

COMMUNITY MEDICINE

LEARNING OBJECTIVES:

At the end of the course, the learner shall be :

1. Aware of the physical, social, psychological, economic, and environmental health determinants of health and disease.
2. Able to think epidemiologically, diagnose totally, treat comprehensively and be able to function as community and first contact physician.
3. Able to apply the clinical skills to recognize and manage common health problems including their physical, emotional and social aspects at the individual, family and community levels and deal with public health emergencies.
4. Able to identify, prioritize and manage the health problems of the community after making community diagnosis.
5. Able to perform as an effective leader of health team at primary care level.

To achieve this, the learner should:

- a. Inculcate values like compassion, empathy to poor, rational and ethical practice, to ensure quality professional practice.
- b. Understand the principles of prevention and control of communicable and non-communicable diseases.
- c. Participate actively in epidemiological studies to identify and prioritize health problems of the community. Collect data, analyze, interpret, and apply relevant statistical tests, to make a report.
- d. Participate actively in health care service for special groups like mothers, infants, under five children, school children, adolescents and elderly of rural, tribal and urban slum dwellers.
- e. Participate actively in investigation of outbreaks/epidemics of various diseases and other public health emergencies.
- f. Participate actively in implementation of National Health Programmes.
- g. Learn and practice principles of behavioural change communication, supervision, leadership, resource management, health information management, community participation and coordination, administrative functions etc.
- h. Continuously upgrade his knowledge, attitude and skills in the subject.

These objectives would be with reference to knowledge, attitude and skills.

COURSE CONTENTS

I. CONCEPTS OF HEALTH AND DISEASE

		Must know	Desirable to know
1.	Definition and concepts of Public Health.	✓	
2.	Definition of health, holistic concepts of health including concept of spiritual health, appreciation of health as a relative concept, determinants of health.	✓	
3.	Characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease.	✓	
4.	Understanding the natural history of disease and application of interventions at various levels of prevention.	✓	
5.	Introduction to various health indicators.	✓	
6.	Health profile of India.	✓	

II. SOCIAL AND BEHAVIOURAL SCIENCES

1.	Clinico-socio-cultural and demographic evaluation of the individual, family and community.	✓	
2.	Assessment of barriers to good health and health seeking behaviour.	✓	
3.	Role of family in health and disease	✓	
4.	Doctor-patient relationship.	✓	
5.	Socio-cultural factors related to health and disease in the context of urban and rural societies.	✓	
6.	Impact of urbanization on health and disease.	✓	
7.	Social psychology, Community behaviour and community relationship, Hospital psychology		✓

III. ENVIRONMENT AND HEALTH

1.	Water: Concepts of safe and wholesome water, sanitary sources of water, waterborne diseases, water purification processes, water quality standards.	✓	
2.	Health hazards of air, water, noise, radiation pollution.	✓	
3.	Physical and chemical standards of drinking water quality and tests for assessing bacteriological quality of water.		✓
4.	Concepts of water conservation and rainwater harvesting.		✓
5.	Concepts of solid waste and human excreta and sewage disposal.	✓	
6.	Awareness of standards of housing and the effect of housing on health.	✓	

7.	Role of vectors in the causation of diseases.	✓	
8.	Identifying features of vectors and their control measures.	✓	
9.	Life cycles of vectors and advantages and limitations of various vector control measures.		✓
10.	Mode of action, application cycle of commonly used insecticides and rodenticides.		✓

IV. HEALTH PROMOTION AND EDUCATION

a.	Understand the concepts of Health promotion and Education, IEC, Behavioural change communication	✓	
b.	Principles & methods of health promotion and education.	✓	
c.	Barriers to effective communication and methods to overcome them.		
d.	Various methods of health education with their advantages and limitations.	✓	
e.	Organizing health promotion and education activities at individual, family and community settings.	✓	
f.	Evaluation of health promotion and education programme.		✓

V. NUTRITION

1.	Common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions.	✓	
2.	Nutritional assessment of individual, families and the community by using appropriate method such as: anthropometrics, clinical examination etc.	✓	
3.	Plan and recommend a suitable diet for the individuals and families as per local availability of foods and economic status, etc.	✓	
4.	Common nutrition related health disorders (like protein energy malnutrition, vitamin A deficiency anemia, iodine deficiency, fluorosis, food toxin diseases) and their control and management.	✓	
5.	Food fortification, additives and adulteration, food hygiene	✓	
6.	Social and cultural factors in nutrition and health	✓	
7.	Important National Nutritional Programmes.	✓	
8.	National Nutrition policy		✓
9.	Nutritional surveillance, education and rehabilitation.		✓

VI. OCCUPATIONAL HEALTH

1.	Relate the history of symptoms with specific occupations including agricultural related occupation.	✓	
2.	Employees state insurance scheme.	✓	
3.	Specific occupational health hazards, their risk factors and its preventive measures.	✓	
4.	Concepts of ergonomics	✓	
5.	Diagnostic criteria of various occupational related diseases.		✓
6.	Legislations related to occupational health.		✓

VII. BIO-STATISTICS

a.	Collection, classification, analysis, interpretation and presentation of statistical data.	✓	
b.	Application of statistical methods in various study designs.	✓	
c.	Common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion.	✓	
d.	Applying tests of significance in various study designs	✓	
e.	Use of life tables.	✓	

VIII. BASIC EPIDEMIOLOGY

1.	Epidemiology: definition, concepts, uses and its role in health and disease.	✓	
2.	Use of basic epidemiological tools to make a community diagnosis of the health situation, in orders to formulate appropriate intervention measures.	✓	
3.	Definition of the terms used in describing disease transmission and control.	✓	
4.	Modes of transmission and measures for prevention and control of communicable and non-communicable diseases.	✓	
5.	General principles of prevention and control of communicable, non communicable diseases and other health conditions of public health importance.	✓	
6.	Principal sources of epidemiological data.	✓	
7.	Definition, calculation and interpretation of morbidity and mortality indicators	✓	
8.	Need, uses and evaluation of screening tests.	✓	
9.	Investigation of an epidemic of communicable disease and to understand the principals of control measures.	✓	
10.	Epidemiological study designs,	✓	
11.	Concept of association, causation and biases.	✓	
12.	Application of computers in epidemiology.	✓	

IX. EPIDEMIOLOGY OF SPECIFIC DISEASES: COMMUNICABLE & NON-COMMUNICABLE

Communicable and non-communicable diseases of public health importance, relevant to the region, for which National Disease Control/ Eradication Programmes have been formulated.

Communicable Diseases:

Intestinal infections: Poliomyelitis, viral hepatitis, Diarrhoea, Cholera, Helminthiasis.

Respiratory infections: Acute Respiratory infections, measles, Diphtheria, Whooping cough, Tuberculosis.

Vector - borne infections: Malaria, Filaria, Kala Azar, Dengue.

Surface Infections: Sexually Transmitted Diseases, HIV & AIDS, Tetanus, Leprosy, Scabies, and Pediculosis.

Zoonosis: Rabies, Japanese encephalitis, Plague, Kyasanur Forest Disease

Non-communicable and lifestyle diseases:

Coronary heart disease, Hypertension, Rheumatic heart disease, Cancers, Obesity, Diabetes, Blindness, Injury and Accidents.

New emerging diseases:

1.	Extent of problem, epidemiology and natural history of disease	✓	
2.	Public health importance of particular disease in local area	✓	
3.	Influence of social, cultural and ecological factors on the epidemiology of particular disease.	✓	
4..	Diagnosing disease by clinical methods, using essential laboratory techniques at primary care level.	✓	
5..	Treatment of a case, as per National Programme guidelines, and also follow up of case.	✓	
6.	National Health Programme for particular disease.	✓	
7.	Understand the principles of measures to control a disease epidemic.	✓	
8.	Principles of planning, implementing and evaluating control measures for disease at community level bearing in mind the public health importance of the disease.		✓
9.	Training of health workers in disease surveillance, control and treatment, health education		✓
10.	Management information system in particular disease.		✓
11.	New emerging diseases and health related problems		✓

X. DEMOGRAPHY AND VITAL STATISTICS

1.	Concepts of Demography, Demographic cycle, Vital statistics.	✓	
2.	Definition, calculation and interpretation of demographic indices like birth rate, death rate, fertility rates.	✓	

3.	Declining sex ratio and its social implication.	✓	
4.	Population explosion, population dynamics of India.	✓	
5.	Population control measures.	✓	
6.	National Population Policy.	✓	
7.	Sources of vital statistics like census, SRS, NFHS, NSSO etc	✓	

XI. REPRODUCTIVE AND CHILD HEALTH

1.	Current status of Reproductive and Child Health.	✓	
2.	Screening of high risk groups and common health problems.		
3.	Local customs and practices during pregnancy, childbirth and lactation, child feeding practices.	✓	
4.	Reproductive child health (RCH) components, including child survival and safe motherhood, Universal Immunization Programme, Integrated Child Development Services Scheme (ICDS), Integrated Management of Neonatal and Childhood Illness (IMNCI) and other existing Programmes.	✓	
5.	Organization, implementation and evaluation of reproductive and child health program components.		✓
6.	Various family planning methods, their advantages and shortcomings.	✓	
7.	Medical Termination of Pregnancy and Act (MTP Act).	✓	
8.	Adolescent health.	✓	
9.	Handicapped child.	✓	
10.	Gender issues and Women empowerment		✓
11.	Organizations, technical and operational aspects of the National Family Welfare Programme.		✓

XII. SCHOOL HEALTH

1.	Objectives and components of School Health Programme.	✓	
2.	Activities of the programme :	✓	
a.	Periodic medical examination of the children and the teachers.	✓	
b.	Immunization of the children in the school.	✓	
c.	Health promotion and education.	✓	
d.	Mid-day meals.	✓	

XIII. URBAN HEALTH

1.	Common health problems (Medical, Social, Environmental, Economical, Psychological) of urban slum dwellers.	✓	
2.	Organization of health services for and in urban slums.	✓	
3.	National policy on urban health		✓

XIV. HEALTH CARE SYSTEM IN INDIA

1.	Concepts of Primary Health Care and Comprehensive Health Care.	✓	
2.	Health profile of India	✓	
3.	Health care Delivery System in India and infrastructure at peripheral, primary, secondary and tertiary care level	✓	
4.	Job responsibilities of different category of workers in health system		✓
5.	Voluntary Health agencies working in India		✓

XV. HEALTH PLANNING, MANAGEMENT AND ADMINISTRATION

1.	Concepts of Planning, Management, Public Health Administration.	✓	
2.	Components of planning a health activity.		
3.	Classification and understanding of various Qualitative and Quantitative Health Management techniques.	✓	
4.	Overview of administration at village, block, district, state and central level in India	✓	
5.	Integrated Disease Surveillance Project (IDSP)	✓	
6.	Health related Millennium Development Goals	✓	
7.	National Health Policy & National Rural Health Mission (NRHM)	✓	
8.	Concepts of Health Economics in health planning and management.		✓
9.	Concepts, scope and methods of Health Audit.		✓
10.	Role of Planning Commission and five year plans in development of health sector in India		✓
11.	Various health committees of Government of India and their important recommendations.		✓

XVI. DISASTER MANAGEMENT

Principles of disaster preparedness and application of these in disaster management	✓	
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XVII. PUBLIC HEALTH LEGISLATIONS

1.	Birth and Death registration act, PFA act, MTP act, CPA, Childlabor act, prenatal diagnostic act, Human organ transplaantation act	✓	
2.	Other public health legislations		✓

XVIII INTERNATIONAL HEALTH

1.	Role of various multilateral, bilateral international health organizations like WHO, UNICEF etc.	✓	
2.	Organizational structure of these organizations		✓
3.	International Health Regulation (IHR)		✓

XIX. BIO-MEDICAL WASTE AND ITS DISPOSAL

1.	Classification/ Category, sources, health hazards and treatment of Bio-Medical Waste	✓	
2.	Application of these principles in different setting of health care delivery system		✓

XX. HEALTH CARE OF ELDERLY

1.	Size of elderly population, their common health problems and justification of their special care	✓	
2.	Screening procedures for early detection of various diseases and disabilities of elderly.		✓
3.	Comprehensive health care aspects of elderly		✓
4.	National policy for care of elderly		✓

XXI. MENTAL HEALTH

1.	Importance of mental health care in primary care settings.		✓
2.	Comprehensive mental health care at primary care settings.		✓

SKILLS

SKILLS:	Able to do Independently	Able to perform under guidance	Assist	Observe
General Skills. The student should be able to:				
1. Elicit Clinico-social history. Describe agent, host and environmental factors determining health and disease.	✓			
2. Identify, prioritize and manage common health problems of community.	✓			
3. Apply elementary principles of epidemiology in carrying out simple epidemiological studies.	✓			
4. Work as a team member in rendering health care.	✓			

<ul style="list-style-type: none"> • Use of proper screening methods in early diagnosis of certain diseases, applicable at primary care level. • Able to detect outbreak in early stage, spot mapping, investigation of outbreak, notification of notifiable diseases. • Surveillance skills development, calculating various health indicators and their interpretations. 	✓		✓	
5. Reproductive and Child Health:				
<ul style="list-style-type: none"> • Antenatal- examination of women, application of at-risk approach in antenatal care. • Intranatal care- conducting a normal delivery, referral indications. • Postnatal- assessment of newborn and mother, promotion of breast feeding, advice on weaning and on family planning. • Immunization- able to immunize the eligible using desired routes, for providing vaccines. • Contraception- able to advice appropriate contraceptive method. • Able to insert any Intra Uterine Device (IUD) 	✓	✓		
6. Statistics:				
<ul style="list-style-type: none"> • Able to draw sample using simple sampling techniques. • Apply appropriate test of significance. • Calculation of various health indicators and presentation of data. 	✓	✓		
7. Nutrition:				
<ul style="list-style-type: none"> • Conduct complete nutritional assessment of individual using clinical, anthropometric and diet survey tools. • Ability to use and interpret road to health card. • Advice appropriate balance diet and suggest any dietary modification • Nutritional promotion and education to specific groups and related to specific nutritional diseases. 	✓			
8. Occupation Health:				
<ul style="list-style-type: none"> • Screening of workers for any occupation related health problem. 			✓	
9. Managerial skills:				
<ul style="list-style-type: none"> • Able to make community diagnosis and take 	✓			

	remedial measure for improving health of community.				
	• Organize antenatal, under five clinics, health education camps.		✓		
	• Ability to manage Health Management Information System, including maintenance of health records at primary care level.			✓	
	• Able to show effective leadership, supervision skill not only at primary care level but also in inter-sectoral coordination.	✓			
	• Ability to manage money, material and manpower at primary care level.			✓	
	• Ability to do cost benefit and cost effective analysis as per primary care needs.			✓	
	• Community participation and cooperation skills	✓			
10.	Basic Laboratory investigation at primary care level				
	• Hemoglobin estimation	✓			
	• Urine examination for normal and abnormal constituents.	✓			
	• Thick and thin blood smear for malaria parasite examination	✓			
	• Peripheral smear for type of anemia	✓			
	• Acid fast staining	✓			
	• Hanging drop examination of stool sample.	✓			
	• Estimation of Chlorine demand and Residual chlorine.	✓			
	• Identification of life cycle stages of various insects of public health importance	✓			
11.	Minor surgical procedures at primary care level				
	• All types of injection techniques	✓			
	• Common wound dressings	✓			
	• Incision and drainage of abscess under local anaesthesia	✓			
	• Stitching of clean lacerated wounds	✓			
12.	First Aid, initiation of emergency care and referral	✓			
13.	Transportation of injured and seriously ill patient from community.	✓			

FIELD VISITS FOR UNDERGRADUATE MEDICAL STUDENTS:

1. Sub centre, Primary Health Center and Community Health Center/ District Hospital
2. Anganwadi Centre
3. Water and sewage treatment plant
4. Industry visit
5. Family Health Advisory Services*
6. Clinico-Social case review*
7. Infectious Disease Hospital
8. DOTS Center
9. Malaria Clinic
10. School Health.

* Family and hospital visits are for development of various skills in community and hospital settings

METHOD OF ASSESSMENT:

Modified essay question, Short answer questions, MCQs, Problem solving exercises, OSCE, OSPE, Epidemiological Exercise, Records Review, Checklist, Research Project reports and Oral Viva Voce

TEACHING LEARNING METHODS:

Structured interactive sessions, Small group discussion, Focused group discussion (FGD), Participatory learning appraisal (PLA), Family and community visits, Institutional visits, Practical including demonstrations, Problem based exercises, Video clips, Written case scenario, Self learning tools, Interactive learning and e-modules

TIME OF EVALUATION:

Examination of Community Medicine should be at the end of 7th semester and formative and summative assessment during internship so that we have a basic doctor competent to provide primary care.

LEARNING RESOURCE MATERIALS

Text books, Reference books, Practical note books, Internet resources, Video films etc.

SUGGESTED TOPICS FOR LEARNING THROUGH E-MODULES

1. History of Medicine and Public Health
2. Environmental health
3. Nutrition (Except public health nutritional program)
4. Epidemiological methods
5. Screening
6. Planning cycle
7. Health Management techniques
8. Entomology
9. Biostatistics
10. Demography
11. Disaster management
12. Bio-medical waste management
13. International health
14. National health organizations

TOPICS FOR INTEGRATED TEACHING WITH DEPARTMENT OF COMMUNITY MEDICINE AS PARTICIPANT

1. Nutrition
2. Iron deficiency anemia
3. Communicable diseases with National Health programme like
 - a. HIV/AIDS
 - b. Tuberculosis
 - c. Malaria
 - d. Polio
 - e. Diarrhoeal diseases
 - f. Leprosy
 - g. Zoonotic diseases
4. Lifestyle related diseases with preventive aspects like
 - a. Diabetes
 - b. Hypertension
 - c. Stroke
 - d. Obesity
 - e. Cancers
5. Jaundice
6. Alcoholism
7. Death and Dying
8. Geriatric medicine
9. Adolescent Health
10. Rational drug use
11. Contraception
12. Industrial health
13. Ethical issues

RECOMMENDED BOOKS IN COMMUNITY MEDICINE:

1. Textbook of Preventive and Social Medicine by K Park 19th edition
2. Textbook of Preventive and Social Medicine by Gupta & Ghai
3. Textbook of Preventive and Social Medicine by Gupta & Mahajan
4. Essentials of Community Medicine by Suresh Chandra
5. Introduction to Biostatistics by Sathya Swaroop
6. National Health Programme by Jugal Kishore
7. National Health Programme by D K Taneja