and evaluation of school health program, School Health Services in Delhi, Concept of Health Promoting Schools.
- C. **Adolescent Health:** Needs, Adolescent Health Scenario, Newer Initiatives under RCHII for Adolescent Health.
- D. **Older persons:** Health Problems, Services and Programs, National Policy on older persons
- E. **Disadvantaged and marginalized Groups:** Health Problems, Services and Programs
- F. **Health of Person with Disability: Welfare and** Rehabilitation scheme for hearing, locomotor, visual, mental disability.
- G. **Urban Health:** Common Health Problems of urban slum dwellers, orphan, street children and homeless; Organization of health services, concept of clean city

**Nutrition:** Definitions, concepts, principles, Food Hygiene, Nutritive values, Nutritional Assessment, Nutritional Problems: PEM, Mineral and Vitamin Deficiencies, Food Toxin Diseases- Epidemic Dropsy, Endemic Ascites, Lathyrism, Micro-Nutrient

Malnutrition, Breast feeding, Complimentary Feeding, National Guidelines on Infant and Young Child Feeding, Baby Friendly Hospital Initiative, Strategies, Initiatives, Nutritional Policy and programs at various levels, Food Adulteration and Legislation to control, Food and Nutrition Security, Genetically Engineered and Modified Foods.

**Environmental Health:** Principles of environmental health and human ecology, Environmental health risk assessment, Environmental pollution, Climate Change including global warming and its impact on health, Public health Toxicology, Medical entomology including vector and rodent control, Waste disposal Biomedical Waste Management, Housing sanitation, Fair sanitation, Environmental health policy, programs & legislations,

**Occupational health and Safety:** Evolution, Definitions, Concepts and Scopes of occupational health, Work related Diseases, Programs and legislations related to safety, welfare and work, Ergonomics, Social Security: Indian Factories Act, ESI Act and other legislations, Insurance schemes, CGHS, Organization and Administration of medical care in a work environment including industries in unorganized and organized sectors, Recent Advances in Occupational Health.

**Population Science & Genetics:** Factors affecting the size of the population, Measures of fertility and mortality, Population projection, Demographic transition, Health Information System of India, Sources of Health Information, Sample Registration System, National Demographic and Health Surveys- NFHS, Rapid Household, Life table, Fertility Control: Contraception including Sterilization and Modern, Methods of Contraception, Urbanization, Genetics: Definitions, Concepts, Problems, Genetic Counseling Management, Recent Advances including Mapping of Genes, Human Genome Project.

**Mental Health:** Concepts of community mental health, Problems, Prevention and Control of Mental Disorders including programs and legislations, De-addiction Program In India.

**Medical Sociology and Behavioral Sciences:** Concepts, Social and Behavioral Problems, Cultural, Socio-economic and Psychological Determinants and impacts on health problems, Methods of Assessment, Strategies, Policies for prevention and control, Community Participation, Utilization of Health Services, Knowledge, Attitude, Behavior and Practices related to various public health problems, Clinico-social evaluation of individuals, Public Relation, Doctor-Patient relationship and hospital sociology, Medical anthropology, Accelerated changes in life style.

**Information, Education and Communication:** Concepts, Principles, Methods, Planning, Organization and Evaluation, Barriers for effective communication, Internet application in Community Medicine.

**Pedagogy:** Learning objectives, Learning methods, techniques, processes, evaluations.

**Health and Information Technology** – Computer application, Software for research and statistical analysis, Awareness regarding Remote Sensing, GIS and other new technologies.

**Public Health Legislations**

#### 4. SCOPE OF TRAINING

There are following skills and capacities required to achieve above objectives:

- A. General Skills:** The post graduate student should be able to: Elicit the clinico-psychosocial history to describe the agent, host and environmental factors that determine and influence health; Recognize and assist in management of common health problems of the community; Apply principles of epidemiology in carrying out epidemiological studies in the community; Work as a team member in rendering health care; and Carry out health education effectively for the community.
- B. Laboratory and diagnostic skills:** A) Water testing, Stool testing, identification of vectors and microbiological tests for proper diagnosis.
- C. Communication Skills:** able to communicate with the family, community, and government and non-government organizations; able to organize health education program in the community, generate community participation, etc.
- D. Problem Solving skills:** Communicable and Non-Communicable diseases (including social problems) at the family and community level.
- E. Health care delivery skills:** Skills required to deliver Reproductive and Child Health at the community level; a minimum of 5-10 families to followed for a year to study various family dynamics aiming at educating and improving the health of family members;
- F. Epidemiological, Statistical and Analytical skills:** Conduction of survey or study; analysis and interpretation of results.

**Compulsory dissertation /Thesis in Community Medicine  
Objectives**

1. The student should be able to demonstrate capability in research by planning and conducting scientific inquiry and data analysis and deriving conclusion
2. Communicate scientifically information for health planning

**Guide/ Supervisors for Thesis**

1. Chief Supervisor should be from concerned department
2. Co-Supervisors can be from other disciplines related to thesis.

**Submission of Thesis Protocol**

Protocol in essence should consist of

1. Introduction and objectives of research project
2. Brief review of literature
3. Suggested materials and methods
4. Ethical Issues
5. Bibliography

The Protocol is to be approved in accordance with the existing regulations of Delhi University

**Submission of Thesis**

Thesis will be submitted I year prior to examination

Thesis in essence should consist of

1. Introduction

2. Review of Literature
3. Aims and Objectives
4. Materials and Methods
5. Results
6. Discussion
7. Summary, Conclusions and recommendations
8. Bibliography

### **Evaluation of Thesis**

Thesis will be evaluated in accordance with the existing regulations of Delhi University.

- G. Organizing and management skills:** developing program for community participation; demonstration of Inter-sectoral coordination; **Health Management:** demonstration of logistic and resource management skills in health centers; Health Center Drug Indent Preparation; Guide and train workers (TBA, AWW, ASHA, Health workers, Health assistants, PHN) and Supervision of workers and programs.
- H. Skills to be acquired to manage at primary health center, community health centers, and district level hospital.** For that exposure to these centers and hospital required.
- I. Teaching Skills:** Teaching of medical, nursing, dental, paramedics, etc.

## **5. EVALUATION**

### **5.1 Internal (Formative) Evaluation**

Internal Assessment in reality is done everyday to assess the training and to identify the weaknesses as well as the strength of the candidate. Thus appropriate corrective methods can be adopted at the right time so that a well-trained and competent community physician worthy of a post graduate degree is available for the society. However a formal assessment can be recorded every 6 months.

1. A log Book should be maintained recording the posting in centres, skills acquired, presentations done, journal clubs presented, seminars presented and attended, papers attended and presented, Conferences and workshops attended, published work, thesis progress, undergraduate classes taken etc.
2. Research work should be assessed every quarterly. The protocol and the final results should be presented in the entire department
3. Evaluation sheets may be incorporated for the purpose of assessment. The following points may be considered in the scheme for evaluation of presentations such as seminars and journal clubs
  - a. Choice of article/topic (unless specifically allotted)
  - b. Completeness of presentation
  - c. Clarity and cogency of presentation
  - d. Understanding of the subject and ability to convey the same
  - e. Whether relevant references have been consulted

- f. Ability to convey points in favor and against the subject under discussion
  - g. Use of audio visual aids
  - h. Ability to answer questions
  - i. Time scheduling
  - j. Overall performance
4. In the case of specific postings similar points may be assessed with regard to knowledge and skills. It is also recommended that the candidate be assessed with regard to : ability to get along with colleagues and conduct with patients and staff.
  5. Every six monthly/ yearly departmental exam could be conducted to evaluate the performance in cognitive, psychomotor and affective domains.
  6. Sent Up Examination to be conducted before final University Exam

Grading may be done in one of the following ways:

1. Awarding actual marks
2. Awarding scores
  - a. 0= Poor
  - b. 1=Below average
  - c. 2=Average
  - d. 3=Above average
  - e. 4=good
3. Awarding grades
  - a. A+=90-100%
  - b. A=80-89%
  - c. A-=75-79%
  - d. B+=70-74%
  - e. B=60-69%
  - f. B-=50-59%
  - g. C=<50%

The grades must be endorsed by more than one faculty member or an average obtained by pooling the grades of different faculty members. This must be conveyed to the candidate periodically (atleast once in every six months) so that the candidate knows where he/she stands.

## **5.2 University (Summative) assessment**

The University or summative examination shall be held at the end of three years of the training programme. This would include assessment of the thesis and a formal examination on the theoretical and practical aspects of the specialty of Community Medicine.

There shall be four theory papers.

### **Paper wise distribution of the topics is given below:**

- I- Principles and methods of epidemiology, Communicable and non-communicable diseases, National health programmes.
- II- Principles and practices of health administration.

III- Medical and health statistics, Nutrition, Occupational health and Environmental sanitation.

IV- Social and behavioral sciences, Research methods, Mental health and Education.

**Practical**

<b>Component</b>
Long case
Short cases
Spots
Exercises
Microbiology
Grand viva
Thesis Viva

Viva Voce is expected to be conducted at every stage of the practical examination. Additionally a formal Grand viva voce may be held at the end of the practical examination.