GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)
(Deemed to be University)
VISAKHAPATNAM * HYDERABAD * BENGALURU

Accredited by NAAC with A^+ Grade

REGULATIONS AND SYLLABUS

OF

MD Community Medicine

w.e.f. 2021-22 admitted batch)

POSTGRADUATE TRAINING PROGRAMME FOR

MD IN COMMUNITY MEDICINE - PMEDI08

(w. e. f. 2021-22 Admitted Batch)

Preamble

The purpose of PG education is to create specialists who would provide high quality health care and advance the cause of science through research & training. Community Medicine is an academic subject, a branch of Medicine which deals with promotion of health and prevention of diseases, involving people's participation, utilizing professional management skills. The Community Medicine specialist, will inculcate a holistic view of health and medical interventions primarily focused on Community Health/Population Health. Thus, he/she should be equipped with the knowledge, skills, competencies in primary, secondary & tertiary care, control and prevention of outbreaks/epidemics, community diagnosis, health needs assessment, epidemiological assessment, research and planning evidence-based health policies and programmes.

The Guidelines for teaching Community Medicine, therefore, should be designed to create a cadre of professionals who are competent to meaningfully contribute their expertise in planning, implementation, co-ordination, monitoring, evaluation of Primary Health Care Programs based on scientific evidence. The competencies must cover a wide spectrum of skills viz., technical, managerial, administrative, organizational skills, applied skills in Health Information Management, software application and soft skills of communication, motivation, decision-making, team building, training in scientific communication and medical writing.

The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. This document was prepared by various subject content specialists. The Reconciliation Board of the Academic Committee has attempted to render uniformity without compromise to purpose and content of the document. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of "domains of learning" under the heading "competencies".

Eligibility Criteria for admission to MD/MS Courses

The eligibility criteria for admission to MD/MS Courses is as follows:

- Candidates in possession of MBBS degree or Provisional MBBS Pass Certificate recognized as per the provisions of the NMC Act, 2019 and the repealed Indian

Medical Council Act 1956 and possessing permanent or provisional registration certificate of MBBS qualification issued by the NMC / the erstwhile Medical Council of India or State Medical Council and have completed one year of internship or are likely to complete the internship as per NMC criteria, may apply for NEET-PG through online application system.

- The dates indicated by candidates with regard to 12 months Compulsory Rotating Resident Internship in the application form (i.e. internship starting and completion date) shall be treated as final and candidates will be required to submit the original Compulsory Rotating Resident Internship completion certificate at the time of counseling/admission in allotted Medical College/ Institute.
- The cut off dates for the recognition of the Medical Colleges, from where the candidates have passed their MBBS Degree Course and completed compulsory rotatory Internship for the year will be as prescribed by the NMC/ the erstwhile Medical Council of India. The Colleges recognized after the cut- off date prescribed by the NMC will not be considered.
- Registration with the NMC/ the erstwhile Medical Council of India or State Medical Council is necessary and its documentary proof should be furnished by the candidates on the day of examination and at the time of counseling/admission.
- The definition of NRI for admission to Deemed University shall be as per Hon'ble Supreme Court order dated 22/08/2017 in WP 689/2017.

ELIGIBILITY CRITERIA FOR FOREIGN MEDICAL GRADUATES:

Indian citizens or overseas citizens of India who have obtained their Primary Medical Qualifications from Medical Colleges outside India should have qualified the Foreign Medical Graduate Examination (Screening Test) as per Screening Test Regulations, 2002 which is conducted by National Board of Examinations. Further, they should have been registered with the NMC/ the erstwhile Medical Council of India or State Medical Council and should have completed their internship or likely to complete their internship as per NMC criteria. Foreign Medical Graduates are required to bring their FMGE Pass certificate issued by NBE on their testing day along with the provisional/permanent registration certificate issued by a medical council.

ELIGIBILITY CRITERIA FOR FOREIGN NATIONALS:

It is not mandatory for foreign nationals to have temporary registration with National Medical Commission (NMC) at the time of writing NEET-PG. Foreign Nationals can write NEET-PG without registration with NMC. The NMC may, on payment of the prescribed fee for registration, grant temporary registration for the duration of the Post Graduate course limited to the medical college/institution to which he/she is admitted for the time being exclusively for pursuing postgraduate studies. Provided further that temporary registration to such foreign national shall be subject to the condition that such person is duly registered with appropriate registering authority in his own country where from he has obtained his Basic Medical qualification, and is duly recognized by the corresponding Medical Council or concerned authority.

PROGRAMME EDUCATIONAL OBJECTIVES

1. To create a skilled cadre of medical professionals having expertise in application of principles of Public Health, Community Medicine and applied epidemiology, contributing meaningfully in formulating National Health Policies & Programmes with a systems approach for overall human development.

2. To standardize the teaching & training approaches at post- graduate level, for Community Medicine

3. Research: To formulate research questions, do literature search, conduct study with an appropriate study design and study tool; conduct data collection and management, data analysis and report.

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)

1. To acquire knowledge about communicable and non-communicable diseases, emerging and reemerging diseases, their epidemiology, control and prevention
2. To develop workable interventions for control and prevention of emerging and re-emerging diseases at local, national and global level.
3. To describe nutritional problems of the country, role of nutrition in health and disease and to describe common nutritional disorders
4. To describe the concept of Environmental Health and its various determinants.

5. To diagnose occupational hazards and undertake surveys to identify occupational exposures as and when necessary.
6. To evaluate cost effectiveness and cost benefits of a Health Program
7. To conduct community surveys for assessment of health & morbidity profile, epidemiological determinants, assessment of health needs, disease surveillance, evaluation of health programmes and community diagnosis
8. To conduct epidemic investigation, preparation of reports, planning and implementation of control measures
9. To do data collection, compilation, tabular and graphical presentation, analysis and interpretation, applying appropriate statistical tests using computer-based software
10. To develop appropriate IEC Material, assessment of community communication needs, training skills, counseling skills, conduct Health Education Programmes in urban and rural settings

PROGRAMME SPECIFIC COMPETENCIES:

At the end of the course the student should be able to acquire the following competencies under the three domains, Cognitive, Affective and Psychomotor:

A. Cognitive domain (The student should be able to:)

1. Describe conceptual (and applied) understanding of Public Health, Community Medicine, clinical and disease-oriented approach, preventive approach & health promotion, disease control & promotion.

2. Have knowledge about communicable and non-communicable diseases, emerging and reemerging diseases, their epidemiology, control and prevention.

3. Apply the principles of epidemiology, health research and Bio-statistics, application of qualitative research methods

4. Calculate Odds Ratio, Relative Risk, Attributable risk and other relevant health and morbidity indicators.

5. To describe nutritional problems of the country, role of nutrition in health and disease and to describe common nutritional disorders

6. Develop nutrition plan for an individual based on his requirements and with concerns to special situations if applicable

7. Plan comprehensive programme to address issue of malnutrition in a given area for a specific group

8. To describe the concept of Environmental Health and its various determinants.

9. Identify environmental health issues in a given area/community

10. Assess impact of adverse environmental conditions on health of human beings

11. Plan awareness programmes at various levels on environmental issues and mobilize community resources and participation to safeguard from local adverse environmental conditions 12. Should be able to provide technical advice for water purification, chlorination, installing gobar gas plant, construction of soakage pits etc.

13. Be a technical expert to advice on protection measures from adverse environmental exposure 14. To describe the working of Primary Health Care system, Panchayat Raj system, National Health Programmes, urban/rural differences, RCH, Demography and Family Welfare.

15. Do orientation of the inter-linkage of health sector and non-health sector for promotion of Health & control and prevention of diseases.

16. Have familiarity with administrative procedures and protocols

17. Have knowledge about role of media and its use in health.

18. Have knowledge of Health Care Administration, Health Management and Public Health Leadership

19. To describe Health Policy planning, Medical Education technology, Information Technology and integration of alternative Health system including AYUSH.

20. To describe the intricacies of Social & Behavioral sciences and their applications.

21. To describe Public Health Legislations

22. To understand and describe International Health & Global Diseases surveillance.

23. To relate the history of symptoms with specific occupation, diagnostic criteria, preventive measures, identification of various hazards in a specific occupational environment and legislations.

24. To keep abreast of recent advances in Public Health & formulate feasible, optimal, sustainable, cost effective strategies in response to the advances in public health & development.

25. To describe the principles of Health Economics and apply it in various public health settings.

26. To explain and correlate common health problems (medical, social, environmental, economic, psychological) of urban slum dwellers, organization of health services in urban slum areas

27. Develop workable interventions for control and prevention of emerging and re-emerging diseases at local, national and global level.

28. Identify behavior pattern of individual or group of individuals detrimental or adversely affecting their health

29. Define and identify vulnerable, under-privileged high risk communities and their special needs

30. To create awareness about various public health laws

31. Evaluate cost effectiveness and cost benefits of a Health Program

32. Understand and express implications of ‘Poverty Line’, ‘Social Inclusion’, ‘Equity’, ‘taxations’, ‘Insurance’ on Health care management.

33. To categorize hospital waste and be able to guide for proper disposal.

34. To provide a comprehensive plan for disaster management and mitigation of sufferings.

B. Affective domain:

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.

2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.

3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

C. Psychomotor domain: ((The student should be able to:)

The student should be able to perform independently the following:

- Conduct community surveys for assessment of health & morbidity profile, epidemiological determinants, assessment of health needs, disease surveillance, evaluation of health programmes and community diagnosis
- Conduct epidemic investigations, spot maps, predict disease trends, preparation of reports, planning and implementation of control measures
- Demonstrate clinical skills of preparing case history, examination, provisional diagnosis, treatment and clinical case management and interpretation of laboratory findings. Conduct common procedures such as incision, drainage, dressings & injections.
- Do data collection, compilation, tabular and graphical presentation, analysis and interpretation, applying appropriate statistical tests, using computer-based software application for validation of findings
- Conduct epidemiological research studies to establish cause-effect relationships in elaborating the epidemiology of diseases and health events

- Develop appropriate IEC Material, assessment of community communication needs, training skills, counseling skills, conduct Health Education Programmes in urban and rural settings

- Conduct dietary surveys, assessment of nutritional status, nutritive values of common food menus, detection of food adulterants, use of lactometer, recording and interpretation of growth and development charts.

- Use and apply various instruments and processes concerned with environmental health and biological waste management eg. waste collection, segregation and disposal as per protocols, needle-disposers, disinfection procedures. Also use of Dosi-meters, Kata / Globe Thermometer, Slings Psychrometer, Gobar Gas Plant, Soakage pit, Solar Energy, functioning of ILRs, Deep Freezers, Cold Boxes, Vaccine Carriers.

- identify different types of mosquitoes, detect vector breeding places and orientation of the methods of elimination of breeding places and placement of a mosquito-proof water tank.

- Conduct clinical screening of various diseases and organize community health camps involving community participation in urban and rural settings. Use of Snellen charts for vision, Ischiara's chart for colour blindness, tourniquet tests for dengue diagnosis in fever, BMI and other physical measurements of infants, children and adults etc., copper-T insertions and preparation of pap smear.

- Conduct tests for assessment of chlorine demand of water (Horrock's Apparatus), procedure of well-water and urban water-tank chlorination, assessment of chlorination levels, physical examination of water, methods domestic water purification, oriented in use of water filters.

- Prepare health project proposals with budgeting based on the project objectives.

Miscellaneous skills: (The student should be able to)

1. Devise appropriate health education messages for public health awareness using various health communications strategies.

2. Identify family level and community level interventions and facilitate the implementation of the same e.g. food hygiene, food storage, cooking demonstrations,

community kitchen, kitchen garden, empowerment of women for promoting nutritional health etc.

3. Demonstrate counselling skills for family planning services.

4. Plan and execute BCC strategy for individuals.

5. Conduct measurement of occupational exposure to harmful influences.

6. Diagnose occupational hazards and undertake surveys to identify occupational exposures as and when necessary.

7. Elicit appropriate response at individual and community level to prevent occupational hazards including IEC activities at different levels.

8. Use modern IT applications especially internet & internet-based applications.

CURRICULUM STRUCTURE:

Recommended schedule for three years training:

Orientation Training/Field postings

for students of MD Community Medicine

No	Field Posting and work	Duration
01	Posting at Sub-centers & PHCs Under & at RHTC and UHTC attached to Dept of Community Medicine as per MCI norm	Total period of ONE year during the 3 year period of PG course. Posting at RHTC should be residential.
02	Posting in the teaching hospital for exposure to clinical departments namely Pediatrics, OBGY & General medicine to acquire clinical skills for diagnosis and management of Communicable and NonCommunicable Diseases	Total - One month General Medicine-2 wks Pediatrics -1 wk Ob. & Gy. -1 wk Time of posting shall be at the discretion of local feasibility
	Work attachment to gain hands- on skills based, training in public health department & orientation in Health Administration and Management of various National Health Programmes and aspects of public health management at the offices of the DHO/DHS/THO/DTO/DMO/CDPO/MOH of Local Civic Body or district health authorities	Total - One month Place & time of 2 postings of 2 wks each shall be at discretion of local feasibility.
	Short duration posting in various camps, melas, public health emergencies, investigation of epidemics, implementation of NHP, linen dept of hospital, Hospital kitchen, Hospital record section, central drug store, Medical Supdt. Office, blood	Total - one month Minimum of four postings of 1wk duration each shall be done subject to local feasibility.

	bank, casualty dept., CCL, Hospital waste management, ART-VCTC, Matron Office (HRD), HMIS etc	
	Visits to various institutions of Public Health Importance	Subject to local feasibility

COURSE OBJECTIVES

- Conceptual (and applied) understanding of Public Health, Community Medicine, clinical disease-oriented approach, Preventive approach & Health promotion, disease control & promotion.
- Understand difference between data, information & intelligence, types of data, survey methods, formulating questionnaires, interview schedule, data presentation types & analysis.
- Enumerate the elements, principles, population coverage norms, staff patterns, day to day activities, programme schedule, stakeholders at PHC level.
- Understand functioning of public sector measures to safeguard environmental health e.g water purification plant
- Understand preventive and control measures against various occupational hazards – global, national and local level measures.

Learning objectives:

At the end of this course topic, the student should be able to:

i. Understand and explain the concept & application and give suitable analogies/examples related to Public Health/Community Medicine (with differences), Disease-oriented v/s Preventive approach, health promotion disease control & prevention.

ii. Explain correlation between health and human development with analogies/ examples.

iii. Explain concept of Primordial, Primary, Secondary and Tertiary prevention with examples.

iv. Evolutionary History and mile-stones in Public Health – National and International levels.

2. **Communicable and Non-Communicable diseases, emerging and re-emerging diseases**

Learning objectives:

At the end of this course, the student should be able to:-

i. Understand and explain Epidemiology of Communicable/Non-communicable diseases- its causes, precipitating factors, social & other non- health causes, mechanisms of transmission, signs/systems, management, control & prevention measures, related national Health Programmes & national Guidelines, Directives, special projects, if any.

ii. Explain application of Disease surveillance system in control of Communicable / Non-communicable diseases.

iii. Explain & undertake steps to investigate & control outbreaks, epidemics and take measures to prevent the same.

iv. Evolve prevention & control measures based on local & regional epidemiological funding, synchronizing with National guidelines.

3. **Applied Epidemiology, Health research, Bio-statistics**

Learning objectives:

At the end of this course, the student should be able to:-

i. Explain the concept & application of Epidemiology of Disease and Health giving suitable examples.

ii. Explain Epidemiological approach, the terms Distribution & Determinants, uses, types of Epidemiological studies, interpretation, merits/demerits and limitations, odds ratio, relative risk, attributable & population attributable risks, Hybrid designs (with examples), validity of Epidemiological Data and application in practice at field level.

iii. Explain Epidemiological Research methods, Research related protocols, Literature review, estimating sample size, data collection/ compilation/Analysis/ Research, interpretation.

iv. Develop Health interventional programs based on Epidemiological Finding & create evidence for Public Health action.

v. Understand difference between data, information & intelligence, types of data, survey methods, formulating questionnaires, interview schedule, data presentation types & analysis.

vi. Apply computer based software application for data designing, data management & collation analysis e.g. SPSS, Epi-info, MS office and other advanced versions.

4. Nutrition

Learning objectives:

At the end of this course, the student should be able to:

i. Identify various nutritional problems in the region, state and country and contributing factors for the same, with due emphasis on ecology perspectives.

ii. Explain importance of various nutrients (including micronutrients) in health, their sources, requirements and problems associated with their deficiencies as well as over consumption.

iii. Plan balanced diet and dietary requirements of various age and sex groups.

iv. Dietary/nutritional concerns of vulnerable groups – young children, adolescents, ANC/PNC/Lactating mothers/senior citizens/individuals with various health problems e.g hypertension, diabetes, renal problems etc.

v. Classification of food, food additives, food fortification, food enrichment, food toxins and food adulteration.

vi. Explain Food production, Food hygiene and safety, food storage, food preparation, food wastage and feeding practices.

vii. Assessment of nutritional status of a community by adopting different methodologies.

viii. Nutritional supplementation, surveillance, education and rehabilitation.

ix. National programmes in nutrition and their evaluation

x. National nutrition policy.

5. Environmental health

Learning objectives:

At the end of this course, the student should be able to:

i. Highlight importance of external environment (air, water, noise, radiation, temperature, ventilation, solid waste disposal, insects and vectors, domestic and country yard pests, industrial waste disposal etc. and its impact on ecology and human health.

ii. Elaborate on health issues related to housing, air, water, noise, radiation pollution i.e. size of problems, area and specific groups affected, measurement of pollution levels and health impact of the same, corrective measures

iii. Elaborate on requirements of water, water chlorination and household purification measures, measurement of chlorine demand, Break-point chlorination levels, water quality.

iv. Assessment of quality of water and air, control of air pollution

v. Explain environmental sanitation and control measures (including appropriate technologies) – modern methods of sewage disposal, mechanical ventilation, soakage pits, gobar gas plants, smokeless Chula, solar energy, rainwater harvesting, sewage water recycling plants at society level etc.

vi. Explain global warming and its health impact.

vii. Elaborate on forest reserves, social forestry and health

viii. Study vectors of medical importance and integrated control measures against them.

ix. Explain dynamics of transmission of vector borne diseases

x. Explain pest control measures

xi. Explain environmental health issues in urban and rural areas

xii. Understand functioning of public sector measures to safeguard environmental health e.g water purification plant

xiii. Explain Legislative measures for protection of environmental health

6. Primary Health Care System, Panchayat Raj, National Health Programmes including RCH, Demography & Family Welfare:

Learning Objectives:

At the end of this course, the student should be able to:

i. Explain the meaning of Primary Health Care with suitable analogies with reference to India, and be able to define the systems approach for implementation of Primary Health Care.

ii. Enumerate the elements, principles, population coverage norms, staff patterns, day to day activities, programme schedule, stakeholders at PHC level.

iii. Explain the scope and implications of 3-tier system of Primary Health Care.

iv. Understand functioning of Rural Panchayat Raj system of development and its co-relation with health.

v. Promote community participation in Primary Health Care programme and motivate various stakeholders for the same.

vi. Understand and comply with medico-legal procedures related to Primary Health Care activities.

vii. Integrate, coordinate both health and non-health sectors for implementing various national health programmes.

viii. Deliver the provisions of various health schemes to eligible be beneficiaries such as Janani Suraksha Yojana, Rashtriya Swasthya Beema Yojana, Rajiv Gandhi Jeevandayi Arogya Yojana etc.

ix. Impart training in health programmes for paramedical workers, lab technicians, community health volunteer's, interns and provide health education in the community.

x. Implement Public Health Skills for investigations and containment of outbreaks & epidemics.

xi. Understand history of evolution of public health, important milestones in the world and in India.

xii. Enumerate the various health committees established and their major recommendations since 1947-48 to till date.

7. Health Care Administration, Health Management and Public Health Leadership

Learning Objectives:

At the end of this course, the student should be able to:-

i. Explain the conceptual difference between Administration and Management, Power and Authority with reference to health care.

ii. Explain the role of fundamental principles of constitution, principles of Democracy and its correlation with health care administration.

iii. Explain the role of Bureaucracy, Technocracy, Political system, Judiciary, Media and people in health care administration.

iv. Explain and identify the key positions and their role in health administration at State, District, Taluka (Tehsil block) and village level.

v. Explain the frame work of health care system at State, District, Taluka & village level and understand the mechanism of coordination between bureaucrats, technocrats, political, judiciary and media at each of these levels.

vi. Enumerate functions of a manager, explain concepts of management and leadership styles, various management techniques, planning process, monitoring & evaluation skills.

vii. Should be sensitive to quality issues in health care management and comply with relevant quality management techniques.

viii. Formulate and manage team approach for implementing health programmes.

ix. Apply skills of effective human resource management and identify relevant roles, responsibilities and duties of functionaries.

x. Implement skills of motivation, communication, negotiation and conflict management at PHC level.

xi. Develop budgetary statements based on evidence of needs assessment and be able to maintain account of expenditure as per norms.

xii. Undertake community health needs survey, conduct training & communication needs assessment of paramedical and health workers, identify vulnerable, underprivileged communities, implements high risk approach.

8. Health Policy, Medical Education, Integrating Alternative system of Medicine

Learning Objectives

At the end of this course, the student should be able to:-

i. Understand and elaborate implications of the policy provision with reference to the current health scenario in the country.

ii. Explain the role of health policy in promotion of Primary Health care, ensuring equity, intersectoral co-ordination, appropriate technology and community participation.

iii. Explain the various provisions for promotion of preventive and curative health services including National Health Mission, National Health Programs, Quality Hospital based services, Medical Education and AYUSH.

iv. Critically appreciate merits and demerits of the Health Policy.

v. Explain SWOT analysis of the policy and debate on evidence based recommendations, additions, deletions.

vi. Debate on suggestions or recommendations for future inclusions.

9. Social and behavioral sciences

Learning objectives:

At the end of this course, the student should be able to:-

i. Understand influence of social and behavioral practices on health.

ii. Understand principles of behavior change of an individual and community. Clearly understand difference between knowledge, attitude and practices..

iii. Understand importance of social medicine and health.

iv. Importance of behavior change communication (BCC).

v. Socio-cultural factors influencing behavior change.

vi. Formal and informal organizations in the community.

vii. Influence of peer pressure.

viii. Know the health problems, where BCC interventions are necessary.

ix. Understand factors promoting and detrimental to BCC.

10. Public Health Legislations

Learning objectives:

At the end of this course, the student should be able to:-

i. Explain public health legislations and need for the same.

ii. Know in detail each public health law – when, why, implementation, impact, issues etc.

iii. Enforcement of various public health laws.

iv. Judiciary mechanism for ensuring proper implementation of public health laws.

v. Scope for integrated approach for implementation of public health laws.

11. International Health

Learning Objectives:

At the end of this course, the student should be able to:-

i. Understand the need and scope for international health measures.

ii. Enlist and understand functioning of various UN agencies (including WHO) playing key role in international health.

iii. Enlist and understand functioning of bilateral vs multilateral international donor agencies.

iv. Provide advice to international travelers and vaccination requirements,

v. Understand International health control measures e.g. quarantine, airport management etc.

vi. Understand the management of international ports from health perspectives.

12. Occupational Health

Learning Objectives:

At the end of this course, the student should be able to:-

i. Understand the concept of occupational health and its importance, Occupational environment and work dynamics.

ii. Know different types of occupational exposures at various settings.

iii. Enlist various occupational hazards and their relative magnitude.

iv. Understand measurement of exposure levels to harmful influences during occupation.

v. Understand preventive and control measures against various occupational hazards – global, national and local level measures.

vi. Understand individual and community responses towards preventing exposure to occupational hazards.

vii. Understand and advise occupational safety measures.

viii. Understand legislative measures to prevent exposures to occupational hazards.

ix. Advise compensation provisions to persons exposed to various occupational hazards.

x. Understand occupational health problems amongst people in unorganized sector

xi. Understand and advise social security and welfare provisions for workers – ESIS, Factory's Act, Role of ILO, Ministry of Labor, DGFASLI.

13. The recent advances in Public Health & miscellaneous issues

Learning Objectives:

At the end of this course, the student should be able to:-

i. identify & enlist events at local, district, national & global levels influencing or adversely affecting health /medical issues of the population.

ii. Adopt & practise skills related to utilization of modern technology, software, IT application in the interest of health promotion & disease prevention.

14. Health Economics

Learning Objectives:

At the end of this course, the student should be able to: -

i. Describe the scope of health economics.

ii. Understand health market & its characteristics.

iii. Understand & apply economic evaluation techniques.

iv. Assess the mechanism of Funding Health Care services, especially health insurance.

v. Advise on alocation of resources appropriately in their work area.

TEACHING AND LEARNING METHODS

Teaching methodology

The following is a rough guideline to various teaching/learning activities that may be employed:

- **Journal Club** : Critical appreciation and discussion of research articles in indexed journals
- **Seminar**
- **Lecture/Discussion**: Lectures on newer topics by faculty

- **Case presentation**: Communicable disease case presentation (focus on epidemiology, control, prevention) or Family case (focus on health needs assessment, SWOT analysis of family, social determinants and social empowerment, community management, role of primary health care and mobilizing resources for empowerment of the family). PG students will present the cases in presence faculty and discuss various modalities of management.

- **Public Health Management** training in Immunization clinics, Disease Surveillance Units, General Preventive OPD, hands-on training in management of national health programs at urban health centre and rural health centre along with orientation in health administrative system.

- The PG student shall be required to participate in the teaching and training programme of Undergraduate students and interns.

- The PG student must have attended Mandatory training in Research Methodology during his tenure.

- A postgraduate student of a postgraduate degree course in broad specialities/super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.

- **Special Seminars / Workshops:** conducted by External Faculty on cross-cutting subjects directly or indirectly concerned with Health. eg. Critical appreciation of National Developmental Budget, delivered by prominent Economist.

- **Log Book**: Postgraduate students shall maintain a log book of the work carried out by them and the training programme undergone during the period of training including details of work experience during their postings, including programs implemented under supervision and those performed independently. The log book shall be checked and assessed periodically by the faculty members imparting the training.

- Department should encourage e-learning activities.

- Postings are given below:

During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently; for this purpose, provision of skills laboratories in medical colleges is mandatory.

ASSESSMENT

FORMATIVE ASSESSMENT, ie., during the training may be as follows:

Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.

Quarterly assessment during the MD training should be based on:

1. Journal based / recent advances learning
2. Patient based /Laboratory or Skill based learning
3. Self-directed learning and teaching
4. Departmental and interdepartmental learning activity
5. External and Outreach Activities / CMEs The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure I).

SUMMATIVE ASSESSMENT, ie., at the end of training

The summative examination would be carried out as per the Rules given in POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

The examination shall be in three parts:

1. Thesis Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A post graduate student shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners.

2. Theory Examination: The Post Graduate examination shall be in three parts: -

1. Thesis:

It should be submitted to the University by each post graduate student at least 6 months before the theory and clinical/practical examination. The thesis shall be examined by a minimum of three examiners, one internal and two external examiners, appointed by the university and who shall not be the examiners for theory and practical. A post graduate student shall be allowed to appear for the theory and practical/clinical examination only after the acceptance of the thesis by two examiners.

2. Theory:

The examinations shall be organised on the basis of 'Grading'or 'Marking system' to evaluate and to certify post graduate student 's level of knowledge, skill and competence at the end of the training. Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical' separately shall be mandatory for passing examination as a whole. The examination for M.D./ MS shall be held at the end of 3rd academic year. An academic term shall mean six month's training period.

There shall be four theory papers as follows:

Paper I: Conceptual (and applied) understanding of Public Health, Community Medicine, Communicable and Non- Communicable diseases, emerging and re-emerging diseases, Applied Epidemiology, Health research, Bio-statistics.

Paper II: Nutrition, Environmental Health, Primary Health Care system, Panchayat Raj system, National health Programs, RCH, Demography and Family Welfare, Health Care Administration, Health Management and Public Health Leadership.

Paper III: Social & Behavioral sciences- applied aspects, Scientific communications & Medical writing, Research Methodology, Public Health Legislations, International Health & Global Diseases surveillance.

Paper IV: Health Policy planning, Medical Education technology, Information Technology, Integration of alternative Health system including AYUSH, Occupational Health, Recent advances in Public Health & Miscellaneous issues, Health Economics.

Practical/Clinical and oral examination:

The practical examination should be conducted over two days, not more than 8 post graduate students per batch, per day as follows:

1. **One long Family case from the community:**

   Socio-economic, demographic, cultural and holistic history taking, of the family to understand the various risk factors affecting health and quality of life, assessment of social support system, assessment of present morbidity and its implications, evolve interventions for medical relief and social empowerment and role of family, community and primary health care system in resolving family issues. This shall be conducted preferably in the community setting.

2. One long Case (30 minutes), 2 short cases (20 minutes each) – Cases with Communicable Diseases

   Students will elaborate on clinico-epidemiological case history to assess the epidemiological factors, precipitating factors, probable source of infection and evolve measures for diagnosis, treatment, management with reference to the case as well as major public health concerns, i.e. Control, prevention of the diagnosed disease and interventions in case of eminent outbreak / epidemic situations. Short cases may be assessed without presentation of detailed history, beginning with Differential Diagnosis in the given time.

3. Epidemiology and Statistics problem-solving exercises (5): (Epidemiological – 3, Statistical – 2)

4. Public Health Spots (5) : including interpretation of analytical reports of water, food, environmental assessment and public health micro-biology

5. Viva-voce Examination:

   Oral/ Viva-Voce Examination shall be comprehensive enough to test the post graduate student's overall knowledge of the subject.

COURSE OUTCOMES:

- Acquires knowledge about communicable and non-communicable diseases, emerging and reemerging diseases, their epidemiology, control and prevention.

- Enhance the knowledge of Health Care Administration, Health Management and Public Health Leadership
- Understand and express implications of 'Poverty Line', 'Social Inclusion', 'Equity', 'taxations', 'Insurance' on Health care management.
- Able to demonstrate clinical skills of preparing case history, examination, provisional diagnosis, treatment and clinical case management and interpretation of laboratory findings.
- Acquire knowledge to conduct common procedures such as incision, drainage, dressings & injections.
- Acquire knowledge to conduct epidemiological research studies to establish cause-effect relationships in elaborating the epidemiology of diseases and health events.
- Identify different types of mosquitoes, detect vector breeding places and orientation of the methods of elimination of breeding places and placement of a mosquito-proof water tank.

Recommended reading:

A. Books (latest edition)

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. Epidemiology and Management for Health Care, by Sathe PV and Doke PP.

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 03-05 international Journals and 02 national (all indexed) journals

Annexure I

Postgraduate Students Appraisal Form

Pre / Para /Clinical Disciplines

Name of the Department/Unit :

Name of the PG Student :

Period of Training : FROM…… TO……

Sr. No.	PARTICULARS	Not Satisfactory	Satisfactory	More Than Satisfactory	Remarks
		1 2 3	4 5 6	7 8 9	
1.	Journal based / recent advances learning				
2.	Patient based /Laboratory or Skill based learning				
3.	Self directed learning and teaching				
4.	Departmental and interdepartmental learning activity				
5.	External and Outreach Activities / CMEs				
6.	Thesis / Research work				
7.	Log Book Maintenance				

Publications Yes/ No

Remarks*_____

_____

*REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.