DEPARTMENT OF COMMUNITY MEDICINE, J.N.M.C., AMU, ALIGARH

SYLLABUS OF STUDY FOR M.D. IN COMMUNITY MEDICINE
(REVISED SEPTEMBER, 2015)

Determination Objectives:

To prepare the Community Medicine specialist of higher caliber, who an understanding of clinical practice of Epidemiological principles and methods and the Epidemiology of communicable and non-communicable disease, a familiarity with statistical methods, the relevant aspects and social sciences and the principles of administration and management, and the ability to use this knowledge to the management of health services and the study of diseases and health.

General Consideration and approach to training:

The aim of M.D. (Community Medicine) programme is to train residents to become competent and independent community physicians. The course also aims to make residents well conversant in research methodology by undertaking thesis work under the guidance of a faculty member.

Mode of teaching is essentially self directed, facilitated by formal teaching thorough a number of teaching – learning methods such as lectures, case discussion, problem based exercise solving, visit to places of public health importance including District Hospital, CHC, PHC, aganwadi centres, factories, seminar presentation etc.

For oriented in clinic methods, the residents posting to OPDs in the Hospital and Heath centres.

Further, for teaching research methodology, a thesis topic is allocated after six months to one year of residency. Thesis work gives first hand exposure in designing study, sampling, data collection, data management and review of literature etc.

Toward the end of completion of his/her training the Postgraduates students be:

1. Aware of physical social, psychological, economic and environmental aspect of health and disease in individual, family and community,
2. Able to apply clinical skills to recognize and manage common health problems including their physical, emotional, social and economic aspects at the individual and family levels.
3. Able to manage/deal with medical emergency at the community level.
4. Able to plan and manage the health problems of the community, he she serve s to achieve this he she will be able to : organize epidemiological research studies in various aspects of health. For his he she should be able to design a study, collect data analyze it with appropriate stoical tests and make a report, identify the health needs and health demands of the community and priorities the most important problems and help formulate a plan of action to manage them under National Health Programme guidelines including population control and family welfare program. He/She should be able to assess and allocate resource implement and evaluate the programme, demonstrate ability of organizing prevention and control of communicable and non-communicable disease, Organize health care services for special groups like mothers, infants, under-five children, school children, handicapped children and juvenile delinquents etc; organize health care in case of disasters and calamities, able to work as an effective member of the health team and as team leader, able to co-ordinate with and supervise other members of the health team and maintain liaison with other agencies able to plan and implement health education programme able to promote community participation especially in areas of disease control, health education and implementation of national programme aware of the national
priorities and the goals to be achieved to implement primary health care, able to act as an effective teacher and trainer of Community Medicine.

COURSE CONTENTS

PAPER-I

I. GENERAL EPIDEMIOLOGY AND SCREENING

1. Use of epidemiological tools to make a community diagnosis of the health situation in order to formulate appropriate intervention measures. Epidemiology, definition concept and role in health and disease.
2. Definition of the terms used in describing disease transmission and control.
3. Natural history of a disease and its application in planning intervention.
4. Modes of transmission and measures for prevention and control of communicable and non-communicable disease.
5. Various types of epidemiological designs.
6. Planning an interventional programme with community participation based on the community diagnosis
7. Need and uses of screening tests.
8. Accuracy and clinical value of diagnostic and screening tests (sensitivity, specificity & predictive value)
9. Principal sources of epidemiological data.
10. Definition, calculation and interpretation of the measures of frequency of diseases and mortality.
11. 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.
12. The derivation of normal values and the criteria for intervention in case of abnormal values
13. Applications of computers in epidemiology
14. Critical evaluation of published research

II. DISEASE EPIDEMIOLOGY

a) Epidemiology of Communicable diseases
b) Epidemiology of Non-Communicable diseases

The specific objectives of selected communicable diseases of public health importance for which National Disease Control/Elimination/Eradication Programmes have been formulated are described here. For other diseases, the individual teacher would formulate the objective while drawing the lesson plans. The idea of the formulating objectives for a few diseases is to highlight their importance and to emphasize certain outcomes.

Extent of the problem, epidemiology and natural history of the disease, relative public health importance of a particular disease in a given area, influence of social, cultural and ecological factors on the epidemiology of the disease, Epidemiology of communicable and non-communicable diseases of public health importance and their control
Control of communicable and non-communicable diseases by:
1. Diagnosing and treating a case and in doing so demonstrate skills in clinical methods, use of essential laboratory techniques, selection of appropriate treatment regimens, follow-up cases, principles of planning, implementing and evaluation, control measures for the diseases at the community level bearing in mind the relative importance of the disease.
2. Level of awareness of causes and prevention of diseases amongst individuals and communities.
3. Control of communicable and non-communicable diseases by diagnosing and treating a case and in doing so, demonstrate skills instituting measures where necessary, for preventing disabilities, deformities. Details are given below:

**EPIDEMIOLOGY OF COMMUNICABLE DISEASES**
- Air-borne Diseases: Small Pox, Chicken Pox, Measles, German Measles, Diphtheria, Whooping Cough, ARI, Tuberculosis, Influenza, Meningococcal Meningitis, Mumps, SARS
- Water-Borne Disease: Viral Hepatitis, Enteric Fevers, Cholera, Food Poisoning, Gastro-Enteritis.
- DDC Programme, Poliomyelitis
- Arthropod-Borne Disease: Malaria, Filaria, Leishmaniasis, Arboviral Diseases and its Classification, Dengue Fever, Dengue Haemorrhagic Fever, KFD, Japanese Encephalitis, Yellow Fever
- Contact Diseases: Leprosy, Sexually Transmitted Diseases, AIDS
- Zoonotic Diseases: Rabies, Plague
- Soil Transmitted Diseases: Tetanus
- Emerging and Re-emerging diseases
- Others

**EPIDEMIOLOGY OF NON-COMMUNICABLE DISEASES**
- Diabetes Mellitus, Hypertension, CHD, Stroke, RHD, Blindness, Accidents & Disaster Management
- Cancers, Obesity and Other Life Style Related Diseases, Mental Health, Alcoholism, Drug Addition, Smoking

4. Training of health workers in disease surveillance, control and treatment, and health education

**III. BIOSTATISTICS**

1. The scope and uses of biostatistics
2. Collection, Classification and presentation of statistics data
3. Analysis and interpretation of data
4. Obtaining information, computing indices (rates and ratio and missing comparisons)
4. Applying statistical methods in designing of studies, choosing of appropriate sampling methods, and sample size, applying suitable test of significance, use of statistical table

**PAPER-II**

IV. HEALTH PLANNING AND MANAGEMENT

1. Explain the terms public health administration, regionalization, 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,
2. Component of Health 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, 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 organization, function and staffing pattern of community health centre, primary health centre, sub-centre etc. the job description of health supervisor (male and female); health workers village health guide; aganwadi workers, traditional birth attendants. The activities of the health team a the primary health centre, community health centre, district hospital

3. Familiarity with management techniques define and explain principles of management; explain board functions of management; personnel and material management

4. The components of healthcare delivery. For this, he should; appreciate the need for international health regulations and disease surveillance, be aware of the constitutional provisions for health in India, Enumerate the major divisions of responsibilities and functions (concerning health) of the union, local and the state governments. Appreciate the role of national, international voluntary agencies in health care delivery,

5. Explain general principles of health economics and various techniques of health management e.g.; cost-effectiveness, cost-benefit etc.

6. Managerial skills in the areas of planning and organization of health services, supervision, collection of data, maintenance of records, transmission of data.

7. Health situation in India

8. National Health Policy

V. SCHOOL HEALTH

Problems of school and adolescents; Objectives of the School Health Programme.
1. Activities of the programme like; Carrying out periodic medical examination of the children and the teachers, Immunization of the children in the School Health Education, Mid day meals,
2. Obtaining participation of the teacher in the school health programme including maintenance of records, defining healthful practices early detection of abnormalities
3. Organization, implementation, supervision and evaluation of school health programme.

VI. OCCUPATIONAL HEALTH

Relate the history of symptoms with the specific occupation including agriculture, Identification of the physical chemical and biological hazards to which workers are exposed to while working in a specific occupational environmental diagnostic criteria of various occupational diseases, Preventive measures against these diseases including accident prevention, various legislations in relation to occupational health, Employees State Insurance scheme

XII. HEALTH EDUCATION (INFORMATION, EDUCATION, COMMUNICATION)
Communicate effectively with individuals, family and community using look and techniques of information, education, communication to do so the student should; Appreciate principles of communication and barriers to effective communication, Principles, methods, education of health, List various methods of health education with their advantages and disadvantages, select use appropriate media (simple audiovisual aids) for effective health education, Use every opportunity for health education of the individual, family and the community.

VIII. URBAN HEALTH

Common health problems (Medico, Social, Environmental Economic, Psychological) of urban slum dweller, Organization of health services for slum dwellers, Organization of health services in urban areas.

IX. NATIONAL HEALTH PROGRAMMES

Background and epidemiological basis, objectives, action plan, targets, operations, achievements and constraints in major National Health Programs related to communicable and non-communicable diseases. Institution of programmes for the education of individuals and communities.

PAPER-III

X. CONCEPTS IN HEALTH AND DISEASE

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,

XI. ENVIRONMENTAL HEALTH

1. Awareness of relation of Environment of Health, Awareness of the concept of safe and wholesome water, Awareness of the requirements of a sanitary sources of water, Understanding the methods of purification of water on small scale with stress on chlorination of water, Various biological standards
2. Concepts of safe disposal of human excreta
3. Physical chemical standards; tests for assessing quality of water
4. Disposal of solid waste, liquid wastes both in the context of urban and rural condition
5. Problems in the disposal of refuse, sullage and sewage
6. Sources, health hazards and control of environmental pollution, Influence of physical factors – like heat, humidity, cold, radiation and noise – on the health of the individual and community, standards of housing and the effect of poor housing on health

XII. ENTOMOLOGY

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

XIII. DEMOGRAPHY & FAMILY WELFARE

(i) Definition of demography and its relation to Community Health
(ii) Stages of the demographic cycle and their impact on population
(iii) Definition, calculation and interpretation of demographic indices like birth rate, death rate, growth rate, fertility rate, reasons for rapid population growth in the world, especially in India
(iv) Need for population control measures and the
(v) National Population policy
(vi) Identify and describe the different family planning methods and their advantages and shortcoming
(vii) Principles of Counseling, Client satisfaction
(viii) Medical Termination of Pregnancy Act, Organizational, technical and operational aspects of the National Family Welfare Programme and participation in the implementation of the Programme, guidelines for MTP and infertility services
(ix) Target Free Approach
(x) Recent advances in contraception

XIV. NUTRITION AND DIETETICS

(i) Nutrition problems of the country,
(ii) Role of nutrition in Health & Disease,
(iii) Common sources of various nutrients and special nutritional requirement according to age, activity, physiological conditions,
(iv) Nutritional assessment of individual, families and the community be selecting and using appropriate methods such as: anthropometry, clinical; dietary, laboratory techniques
(v) Compare recommended allowances of individual and families with actual intake,
(vi) plan and recommend a suitable diet for the individuals and families bearing in mind local availability of foods economic status etc,
(vii) Common nutritional disorder: protein energy malnutrition, Vitamin , A deficiency, anemia, iodine deficiency, fluorosis, food toxin diseases and their control and management,
(viii) National Nutritional policy, and National programmes in nutrition and their evaluation,
(ix) Food adulteration: prevention and control, Legislation to control,
(x) Food and Nutrition Security,
(xi) Genetically Engineered and Modified Foods.

XV. SOCIAL SCIENCES

(i) Condition 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,
(ii) 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,
(iii) Development of good doctor–patient relationship, public relations and community participation for health sectors,
(iv) Identification of social factors related to health and disease in the context of urban and rural societies,
(v) Impact of urbanization and industrialization on health and disease.

**PAPER-IV**

**XVI. REPRODUCTIVE AND CHILD HEALTH (RCH)**

(i) Need for specialized services for women and children,
(ii) Magnitude of morbidity and mortality in these groups in a given area, local customs and practices during pregnancy, children and lactation,
(iii) Concepts of “high risk” and “MCH package”, child development services scheme and other existing regional programmes
(iv) Under – 5: Morbidity mortality high risk and care,
(v) Monitoring of growth and development and use of Road to Heath Chart
(vi) Immunization - all aspects (Basics of immunization; immunizing agents; administration, storage and transportation of vaccines; cold chain, side effects & complications etc.) newer vaccines.
(vii) Organization implantation and evaluation of programme for mothers and children as per National Programme guidelines,
(viii) National policy in children.

**XVII. GENETICS AND IMMUNOLOGY**

(i) Definitions, Concepts, Problems,
(ii) Genetic Counseling Management,
(iii) Recent Advances including Mapping of Genes, Human Genome Project.

**XVIII. RECENT ADVANCES**

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TEACHING AND TRAINING

Able to act as a good teacher/Facilitator for this he/she will require – knowledge of general principles of teaching learning methods of instruction methods of evaluation.

SKILLS

GENERAL SKILLS

The postgraduate student should be able to: Elicit the clinico-social history to describe that 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 a team member in rendering health care, and carry out health education effectively for the community.

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 home: 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 vector
4. Hospital Teaching: Eliciting clinico-social history and examining the patient for studying the natural history of various communicable and non-communicable diseases, for making the diagnosis and suggest appropriate treatment, including the collection of appropriate material for microbiological, pathological or biochemical tests; fixing staining and examining smears-peripheral blood smear for malaria and filariasis, sputum for AFB, slit skin smears for leprosy, Hb estimation, urine and stool examination; assessing the severity and/or classifying dehydration in diarrhea, upper respiratory tract infection, dog bite, leprosy. A post-graduate student must also be able to suggest measures to prevent the common diseases like tuberculosis and other vaccine preventable diseases, sexually transmitted diseases, leprosy, vector borne diseases, upper respiratory tract infections, enteric fever, worm infestations, rabies, diarrhea, diabetes, hypertension, protein energy malnutrition, cataract, cancer, goitre, etc.; suggest use of proper screening methods in early diagnosis of common diseases, take necessary steps in disease outbreak/epidemics, natural disasters; investigation of epidemic of food poisoning; notification organizing medical care following disasters.
5. Reproductive Child health: Antenatal-examination of the mother, application of the risk approach in antenatal care, intranasal – conducting and normal delivery early recognition of danger signals in intranasal period referral of cases requiring special care, Postnatal care – assessment of the mother and new born , advice about appropriate family planning methods promotion of breast-feeding advice on wearing assessment of growth and development of the child – use of “road to death” card, recording important anthropometric assessment of the child giving immunization to the child; identifying birth-risk, infant,
7. Occupational Health inspection of work sites, recommendation improving worksites, medical examination of workers
8. Health care of the Community: ensuring community participation in health care, arranging intersectoral coordination where necessary, working in liaison with other agencies individual in health care in various National Health Programme
9. Health Management: Be an effective team leader, guide and train workers, supervisor of workers and programmers,
10. Family planning Counseling on appropriate methods: Organize, Important, Supervise & Executive Family Welfare Programme in an area
11. Managerial Skills - Visit to Institutes of Public Health importance in India
12. Teaching Skills

ACTIVITIES

Postings at RHTC and UHTC

Central OPD, Family Health Care: at least twenty families, family welfare activities, Health Education: participates in at least ten sessions in field area, School Health: participates in at least ten seminars in each posting, immunization: organize and conduct at least two seminars independently, verbal autopsy. At least 5 adult deaths and all infants and maternal deaths, record analysis, Public Health Laboratory. Independent analysis of 20 samples of water, sputum, stool, blood, urine, health Survey, epidemiological immunizing, Occupational Health - visit to factory, study of occupational health measures undertaken there, visits to District Hospital, CHC, PHC etc.

Other Postings.

Skin OPD- one month, T.B. & Chest-one month, Obst & Gynae-one month (optional), ACMO-one month, Paeds.-15 days, Ophtho-I5 days, ROME Scheme, Hospital management- 15 days, Microbiology-1 5 days

According to MCI guidelines, the students will maintain a log book which will be evaluated by teachers. There will be at least one internal examiner per year. At least 10 presentations per year are required. These will include-
Protocol presentation, data from OPD posting, Data from epidemiological study/field survey, Journal club presentation. The students will complete at least 10 statistical exercises per year.

EVALUATION

Concurrent evaluation of the students’ performance is done by staff members. Assessment is also done for individual activities such as seminar, journal club etc. The students are required to get qualifying marks in Bio-statistics examination held during the course. Internal assessment is given due credit in the final examination.

THEORY PAPER

Paper-I (Epidemiology, Biostatistics, Research Methodology and Health Information System)
Paper-II (Public Health, Hospital Administration, National Health Programmes, Health Planning and Management, Occupational Health)
Paper-III (Concepts of Health and Disease, Environmental Health, Entomolgy, Demography, Social Sciences, Nutrition and Urban Health)
Paper-IV (Reproductive and Child Health, Genetics, Immunology, Recent Advances)
CLINICAL/PRACTICAL:

Family study/Long case - 1 hour, Short case - 15 minutes, Epidemiological and Statistical exercises - 1 hour, Spotting-15 minutes, Public Health Laboratory - 1 hour,

THESIS VIVA
VIVA-VOCE

PRACTICAL TRAINING WILL INCLUDE:

A. The technique needed for the organization and administration of Public Health laboratories in the filed of water Chemistry, water Bacteriology, Microbiology, Entomology and other investigation of Public Health Importance and Nutrition,  
B. Posting during the First year:- (JR-I) Skin OPD-One Month, T.B. Chest one Month, Obst. Gynaecology one Month (Optional), ACM.O, Paediatrics-15 days, Ophthalmology - I 5 days, RHTC (by rotation]-15 days, UHTC, Rome Scheme
C. Posting during the Second year:- (JR-II): District T.B. Centres, Leprosy centre and RHC (Combined posting one month), RHTC, UHTC, Rome Scheme  
D. Posting during the Third year:- (JR-III): Hospital management posting through CMS Office One month (including Record Section), Microbiology -15 days, Palhology (Including Blood Bank] -15 days, RHTC, UHTC'ROME
E. According to MCI guidelines the P.G. students will maintain a log book which will be checked  
F. There will be at least one internal examination every year for PG students  
G. During the rural posting PG students will be required to do epidemiological study in the community. 
H. At Least ten presentations per year will be required. This will include: Protocol presentation, Presentation of the OPD posting, Presentation of the epidemiological Studies, Presentation of the district Hospital posting. 
I. PG students will do at least 10 statistical and epidemiological exercises during the second and third year. 
J. Internal assessment will be done based on performance.
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Paper-I (Epidemiology, Biostatistics, Research Methodology and Health Information System)

(i) General Epidemiology
(ii) Disease Epidemiology
   a) Epidemiology of Communicable diseases
   b) Epidemiology of Non-Communicable diseases
(iii) Screening of Diseases
(iv) Biostatistics and Research Methodology
(v) Health Information System

Paper-II (Public Health, Hospital Administration, National Health Programmes, Health Planning and Management, Occupational Health)

(i) Public Health Administration including organization of various health agencies
(ii) Medical Care, School Health, Health Services for Handicapped
(iii) Occupational Health
(iv) Hospital Administration
(v) Health Education,
(vi) National Health Programmes, and their Evaluation, Monitoring and Surveillance
(vii) Health Planning and Management
(viii) International Health

Paper-III (Concepts of Health and Disease, Environmental Health, Entomology, Demography, Social Sciences, Nutrition and Urban Health)

(i) Environmental Health
(ii) Demography and Family Welfare
(iii) Biosocial and Behavioral Sciences
(iv) Nutrition & Dietetics
(v) Urbanization and Industrialization

Paper-IV (Reproductive and Child Health, Genetics, Immunology, Recent Advances)

(i) Reproductive and Child Health
(ii) Social Paediatrics, Social Geriatrics and Social Obstetrics
(iii) Genetics
(iv) Immunology
(v) Recent Advances in Community Medicine

CLINICAL/PRACTICAL

(i) Family study/Long case - 1 hour
(ii) Short case - 15 minutes
(iii) Epidemiological and Statistical exercises - 1 hour
(iv) Spotting-15 minutes
(v) Public Health Laboratory - 1 hour
THESIS VIVA

VIVA - VOCE