



**BHARATH INSTITUTE OF HIGHER EDUCATION
AND RESEARCH**

PROGRAM MD COMMUNITY MEDICINE

Preamble

M.D in Community Medicine is a Professional degree conferred in recognition of a candidate's command of a comprehensive body of knowledge in the field of public health, medical education and related disciplines. The focus of this degree is the development of knowledge, skills and aptitude in the areas of professional leadership and application of existing State-of-the-art knowledge and approaches to medical education and public health. It shall provide a comprehensive approach to public health issues in general and to Community Medicine in particular with special stress to medical education, research and service in the community settings.

COURSE CONTENT

Paper I

Epidemiology including Biostatistics, Concepts of Communicable Diseases and Non communicable Diseases, Environmental health and Medical sociology

Epidemiology

- History of Epidemiology
- Concepts in Epidemiology
- Introduction to Descriptive and Analytical Epidemiology
- Quantitative Epidemiologic Methods
- Epidemiology of outbreaks / investigations
- Epidemiologic Surveillance
- Epidemiological studies
- Qualities of epidemiological tests
- Outcome measurement in health care
- Sensitivity and specificity
- Introduction to Geographic Information Systems
- Health mapping
- Disease mapping
- Record linkage
- Biomarkers
- Registries

Bio-statistics

- Research methodology
- Survey methodology
- Designing a research study
- Preparation of research protocol
- Determining sample size
- Research methods in social and behavioural sciences
- Sampling method
- Sampling and different types of sampling technique
- Introduction to Biostatistics

- Basic concepts of statistical reasoning, data description, descriptive statistics, probability concepts
- Tests of significance
- Estimation, confidence intervals, hypothesis testing, different tests of significance and the situation of their application – concept of standard error, chi-square, Z test, T test, correlation coefficient, linear regression, analysis of variance procedures, nonparametric methods, multivariate techniques, survival analysis and operational research – health service research.
- Introduction to statistical computing
- Introduction to statistical packages
- Computer skills

Communicable and Non-communicable diseases

- Concepts – epidemiology, prevention & control

Environmental Health

- Principles of Environmental Health and Human Ecology
- Environment health risks and their impact
- Environmental pollution
- Waste disposal
- Housing sanitation and standards
- Environmental Policy Programmes and Legislations
- Medical Entomology including vector and rodent control
- Current and emerging issues in environmental health

Occupational Health

- Health problems and their prevention and control
- Legislation related to health, safety and welfare of workers
- Organisation and administration of occupational health services,
- Industrial hygiene
- Recent advances

Medical Sociology & Psychosocial issues

- Cultural, socio economic and psychological determinants and their impact on health
- Knowledge, attitude and practice related to public health problems
- Clinico social case study in the family and community
- Impact of urbanization on health
- Doctor-patient relationship and hospital sociology
- Changes in lifestyle and health
- Common mental health issues and prevention

Paper II

Reproduction and Child Health Issues including Public Health Nutrition

- Reproduction and child health issues – relevance
- Policy and Programmes in Reproductive Child Health
- Reproductive Child Health package and interventions
- Women empowerment and gender related issues
- Newer initiatives in Reproductive Child Health
- Management of reproduction including sterility and birth regulation
- MTP, prenatal determination of sex
- School health
- Adolescent health
- Health problems, services and programmes for the priority groups – Geriatrics, Tribal
- Diet and life style issues

Public Health Nutrition

- Nutritional problems of the country; Role of nutrition in Health and Disease.
- Common sources of various nutrients and special nutritional requirement according to age, sex, activity, physiological conditions.
- Nutritional assessment of individual, families and the community by selecting and using appropriate methods such as : anthropometry, clinical, dietary, laboratory techniques
- Compare recommended allowances of individual and families with actual intake.
- Plan and recommend a suitable diet for the individuals and families bearing in mind local availability of foods, economic status and therapeutic diets.
- Common nutritional disorders: protein energy malnutrition
- National Nutritional Policy
- National programmes in nutrition and their evaluation
- Food hygiene, food adulteration, legislation to control adulteration

Paper III

Primary Health Care and Health System Management

- Rural sanitation
- Health legislations
- Health care system in India
- Health care delivery system in developed countries
- Socialized medicine
- Health insurance
- Urban Health Services in India
- Primary Health Care Initiative
- Health Promotion Initiatives
- Programme evaluation
- Cost benefit and cost effectiveness
- Quality of health care
- Health care versus medical care
- Role of NGOs in health care of the community
- Spiraling cost of medical care
- Public Health Program Planning and Evaluation
- Public Health Leadership

- Medical Anthropology
- Health and Public Health Law
- Health Economics
- Finance for Health Management
- Health Information Systems
- Technology assessment and economic evaluation of health programmes
- Health Care Management System
- Principles of inspection and supervision
- Modern concepts in health care management
- Total quality management
- Healthcare marketing
- Leadership in public health
- Community Based public health programmes
- Public health funding
- Management information systems
- Cost analysis and Cost effectiveness
- National Health Policy
- Health Planning in India
- National Rural Health Mission and National Urban Health Mission
- National Health Program
- Rural development
- Five year plans

Health Education (Information, Education, Communication)

- Effective communication with individuals, family and community using tools and techniques of information, education, communication.
- Principles of communication and barriers to effective communication
- Principles, methods and evaluation of health education
- Methods of health education with their advantages and disadvantages
- Use of appropriate media (simple audiovisual aids) for effective health education

Paper IV

Global Health Initiative and Health Technology

- Emerging health issues of national and international concern
- Disaster management
- Social and behavioral aspects of global health
- Ethical issues in public health
- Health policy and politics
- Behavioral and social aspects of public health
- Epidemiology of bioterrorism / catastrophic events
- Health promotion in Multicultural populations
- Public health laws – national and international
- International health organizations
- World health organization
- Public health issues facing developing countries
- Concept of global health and global community
- Remote sensing, GIS and other new technologies

Class and field training

1. Self directed – At least twice a week in which the trainee will present articles, abstracts from journals, seminars, group work, epidemiological and statistical exercises, case studies and family study presentation.
2. Facilitating learning of undergraduates (Interactive session)
3. Participation in scientific programmes

1st year – Interactive sessions, Seminars, Journal Clubs, Practical sessions in entomology, Parasitology, Biostatistics and Epidemiology.
Selection of thesis topic
Thesis Registration and thesis work
Undergraduate teaching
Other services – Camps, Clinics, investigation of epidemics, Natural disaster management, Health Programme Evaluation, Training in computer application

2nd year – Posting to different departments

A. Field and Laboratory Posting

1. PHC / CHC 2 months – 8 weeks
2. District Health Administration – 1 week
3. Urban – 2 weeks
4. District TB Control – 1 week
5. Local bodies in health, NGO's and private agencies – 1 week

B. Medical specialties

1. Obstetrics and Gynaecology – 2 weeks
2. Child health – 4 weeks
3. General Medicine – 2 weeks
4. Psychiatry – 2 weeks
5. Ophthalmology – 2 weeks
6. Dermatology – 2 weeks
7. Infectious diseases – 2 weeks
8. Physical Medicine and Rehabilitation – 1 week
9. Community Dentistry – 1 week
10. Community Oncology – 1 week
11. Occupational Health – 1 week
12. Microbiology practicals – 2 weeks
13. Government Analyst and Public Health Lab – 1 week
14. Respiratory Medicine – 1 week
15. Geriatrics – 2 weeks
16. Pain and Palliative – 1 week
17. Family planning – 2 weeks
18. Surgery – 2 weeks
19. Anesthesia - 2 weeks

20. Casualty – 2 weeks

3rd year –

Posting to PHC / CHC – 4 weeks

UHC – 2 weeks

Interactive sessions, Seminars, Journal Clubs,

Other services – Camps, Clinics, investigation of epidemics, Natural disaster management, Health Programme Evaluation

Thesis Completion and submission 6 months before University Examination Log Book

Each trainee shall maintain a log book in which the daily work is documented. This will be signed by the faculty guide concerned and submitted to the HOD every Saturday for concurrent evaluation which shall include, but not limited to, punctuality, regularity, sincerity, aptitude, dedication, innovation, commitment and participation in MBBS training programmes, interaction / discussion skills, initiatives and willingness to take up responsibilities etc. HOD shall discuss with the guide concerned and document it in the concurrent assessment form. Necessary feedback shall be given to the trainees.

Examination pattern

Written exam will consist of 4 theory papers each of 3 hours duration, carrying 100 marks each.

Paper I – Epidemiology including Biostatistics, Concepts of Communicable diseases and noncommunicable diseases, Environmental health and Medical sociology

Paper II – Reproduction and child health issues including Public Health Nutrition

Paper III – Health System Management and Health Education

Paper IV – Global Health Issues and Health Technology

Practical and Viva

Day : 1

Practical 1

Clinico social study and discussion – **2 Hrs - 30 marks**

Identification of health problems in the community – 2 short cases – **1 Hr – 2 x 10 = 20 marks**

Practical 2

Microbiology practical

Identification of spotters, vectors and parasites – **30 minutes = 15 marks**

Practical 3

Exercise in Nutrition / Water sample analysis / Interpretation of data reports and discussion –
1 Hr – 15 marks

Practical 4

Epidemiology exercise

Statistics exercise - 1 Hr - 2 x 10 = 20 marks

Day 2

Pedagogy

Thesis discussion- - 1 Hr for each candidate – 50 marks

Viva Voce 1 Hr / candidate – 50 marks

- 1 Hr / candidate – 100 marks

* Thesis to be accepted for eligibility for the exam

Total marks for practical & viva voce– 300

Practical – 100

Pedagogy – 50

Thesis Defence – 50

Viva voce – 100

U15MDCM01 Paper - I Epidemiology Including Biostatistics, Concepts of Communicable Diseases and Non Communicable Diseases, Environmental Health and Medical Sociology

CO1: Ability to identify and investigate an Outbreak.

CO2: Ability to describe the natural history, aetiology and risk factors of a disease.

CO3: Competency to conduct an epidemiological study, including population studies.

CO4: Knowledge about prevention and control of communicable and Non-communicable diseases.

CO5: The ability to identify cultural, socio-economic and psychological determinants of diseases.

CO6: The ability to apply the principles of biostatistics in collecting, compiling and analyzing epidemiological data.

Epidemiology

- **History of Epidemiology**
- **Concepts in Epidemiology**
- **Introduction to Descriptive and Analytical Epidemiology**
- **Quantitative Epidemiologic Methods**
- Epidemiology of outbreaks / investigations
- Epidemiologic Surveillance
- Epidemiological studies
- Qualities of epidemiological tests
- Outcome measurement in health care
- Sensitivity and specificity
- Introduction to Geographic Information Systems
- Health mapping
- Disease mapping
- Record linkage
- Biomarkers
- Registries

Bio-statistics

- **Research methodology**
- **Survey methodology**
- **Designing a research study**
- **Preparation of research protocol**
- **Determining sample size**
- **Research methods in social and behavioural sciences**

- **Sampling method**
 - **Sampling and different types of sampling technique**
 - Introduction to Biostatistics
 - Basic concepts of statistical reasoning, data description, descriptive statistics, probability concepts
 - Tests of significance
 - Estimation, confidence intervals, hypothesis testing, different tests of significance and the situation of their application – concept of standard error, chi-square, Z test, T test, correlation coefficient, linear regression, analysis of variance procedures, nonparametric methods, multivariate techniques, survival analysis and operational research – health service research.
 - Introduction to statistical computing
 - Introduction to statistical packages
 - Computer skills
- Communicable and Non-communicable diseases**
- **Concepts – epidemiology, prevention & control**

Environmental Health

- **Principles of Environmental Health and Human Ecology**
- **Environment health risks and their impact**
- **Environmental pollution**
- **Waste disposal**
- Housing sanitation and standards
- Environmental Policy Programmes and Legislations
- Medical Entomology including vector and rodent control
- Current and emerging issues in environmental health

Occupational Health

- **Health problems and their prevention and control**
- **Legislation related to health, safety and welfare of workers**
- Organisation and administration of occupational health services,
- Industrial hygiene
- Recent advances

Medical Sociology & Psychosocial issues

- **Cultural, socio economic and psychological determinants and their impact on health**
- Knowledge, attitude and practice related to public health problems
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- Impact of urbanization on health
- Doctor-patient relationship and hospital sociology
- Changes in lifestyle and health
- Common mental health issues and prevention

U15MDCM02 Paper - II Reproduction and Child Health Including Public Health Nutrition

CO1: Ability to identify and manage reproductive and child health issues.

CO2: Knowledge of demography and the ability to apply the same in population studies.

CO3: Awareness of gender related issues and women empowerment in the community and its applications.

CO4: Competency to effectively implement school health programmes.

CO5: Ability to manage the nutritional problems in the community.

Reproduction and Child Health Issues including Public Health Nutrition

- **Reproduction and child health issues – relevance**
- **Policy and Programmes in Reproductive Child Health**
- **Reproductive Child Health package and interventions**
- **Women empowerment and gender related issues**
- Newer initiatives in Reproductive Child Health
- Steps to reduce anemia in adolescent girls
- Management of reproduction including sterility and birth regulation
- MTP, prenatal determination of sex
- School health
- Adolescent health
- Health education classes
- Health problems, services and programmes for the priority groups – Geriatrics, Tribal
- Minority support groups
- Diet and life style issues

Public Health Nutrition

- **Nutritional problems of the country; Role of nutrition in Health and Disease.**
- **Common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions.**
- **Nutritional assessment of individual, families and the community by selecting and using appropriate methods such as : anthropometry, clinical, dietary, laboratory techniques**
- **Compare recommended allowances of individual and families with actual intake.**
- Plan and recommend a suitable diet for the individuals and families bearing in mind local availability of foods, economic status and therapeutic diets.
- Common nutritional disorders: protein energy malnutrition
- National Nutritional Policy
- National programmes in nutrition and their evaluation
- Food hygiene, food adulteration, legislation to control adulteration

U15MDCM03 Paper - III Primary Health Care and Health System Management

CO1: The competency to plan and implement primary health care delivery for the community.

CO2: The ability to implement health promotion strategies.

CO3: The ability to provide comprehensive - promotive, preventive, curative and rehabilitative health services.

CO4: The ability to monitor and evaluate health programmes in the community.

CO5: The ability to apply the principles of management in health care delivery systems.

Primary Health Care and Health System Management

- **Rural sanitation**
- **Health legislations**
- **Health care system in India**
- **Health care delivery system in developed countries**
- **Socialized medicine**
- **Health insurance**
- **Urban Health Services in India**
- Primary Health Care Initiative
- Health Promotion Initiatives
- Programme evaluation
- Cost benefit and cost effectiveness
- Quality of health care
- Health care versus medical care
- Role of NGOs in health care of the community
- Spiraling cost of medical care
- Public Health Program Planning and Evaluation
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- Medical Anthropology
- Health and Public Health Law
- Health Economics
- Finance for Health Management
- Health Information Systems
- Management of an outbreak
- Technology assessment and economic evaluation of health programmes
- Health Care Management System
- Principles of inspection and supervision
- Promotion of vaccination according to the national schedule in pediatric age group
- Modern concepts in health care management
- Total quality management
- Health care marketing
- Leadership in public health
- Community Based public health programmes
- Public health funding
- Management information systems
- Cost analysis and Cost effectiveness
- National Health Policy
- Health Planning in India
- Waste management
- National Rural Health Mission and National Urban Health Mission
- National Health Program
- Rural development
- Five year plans

Health Education (Information, Education, Communication)

- **Effective communication with individuals, family and community using tools and techniques of information, education, communication.**
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- Methods of health education with their advantages and disadvantages
- Use of appropriate media (simple audiovisual aids) for effective health education

U15MDCM04 Paper - IV Global Health Initiative and Health Technology

CO1: The competency to prepare and implement health care in disasters.

CO2: The ability to give inputs in formulation and implementation of public health laws.

CO3: The ability to apply the principles of epidemiology in health policy development.

CO4: The ability to apply the principles of to effectively deal with cross border health challenges.

CO5: The competency to use technology in providing healthcare to populations including hard to reach communities.

Global Health Initiative and Health Technology

- **Emerging health issues of national and international concern**
- **Disaster management**
- **Social and behavioral aspects of global health**
- **Ethical issues in public health**
- **Health policy and politics**
- **Behavioral and social aspects of public health**
- Epidemiology of bioterrorism / catastrophic events
- Health promotion in Multicultural populations
- Public health laws – national and international
- International health organizations
- World health organization
- Public health issues facing developing countries
- Concept of global health and global community
- Remote sensing, GIS and other new technologies

U15MDCM05 Soft Skills (Elective Course)

CO1: Ability to use Computers for Teaching and Research purposes.

CO2: Ability to work as a member of a team.

CO3: Competency to communicate with a large group of people in a community setting.

CO4: Teaching skills.

CO5: Ability to work as the leader of a healthcare team.

MD – (Community Medicine) Degree Examination

Paper I: Epidemiology including Biostatistics, Concepts of Communicable Diseases and Non communicable Diseases, Environmental health and Medical sociology

Instruction :Answer all questions

Time :3 hrs

Max marks –100

1. Discuss the strategies for Polio eradication in the country. Critically evaluate the implementation of the programme (20 marks)

2. **Comment on :** (4 x 10 = 40 marks)

- a. Disease Registries
- b. Community Diagnosis
- c. Nested case control study
- d. Total sanitation campaign

3. **Write briefly on:** (4 x 10 = 40 marks)

- a. Social marketing
- b. Latent infection
- c. Non parametric methods in statistics
- d. TB control – a shared responsibility

Paper II : Reproduction and Child Health including Public Health Nutrition

Instruction :Answer all questions

Time :3 hrs

Max marks –100

1. Discuss the components of the Reproductive and Child Health Package in RCH – II.

Give and brief account of IMNCI strategy under RCH II (20 marks)

2. **Comment on:** (4 x 10 = 40 marks)

- a. Need for diet modification in life style diseases
- b. Relevance of Geriatric Care in health service system
- c. Rationale of supplementary Nutrition Programmes
- d. Prenatal Sex Determination

3. **Write briefly on:** (4 x 10 = 40 marks)

- a. Community Need Assessment Approach
- b. Newer contraceptives
- c. Salient features of Urban Health Mission
- d. Public Health importance of Iodine Deficiency Disorder

MD – (Community Medicine) Degree Examination

Paper III: Primary Health Care & Health System Management

Instruction :Answer all questions

Time :3 hrs

Max marks –100

1. Discuss the origin and concept of Social Security. Critically evaluate the implementation of Social Security Legislations in India (20 marks)

2. **Comment on:** (4 x 10 = 40 marks)

- a. Current Infant Immunization Schedule
- b. Financing in health system
- c. Mass Drug Administration Strategy
- d. Role of intersectoral co-ordination in Health

3. **Write briefly on:** (4 x 10 = 40 marks)

- a. Evaluation of quality of health care
- b. Health Survey and Development Committee report
- c. Education Vs Legislation in Public Health
- d. Socialized Medicine

MD – (Community Medicine) Degree Examination

Paper IV: Global Health Initiative and Health Technology

Instruction :Answer all questions

Time :3 hrs

Max marks –100

1. Give an account of the emerging health issues. Discuss their impact on the health system and outline the strategies for the control of these issues.

(20 marks)

2. **Comment on:**

(4 x10 =40marks)

- a. Ethical issues in Public Health
- b. Epidemiological transition
- c. Bio-terrorism
- d. Tobacco free initiative

3. **Write briefly on:**

(4 x10 =40marks)

- a. BCC strategies
- b. Remote sensing technology
- c. Health tourism and its impact on public health
- d. AIDS vaccine

Journals

1. Lancet
2. Indian Journal of Community Medicine
3. Indian Journal of Public Health
4. American Journal of Public Health
5. British Medical Journal
6. WHO Bulletin
7. WHO TRS

8. Indian Journal of Medical Research
9. Journal of Clinical Epidemiology
10. Journal of Communicable Diseases
11. Journal of Clinical Nutrition
12. Indian Journal of Paediatrics
13. World Health Forum

Text Books

Sl No:	Author / Editor	Title of the books	Edition	Publishers
1	Mancy & Rosenau	Public Health & Preventive Medicine	12 th	Appleton- Century Crafts or Oxford University Press
2	Walter W Holland	The Oxford Text Book of Public Health Voll,II,III,IV	1985 Edn	Oxford University Press Walton St.Oxford 8x2, 6 D.D.U.K
3	Hanlon & Pickett	Public Health Administration & Practice	1983 Edn	B.T. Publication Pvt. Ltd
4	Garrow & James	Human Nutrition & Dietetics		
5	Hobson	The theory & practice of public health		
6	DJP Barker, G. Rose	Epidemiology in Medical Practice		
7	Wilcocks & Mansion Bahn	Manson's Tropical Disease		
8	Bradford Hill	Text book of Biostatistics		
9	Topley Wilson	Microbiology of microbial infections		

10	Panicker	Text book of Micorbiology		
11	Leavell H.R & Clark. E. G	Preventive Medicine	1965 (latest edn)	Ms.graw Hill, New york
12	Last John. M	Dictionary of Epidemiology	1995	Oxford University Press
13	Susser M.W & Watson.W	Sociology in Medicine	1971 (latest edn)	Oxford University Press
14	Mausner.J.S & Kramer.S	Mausner and Bahn: Epidemiology – An introductory text	1985 latest edn	Saunders
15	Mac Mohan .B & Pugh	Epidemiology – principles and methods		Boston: Little, Brown
16	Anderson & Langton	Health Principles and Practice	1961	C.V. Mosley
17	Hunter	Hunter’s Disease of Occupational health		
18	Park	Tex book of Preventive and Social Medicine	18 th edition	
19	Chatterjee. K. D	Human parasites and parasitic disease		
20	Swaminathan M	Human Nutrition &Diet		

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