



Competency Based Medical Education Course-Curriculum MD (Community Health Administration)



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**The National Institute of Health and Family Welfare
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INDEX

Sl.No.	Contents	Page No.
1.	Background a. Institute b. Course	3
2.	Vision	4
3.	Goal	4
4.	Program Objectives	4
5.	Subject specific competencies a. Cognitive b. Affective c. Psychomotor	5
6.	Syllabus d. Program structure e. Content	11
7.	Teaching Learning Methods	31
8.	Assessment a. Theory b. Practical	32
9.	Points of contact	35

1. BACKGROUND

a. INSTITUTE

The National Institute of Health and Family Welfare (NIHFW), was established on 9th March, 1977, an autonomous organization, under the Ministry of Health and Family Welfare, Government of India, acts as an ‘apex technical institute’ as well as a ‘think tank’ for the promotion of health and family welfare programmes in the country and addresses a wide range of issues on health and family welfare from a variety of perspectives. The public health challenges being faced by the country calls for the development of capacity in the health systems of both the Central and State Governments by way of positioning qualified and skilled professionals who can execute and monitor national health policies and programs, supervise the public health workforce, fully assess the dimensions of public health issues and devise appropriate strategies to meet emerging challenges.

b. THE COURSE

The course, MD CHA, was started to serve the in-service students with minimum five years of experience. With the present thrust on public health management and increased demand among medical students the course was decided to open for fresh medical graduates. The course will develop a student to deal effectively in managing the public health programs at the Ministry of Health & Family Welfare and Directorate General of Health Services. Simultaneously acquiring skills in managing the various needs and requirements of hospitals/community/training institution or medical college.

In first year the students are taught about community management including Biostatistics, social sciences, research methodology, management, and need assessment etc, followed by healthcare management in second year in which student learn about the principals of policy, planning, management information system and biostatistics and finally in third year trained in administration through developed demonstrated skills.

In order to train students they are given hands on training in form of externship at rural and urban training centres at diverse location of the country, for a duration of one year spread over three year duration.

The document describes goal, objectives, course content, syllabus, training program at a glance, assessment and suggested readings.

2. VISION

Effectively lead the planning, implementation, surveillance and evaluation of the national health programs and public health strategies in the field and assist in the health policy formation.

3. GOAL

Study the multidisciplinary aspects of Public health, policy and planning viz. public health administration and management, health policy and planning, epidemiology and biostatistics, demography, social sciences, management, communication, training technology, health economics etc. and use them in decision making regarding policies and practices by problem solving and promoting and meeting the challenges in public health.

4. COURSE OBJECTIVES

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

- a. Lead team of health professionals for planning and managing community health problems effectively and proactively (*Team Leader*).
- b. Study critically and manage existing health programmes at all levels and suggest alternatives for achieving desired goals (*Solution -seeker*)
- c. Be proficient in resource management along with professionals, materials (resources) and financial management for health schemes and health service implementation (*Health Manager*)
- d. Have global perspective of health scenario and be capable of understanding cultural specific health needs, its implications and its interventions (*Researcher*)
- e. Plan and administer functions of big hospitals (*Hospital Administrator*)
- f. Function effectively as Industrial Health Officer (*Occupational Health Specialist*)
- g. Impart knowledge and skills to medical, nursing and paramedical students including its implementation and evaluation (*Academician*)
- h. Serve as expert in national and international agencies in the field of public health (*Public Health Physician*)
- i. Identify and understand the changing health needs of community and organize relevant effective interventions for amelioration of health problem (*Health Analyst*)

- j. Design need based health interventions through teaching and training programmes for trainers at large for desired change in health practice. (*Health Educator*)
- k. To provide information, advice, and guidance to decision-makers to prompt action to protect the health of communities (*Risk Communicator*)

5. SUBJECT SPECIFIC COMPETENCIES

By the end of the course, the student should have acquired knowledge (cognitive domain), professionalism (affective domain) and practical competencies (psychomotor Skills) as given below:

A. Cognitive Domain

At the end of the course, the student should acquire theoretical competencies with following learning objectives and suggested readings:

Module I: Basic Sciences related to Health Administration

- i) The student should be able to conceptualize the strategic plan formulation and decision making in community health management, which emerge from judicious and meaningful combination of technological, economical, social, political and psychological processes.
- ii) The student should follow scientific approach to management of community health. The student will be able to utilize skills of social sciences to explore need assessment of the identified community.
- iii) The student should be able to solve the problem pertaining to inter human relations i.e. the conflicts between the workers and the managements, as he will be fully conversant with the principles of personnel management.
- iv) The student should be able to handle man-power planning, personnel selection, job analysis, job specifications, job enrichment, recruitment procedure and development of staffing pattern to suit the needs of an organization.
- v) The student should be fully conscious of the fact that the health center or hospital is a social institution; and should be able to integrate the job of different professionals to work as a team to run the organization efficiently and meet the health needs of the community.
- vi) The students should be able to understand and apply basic principles of supply chain management including materials management so as to, not only ensure availability of the right item at right time, right place, right quality, right quantity and at a right cost but also the optimal utilization of the same,

vii) The students should be able to understand the basic concepts health economics as well as applications of financial management including budgeting, accounting and auditing.

viii) **References**

1. Tripathi P.C and Reddy P.N.: Principles of Management
2. James A Willian : Hospital Management., Mac Millan Education Ltd., New Delhi.
3. Chatterjee NN: Management of Personnel in India Enterprises, Allied Book Agency, Calcutta
4. Tripathi P.C. : Personnel Management and Industrial Relations., Sultan Chand & Co.,
5. Jyothi P & Venkatesh D.N: Human Resource Management, Oxford
6. Sarantakos:Social Research., Macmillan Press., Australia
7. Festinger and Katz: Social Research., Longman., London
8. Jathoda Marie et al: Research Methods in Social Relations., Free Press., New York.
9. Kothari C.R.: Research Methodology – Methods and Techniques., Wiley Eastern Limited., Delhi.
10. Goode and Hatt: Research Methods in Social Sciences
11. Project Management for Healthcare By David Shirley, CRS Press, 2011
12. Project Management in Health and Community Services-Getting good ideas to work, By Judith Dwyer, Pauline Stanton, Valerie Thiessen, National Library of Australia,
13. The ABCs of Program or Project Planning By Sunny O'Flynn, Strategic book rights and publishing company, Houston

Module II: Epidemiology, Research, Education & Training in Community Health

Explain the concept & application of epidemiology of disease and health giving suitable examples:

- i. Explain epidemiological approach, terminologies, 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.
- ii. Explain epidemiological research methods, research related protocols, literature review, estimating sample size, data collection/ compilation/analysis/ research, interpretation.
- iii. Develop health interventional programs based on epidemiological finding & create evidence for public health action.
- iv. Understand difference between data, information & intelligence, types of data, survey methods, formulating questionnaires, interview schedule, data presentation types & analysis.
- v. The student should learn epidemiological and bio-statistical techniques to help proper planning of the medical care programme incorporating appropriate disciplines of medical, health and health related sciences.
- vi. Apply computer based software application for data designing, data management & collation analysis e.g. SPSS, Epi-info, MS office and other advanced versions.

- vii. He should understand the effect of environment on health and be familiar with the epidemiology of common diseases. He should be able to integrate the preventive and promotive methods with the curative and rehabilitative measures in the treatment of diseases.

viii. **References**

1. Park L: Text book of preventive & Social Medicine : M/s Banarasidas. Jabalpur
2. Robert L. Heatal: Principles of Epidemiology – A self teaching guide. Academic Press London
3. Morris J.N. Uses of Epidemiology, Churchill. Livingstone London
4. Benean SMAS: Control of communicable disease to man American PH Association, New York
5. Holland W.W., Detels R, Oxford Text Book of Public Health: Method of Public Health. London
6. Kelsey J.L: Methods of Observational Research, Oxford University Press, London
7. Abeline T. Measurement in Health Promotion & Protection, WHO Regional Publications
8. Karis S. Lankimen et al; Health and Disease in Developing Countries, Macmillan press. London
9. Krishnaswami O.R. & Ranganatham M: Methodology of Research in Social Sciences.,Himalaya Publishing House
10. Rao NSN: Elements of Health Statistics., Text Book Agency, Varanasi
11. Mahajan B.K: Methods of Biostatistics. Kothari Book Depot, AD Marg., Bombay
12. Potti L.R: A Textbook of Statistics, Yamuna Publications. Sreekanteswaram, Trivandrum
13. Lancaster H.O: Introduction to Medical Statistics, Johnwiley & Sons, New York
14. Leius A.E: Biostatistics in Medicine Little Brown & Co. Boston
15. Hill A.B. Principles of Medical Statistics, Oxford University Press., New York
16. Lwanga S.K & Cho-Yook-Tye: Teaching Health Statistics Twenty Lesson & Seminar Outlines., CBS Publisher

Module III: Public Health Administration

- i) The student should be able to apply learned management principles in delivering medical care in the health center or hospital as well as through its outreaches in the community.
- ii) The student should be able to assess socio-economic and cultural conditions, and their impact on health and disease for planning of appropriate medical care to the community generating their participation.
- iii) The students should be able to work independently in studying the patterns of diagnosis and treatment both preventive and curative of the diseases in the hospital as well as in the community, and be able to organise medical care within the resources as per availability with appropriate measures to control cost.
- iv) The student should be able to plan, organise, direct, and evaluate urban as well as rural medical care.
- v) He should be able to practice rehabilitation medicine at the door step of community. He should be familiar with the common problems occurring in rural areas and deal with them effectively. Given an opportunity to participate in surveys and camps, the students should be able to conduct surveys, organize camps, and build the capacity of health workers.

vi) Reference

1. Textbook of International Health: Global Health in a Dynamic World By Yogan Pillay, Timothy H. Holtz, 3rd Edition. Oxford University Press.
2. Textbook of International Health By Paul F. Basch, Oxford University Press
3. Global Health 101, By Richard Skolnik, 2nd Edition,
4. An Introduction to International Health, By Michael Seear, Published by Canadian Scholars Press Inc.
5. Essentials of International Health By Manoj Sharma, Ashutosh Atri,
6. Global Health –Disease, Programmes, Systems and Policies edited by Michael Merson, Robert E, 3rd Edition.
7. Health Care Administration: Planning, Implementing, and Managing Organized Delivery Systems, Third Edition, by Lawrence Wolper, Jones and Bartlett Publishers International, UK.
8. Essentials of Public Health Management by L. Fleming Fallon Jr., Eric Zgodzinski, Jones & Bartlett Publishers, 2011
9. Health Management by Preeti Oberoi, Sarup & Sons publication

Module IV: Medial Care & Hospital Administration

- i. The student should be able to acquire an idea about hospital and its role in health care delivery system, review the history of hospitals, role of political and economic factors in the growth of hospitals and classification of hospitals.
- ii. The student should be able to outline the peculiarities of health care institutions, factors influencing hospital care and role of hospital administration in providing good patient care including special problems of administration of a teaching hospital, voluntary hospital, district hospital, PHC, nursing home, etc.
- iii. The student should be able to work independently in financial & materials management. He will be able to assess the total financial needs of a health center or hospital and thus plan and measure the results scientifically.
- iv. After the student is exposed to the techniques of inventory control, he will be able to understand and practice concepts of economic order quantity (EOQ), break even analysis, use-coefficient, calculation of reorder level, buffer stock, methods of storage and flow of drugs and consumables, which will help in smooth running of a health center or hospital.
- v. The student should be able to plan and design a new hospital or modify old commensurate with the needs and resources of the community. He should be able to guide the architects regarding the essential requirements of a particular hospital for effective utilization of space at minimum cost as well as to make the hospital user friendly for patients and care givers.
- vi. The student should acquire knowledge of the laws and regulations applicable to hospitals and hospital employees, understand medico-legal aspects of practice of medicine in hospital setting and the laws applicable to setting up of a new hospital including biomedical waste and its proper disposal.

- vii. The student should acquire knowledge of types of disasters in the community, and be able to set forth policies and procedures for disaster preparedness and be able to execute disaster management plan for a hospital.
- viii. The student should be able to learn to establish equipment management process and its various components for a hospital.
- ix. As a future hospital administrator, the student should be able to plan how to manage various administrative support areas of the hospital and to visualize into the future needs and expectations of the community from the hospital.

x. References

1. Desai VA: Hospital Administration Vol. 1, Madurai, 1989.
2. Goel SL & Kumar R: Hospital Administration and Management Vol. 2., New Delhi., Deep.
3. Hall T.L. & Mejia A: Health Manpower planning – principles, methods and issues., WHO 1978.
4. Huss Carol: Indian Hospitals – Planned organizational changes in their structure and functioning, VHAI, New Delhi.
5. Kauer Antony R & Neuhauser Ducan : Health Services Management – Reading and Commentary., Michigan
6. Parthasarathy S.K. Hospital Services Management, KJ Hospitals, Madras.
7. Sainik Ashok : Role of Hospital Administrator in India, ISHA, Bangalore, 1986.
8. Sakharkar,B.M. – Principles of Hospital Administration and Planning.
9. Kunders, G D (2004)- Facilities Planning and Arrangement in Healthcare, Prism Books Pvt Ltd, bangalore.
10. Davies Llewellyn R & Macaulay H M C (1995) – Hosptal Planning and Administration, Jaypee Brothers, New Delhi.
11. Sharma K R, SharmaYashpal (2003) – A handbook on hospital Administration, Durga Printers, Jammu.
12. Sharma, Madhurai (2003) – Essentials for Hospital Supportive Services, Jaypee Brothers, New Delhi
13. Tabish, Syed Amin – Hospital Planning, Organisation and Management.
14. John Rea., Jeffer J. Frommelt: Buildings a Hospital – A prime for administrators.
15. James Lifton., Ownen B. Hardy: Site Selection for health care facilities.

B. Affective Domain

At the end of the course, the student should have acquired the following attitudinal competencies:

- a. Demonstrate self-awareness and personal development in routine conduct.
- b. Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.
- c. Motivation and Initiative: Takes on responsibility, is innovative, enterprising and does not shirk duties or leave any work pending.

- d. Honesty and Integrity: Is truthful, admits mistakes, does not cook up information, has ethical conduct and exhibits good moral values.
- e. Interpersonal Skills and Leadership Quality: Has compassionate attitude towards colleagues and paramedical staff, is respectful to seniors, has good communication skills.
- f. Identify social, economic, environmental, biological and emotional determinants of patients, and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to individual and community.
- g. Recognize the emotional and behavioral characteristics of patients and keep these fundamental attributes in focus while dealing with them.
- h. Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
- i. Organize and supervise the desired managerial and leadership skills.
- j. 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 opinion.
- k. 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.

C. Psychomotor Skills

At the end of the course, the student should have acquired the following psychomotor skills:

- Microteaching, Journal club and seminars may be considered.
- *Oral as well as poster presentation* in recognized conferences of their learned competencies and concepts through scientific research during MD course. This should be done for at least three times to acquire skills.
- *Publication* in National/International journals from their research or any other research during MD tenure. A student should publish minimum 3 articles in his tenure.
- Successful completion of various postings in the field practice areas of govt. as well as private medical colleges will help them to understand various programs their designing and services with operational problems in these areas.
- Conduct *community surveys* for assessment of health & morbidity profile, epidemiological determinants, assessment of health needs, disease surveillance, evaluation of health programmes and community diagnosis

- Students may provide input for developing, implementing, evaluating, and improving policies, programs, and services through acquiring *participatory research skills*. They will be able to understand the concept of diversity as it applies to individuals and populations in preparations of policies/programs.
- Develop appropriate IEC Material, assessment of community communication needs, training skills, counseling skills, and conduct health education programmes.
- Demonstrate *counselling skills* for family planning services. Plan and execute BCC strategy for individuals.
- Students will be asked to *prepare proposals and manage budgets, raising grants* from national and international organizations.
- 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.
- Conduct *epidemic investigations*, spot maps, predict disease trends, preparation of reports, planning and implementation of control measures.
- Conduct *clinical screening of various diseases and organize community health camps* involving community participation. 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.
- *Statistical software utilization skills* Excel, EpiInfo, SPSS, SAS etc. Use modern IT applications especially internet & internet-based applications.

D. SYLLABUS

Programme Structure and Course Contents:

I. PROGRAMME STRUCTURE

Module I: Basic Sciences related to Health Administration

- GM 1. General Management
- GM 2. Human Resource Management
- GM 3. Medical Sociology & Behavioral Sciences
- GM 4. Supply Chain Management
- GM 5. Financial Management
- GM 6. Organizational Behavior
- GM 7. Project Formulation and Management
- GM 8. Health Education & Communication
- GM 9. Public Health Legislations and Regulations

Module II: Epidemiology, Research, Education & training in Community Health

- AE1. Basic Principles, Concepts and Applications of Epidemiology
- AE2. Communicable Diseases
- AE3. Non-Communicable Diseases
- AE4. Disease Surveillance
- AE5. Population Science, Demography & Genetics
- AE6. Biostatistics and Application of Statistical Software
- AE7. Research Methodology
- AE8. Environment and Health
- AE9. Occupational Health
- AE10. Training Technology

Module III: Public Health Administration

- HE1. Health Policy and Planning
- HE 2. Health Economics and Financing
- HE 3. Operation Research
- HE 4. Health Administration in India
- HE 5. Health Care Systems in India
- HE 6. International Health
- HE 7. National Health Programmes
- HE 8. Health Information Systems
- HE 9. Care of Special Groups & Community Rehabilitation System

Module IV: Medical Care & Hospital Administration

- HA1. Hospital Organisations and Recent Trends
- HA2. Hospital Planning & Designing
- HA3. Clinical Services Management
- HA4. Support Services Management
- HA5. Utility Services
- HA6. Medical Records and Hospital Management Information System (HMIS)
- HA7. Quality Assurance including Medical Audit
- HA8. Legal Aspects of Hospitals
- HA9. Equipment and Material Management
- HA10. Safe Hospital Initiative and Disaster Management
- HA11. Biomedical Waste Management

II. PROGRAM CONTENT

SN	Sub-domain	Contents
Module I: Basic Sciences related to Health Administration		
GM 1.	General Management	<p>History and growth of management, Basic concepts, Principles and Theories of management, Process of management, System approach in management, participatory management, management by objectives, total quality management. quality control cycle, management grid</p> <p>Modern management techniques like MBO, Performance management, Corporate management including marketing management, Strategic management, Entrepreneurship management and marketing management, Management control system</p>
GM 2.	Human Resource Management	<p>Public health leadership, leadership styles, leadership skills of motivation, communication, negotiation and conflict management, Personnel management, Principles governing selection, Recruitment placement, disciplinary procedures, supervision, transfer, promotion, retirement, training, Job analysis, Job description, Job evaluation, training & development, performance appraisal, personnel development, employer-employee relationship</p>
GM 3.	Medical Sociology and Behavioral Sciences	<p>History and Scope of Social Sciences in Health: Basics of Sociology, Anthropology, Psychology related to health administration, Concepts, issues and problems in social and behavioural science, Cultural, Socio-economic and psychological determinants and impact on health problems and diseases in community, Social aspects of the population problem, mortality and fertility,</p> <p>Similarities and variations in relation to health in Tribes, Cast and Class, Principles and applications of Social Marketing techniques in health and family welfare programme.</p>

Community Diagnosis and Participation: value system and concepts of health, illness and medical care, health seeking behavior in implementing health care programs, Partnership, Networking and PLA (Participatory Learning for Action) for community participation, The relationship between 'modern/western' and 'traditional' medicine in the light of local medical traditions.

Dynamics of Change: Health behavior models, Influence of social and behavioural practices on health; knowledge, behaviour and practices related to various health problems; group communities, social stratification and its relationship with community health behaviour; ways of changing individual and community behaviour; relevance and use of social structures, social organizations and cultural factors in addressing problems in health as part of community development, Clino-social evaluation of individuals,

Principles of Social Psychology: Types of learning, motivation learning process in relation to acceptance of new health practices, Formation of attitudes towards and perception of various diseases and health practices, Counseling, Empathetic listening, Communication and Conflict

Evolution of hospitals Care and Family support, Public relations, doctor-patient relationships and hospital sociology, Privatization and health rights Ethics, Value and Beliefs in community health research, Access and utilization of universal health care,

Community response to emerging and re-emerging infectious diseases: Modern out brakes and community response (COVID-19), Stigma and community based strategies to cope with public health, Role and Response of Doctors and Paramedics, Community partnership approaches (bio-cultural approaches, interpretive and meaning-centered approaches, social mobilization),

		<p>Nutrition, poverty, and health.</p> <p>Public health Policy and National/Global Commitments: Health Policy and changing role of community, Governance (structure and function) and community collaborations, Multi-sectoral coordination and convergence, Design of community based public health intervention, Health and social inequalities & regional disparities (rural/spatial divide in health), Health Rights & Reproductive Rights, Sustainable Development Goals and Health, Corporate Social Responsibility & Health.</p> <p>Globalization and health effect on marginalized communities (occupation health, industrialization, urbanization)</p> <p>Gender and Health: Gender based issues and its relevance to impact of health care programs. Women empowerment and recent advances, Gender-based violence, Gender Budgeting</p> <p>Elderly Health: Policy and Rights, Elderly care and cure, Long term institutionalized hospital care (ex. Dialysis...terminally ill), Psychological effect of the attendants</p> <p>Anthropological Perspective of Genetic Diseases: Medical anthropology, Problem of micro-demography (social anthropology) ,accelerated changes in life style, Genetic counseling and management, Mapping of gene, Recent technological advances</p>
GM 4.	Supply Chain Management	<p>Principles of logistics and supply management, Inventory control techniques, Demand estimation & forecasting techniques, Procurement procedures for materials and equipment, Quality assurance in procurement supply chain management, Segmentation of Medical Products in Health</p> <p>Receipt and Inspection of procured items, Medical Store Management, Condemnation and Disposal procedures</p>

GM 5.	Financial Management	The Goals & Functions of Financial Management, Basics of Financial Management, Issues and scope of financial management, Basics of Management Accounting and Budgeting, Basics of Financial Analysis and Forecasting, Resource mobilization and asset management, Financial planning, Cost containment, Time value of money, discounting methods
GM 6.	Organizational Behavior (OB)	<p>Basics in OB: Meaning and Definitions of Organisational Behaviour, Dynamics of organizational behavior, Characteristics of work groups, Health organizations and personnel, Factors affecting organizational behavior.</p> <p>Organization Behaviour (OB) Labs: Characteristics of OB, Principles of OB, Models of OB, Organisational structure, individual behavior, attitude and learning, Johari window. Ways of improving the working of organisations, Problems in human relations, Motivation & Leadership, Conflict management, Organisational culture, Transactional analysis, Team building, Group behavior etc</p> <p>Research the health organizations: The role evaluation and research in administrative action, feedback process in health organizations, Instrumentation for administrative research, projective technique, scaling of behaviour tools for data analysis, research methods for quick administrative decision making, multi-disciplinary research in administration.</p>
GM 7	Project Formulation and Management	Defining “project management”, Project cycle management, Planning and management of project Managing stakeholders, Developing a project management plan, Assessing the feasibility of a project Identifying organisational structures Entering into a contract, Managing a project, Monitoring a project, Estimating costs and budgeting, Managing time Controlling quality, writing report.

GM 8.	Health Education and Communication	<p>Basics: Concepts, Principles, Process and Methodology of communication, Interpersonal/group/mass communication, Role of health education and communication, Communication theories related to education of community, meaning and methods of social mobilization, use of media by health personnel, characteristics of good communication</p> <p>Planning health communication: Communication need assessment in a community, Skills in developing and implementing health communication messages and its monitoring and evaluation, case studies in health communication, types of media, their characteristics and uses for health and family welfare communication and their effectiveness for health promotion,</p> <p>IEC & BCC: Model of Communication, IEC and BCC and strategies for health and family welfare, importance of BCC and BCC interventions, socio-cultural practices influencing behaviors change, communication for behaviour change, countering rumors and misconceptions, barriers in effective communication (SBCC), health communication techniques and health promotion and prevention. communication for health and development</p> <p>Communication in organizations, networking and advocacy, training health staff in IEC and BCC,</p> <p>Types and use of AV aids for communication, IT/Internet applications in health communication including promotion and diseases prevention</p>
GM 9.	Public Legislations Regulations	<p>Health and</p> <p>Promulgation and Enforcement of Health Legislation; Services and responsibility of National, State and Local Health Agencies.</p> <p>Important Public Health Acts and Rules: Indian Medical Council. Act, Epidemic Diseases Act, Medical Termination of Pregnancy Act and Rules PCPNDT Act and Rules, The Transplantation of Human Organ Act and</p>

		Rules, Mental Health Act, Food Safety and Standard Regulation Act, Drug and Cosmetic Act, Narcotic Drug and Psychotropic Substances Act, Control of Tobacco Product act, Bio-medical waste (Management and Handling) Rules, Consumer Protection Act and Rules, Protection of women from Domestic Violence Act, Clinical Establishment Act, Other Relevant Acts approved by Parliament
Module II: Epidemiology, Research, Education & Training in Community Health		
AE1.	Basic Principles, Concepts and Applications of Epidemiology	<p>Basic Epidemiology: Principles of Epidemiology, Concept of health and Diseases, Epidemiological methods, Types and detailed methodologies of Epidemiological studies such as Descriptive, Analytical, Intervention/Experimental (Case-control), cohort and importance of Multi-Centric studies., Interpretation of Epidemiological studies., Screening for diseases, Evaluation of screening tests, Validity of Screening and Diagnostic tests , Calculation of sensitivity, specificity, and predictive values, epidemiological indicators of health, disease, disability ,death and other health related events, international classification of diseases, determinants of health and diseases, burden of disease approach and its application in health management. sources of epidemiological data, epidemiological surveys, rapid epidemiological and statistical techniques and their utility for health managers,</p> <p>Epidemic Management: definition, prediction, investigation, containment, prevention and management, identification of risk factors and implementation and evaluation of risk approach in health care, epidemiological transition and its influence on health and related policies and programme</p> <p>Epidemiological models in health care management and its application, Organizational set-up and functioning of epidemiological system in primary health care</p>

AE2.	Communicable Diseases	Epidemiology of infectious diseases including airborne, food borne, water borne, sexually transmitted, contagious and arthropod borne diseases and determinants
AE3.	Non-Communicable Diseases (NCD)	Epidemiology of NCDs including hypertension, cardiovascular stroke, obesity, diabetes and accidents and their determinants
AE4.	Disease Surveillance	IDSP, Polio-surveillance, Immunization schedule, mode of administration, Cold Chain and equipment, Collection and dispatching and follow-up for Vaccine Potency testing, Adverse events following immunization, Surveillance of emerging diseases, role of laborites in epidemiological services
AE5.	Population Science, Demography and Population Genetics	<p>Study of Population: Population composition, growth rate and factors responsible of high population growth, population density, age-sex distribution in population, child sex ration, sex selected abortion etc Fertility control measures, contraception including sterilization and modern spacing methods of contraception, computation of contraceptive rates and couple protection rates, urbanization, migration and health, evolution of FP programme in India. Population projections at National and Sub-national levels, Population and Development, Policies and Strategies for population control/stabilization</p> <p>Health, Fertility and Mortality Indicators: Prevalence and incidence measures of fertility and mortality, Direct and indirect methods of standardization, Life table techniques and its applications, Composite indicators like QALYs, DALYs, HDIs, Hunger Index, Disease Burden etc</p> <p>Demographic Transition: Demographic trends in India and its application in the planning of health programmes, demographic dividend, Interpretation and implications of Demographic Transition on global and Indian context.</p> <p>Population Surveys: Survey methods, Community Health need assessment surveys, health and demographic surveys in India like NFHS, Adhoc surveys by International organizations,</p>

		<p>Vital Registration System in India: Organization, procedure, data generated by the system, critical appraisal of the system, Civil Registration System, Sample Registration System, Census, Survey on causes of deaths, Diseases Burden, Role of Office of the Registrar General of India,</p> <p>Population Genetics: Definition, concepts and problems related to genetics, Genetic counselling and management, Recent advances including mapping of genes, Human genome project.</p>
AE6.	<p>Biostatistics and Application of Statistical Software</p>	<p>Basic concepts: Definitions, presentation of data. frequency distribution, measurements of central tendency, measurement of dispersion, measurement of concentration</p> <p>Sampling Size and Sampling Techniques: Types of sampling, sampling error, standard error, sample size calculation for different types of studies, sampling design, sampling weights, sampling frame, random and purposive types of sampling and their relative merits and demerits, design effect.</p> <p>Testing of hypothesis: One tailed and two tailed tests, test of association, type-1 error, type-II error, power of tests.</p> <p>Theory of Probability and Probability Distributions: Calculation of Probability, laws of probability, Bayes theorem, Binomial, Poisson, Exponential and Normal distributions and their applications.</p> <p>Statistical Tests: Tests of significance (Parametric / Non-parametric), mean test, proportion test, t-test, paired t-test, chi-square test, analysis of variance (ANOVA), Adjustment for confounders.</p> <p>Statistical Analysis Techniques: Association, Correlation and Regression, Bivariate and Multiple regression, Multivariate Regression Analysis, Logistic</p>

		<p>Regression Analysis, Multinomial Regression Analysis, Time series analysis</p> <p>Use of computers in statistical computing: Excel, SPSS, R Software, Epi-info, N-Vivo (for qualitative study) etc., Awareness regarding remote sensing, GIS, Health Atlas, and other new technologies</p>
AE7.	Research Methodology	<p>Types of Research: Health system research and its utility in health management, Health policy research, Action research, Health behaviour research, Operational research</p> <p>Preparing for Thesis/Dissertation Synopsis: Identifying research topic, problem statement, research hypothesis, conceptual framework of study, formulating objectives, study variables (dependent and independent), data collection tools and techniques for qualitative as well as quantitative research, mix method techniques, writing review of literature (ROL), type of study and research design, sample technique and sampling design</p> <p>Data Collection, Analysis and Writing Thesis: Designing research tools including coding, quantitative and qualitative methods of analysis including data cleaning and database management, systemic review and Meta-analysis writing findings, discussion, conclusions and recommendations and executive summary, writing references, writing research articles from Thesis</p>
AE8.	Environment and Health	<p>Principles of environmental health and human ecology, Environmental health risk assessment, environmental impact assessment/analysis of development projects, Environmental Pollution:</p> <p>Water pollution and review of control and monitoring methods, Purification of water and its storage and distribution, water quality standards – its implementation and monitoring, Epidemiology and Control of Water borne diseases</p>

		<p>Indices of thermal comfort and their applied importance</p> <p>Air Pollution including monitoring, control and prevention</p> <p>Importance of domestic and industrial Housing standards</p> <p>Impact and control of noise pollution</p> <p>Radiation Hazards from natural, industrial, hospital, communication devices</p> <p>Management of community waste, Disposal of solid wastes, sewage treatment and safe recycling guidelines</p>
AE9.	Occupational Health	<p>Relevance of occupational environment to health hazards</p> <p>Hazard identification and risk assessment in industries, Basics of industrial toxicology, principles of Ergonomics and Work</p> <p>Programme and Legislation related to safety, welfare and work and also to protect exposure to occupational hazards such as ESI Act, Factories Act, Mines Safety Act, Social Security Act and Welfare measures for workers etc. Insurance schemes CGHS, ESIC etc</p> <p>Principles of Industrial Safety and Industrial house-keeping., Sickness and Absenteeism.</p> <p>Principles of Industrial Psychology including work related stress management.</p> <p>Organisation and administration of medical care in a work environment including industries in unorganized and organized sectors. Recent advances in occupational health</p>
AE10	Education and Training of Health Personnel including Human Recourse Development	<p>HRD: Human resource development process, steps in human resource development including training, basic concepts and principles in adult learning,</p> <p>Steps in Training Cycle: training needs assessment, developing training curriculum including training</p>

		<p>objectives, contents, methods, training schedule, listing of training aids and learning resource material, training monitoring and evaluation procedure etc, training policies and infrastructure facilities for basis as well as in-service training and continuing education for health personnel in India</p> <p>Training Technology and Application: Training needs assessment, Micro-teaching, conducting training, setting learning objectives and communication need assessment of paramedical and health workers, National Training policy etc</p> <p>Training techniques, training methodology (group discussion, case method, role play simulation, laboratory training), participatory and experimental learning, micro training, Laboratory (Micro lab) for enhancing training and IPC skills. Training for attitudinal change, development of curriculum, scientific learning and reaction level evaluation, innovative and modern learning methods and aids.</p>
Module III: Public Health Administration		
HE1	Health Policy, Planning and Evaluation	<p>Health Policy: Basic concepts and terminologies in Policy, Type of policies, formulating policy, policy making process, policy context, evidence based policy, characteristics of good policy, health policy research, policy analysis framework, Highlights of various health and related policies viz, National Health Policy, National Population Policy, National Nutrition Policy, National Drug Policy, etc, Policy and planning, health sector reforms: meaning, components and strategies.</p> <p>Health Planning: Planning principles and practices, Relationship of Planning to Management, Decentralized vs Centralized/Mix Approach to Planning, Planning cycle, Process of Planning, Development of Action Plan, Activity Planning Matrix, Strategic planning, programme planning and planning for resources, Health planning</p>

		<p>process and machinery in India and States, historical developments of health components in five year plans,</p> <p>Preparation of State PIPs, Participatory Approaches in planning,</p> <p>Supervision and Monitoring: Concepts and principles in Monitoring & Supervision, indicators in monitoring and supervision, Process, methods, tools and techniques of monitoring and supervision, Result Based Monitoring, Result Framework, Monitoring Framework.</p> <p>Programme Evaluation: Evaluation and related indicators, purpose of evaluation, types of evaluation, indicators for evaluation, evaluation design, quantitative and qualitative methods of evaluation, Log Frame Matrix, review of various evaluation reports</p> <p>Administrative Evaluation: evaluation of organizational efficiency through work measurement of units, procedure, analysis and control techniques to elicit information on procedure and time required for different activities, evaluation of managerial aspects like communication, supervision, inspection, and team work. evaluation of fiscal aspects including decentralization of financial powers and logistics</p> <p>Preparing Evaluation Proposal and Writing Evaluation Report</p>
<p>HE2.</p>	<p>Health Economics and Financing</p>	<p>Health Economics: Basic concepts in health economics and financing (viz, GDP, GNP, Externalities & Public vs Private Goods etc), Introduction to Micro and Macro health economics, Pharmaco-economics, analysis of factors affecting demand and supply of basis health services, health care industry,</p> <p>Costing Techniques: Elements of cost, types of costs, costing & cost analysis, variance analysis, cost accounting, modem methods of costing, methods of</p>

costing of health services, discounting, rate of depreciation, hospital rate setting, break-even analysis, return on investment

Budgeting and Auditing: Budgeting, zero based budgeting, performance budgeting, budget monitoring, project budgeting & types of expenditure, grants and sub-grants, grants management, cash flow management, investment and returns on investment, price elasticity of demand, preparation of financial statement and utilization certificate, types of auditing, overview of legal framework and statutory audit etc. exercises and case studies.

Budget and fiscal policy, national income and its measurements, financial accounting, financial sustainability, basics in National Health Accounts, National/ State/District Health Accounts, General Financial Rules, Public finance Management System

Economic Evaluation and Appraisal: Cost benefit, cost effectiveness and cost utility analysis.

Resource Mobilization and Health Financing: Supply-Demand side financing, financial accounting User charges, tax funding, various types of health Insurance Schemes and related terminologies (Social, Community based and private) like CGHS, ESI, PMJAY etc., health care market,

Out of pocket Expenditure, Catastrophic health expenditure, sources of data on health expenditure and financing.

Medical care system and financing in different countries (USA, UK, Cuba, Thailand etc)

Manpower Sources: Role of ILO, Ministry of Labor, Director General, Factory Advice and Labour Institutes (DGFASLI)

HE3.	Operations Research (OR)	<p>Operations Research in Health: Definition and genesis of Operation Research, Purpose and criteria of conducting Operation Research, Tools and Techniques used in Operations Research, process of conduction Operations Research, Operations Research Design, application of Operations Research in problem solving in health services delivery and health programmes</p> <p>Operations Research Techniques :-Linear programming, Queuing Theory, Assignment Models, Network Analysis including PERT and CPM, Inventory Control techniques, Replacement Models in Operation Research, Simulation Techniques, Application of OR Software</p>
HE4.	Public Health Administration in India	<p>Historical aspects of public health, evolution of public health, recommendations of major committees starting from Bohre Committee recommendations and extent of their recommendations, framework of public health administration, principles of organization,</p> <p>Principles, Theories, and Pattern of Organizations: Hierarchy, span of control, unity of command, centralization vs decentralization, delegation, line-staff relationship, integration and convergence.</p> <p>Constitution of India, Directive principles of state policy, and various provisions relevant to health, health functions under center, state and concurrent list.</p> <p>Legal framework of health administration; Three tier system of health administration, local self-government in urban and rural areas, municipalities/corporations, Panchayat Raj Institution in Health, functions of executives,</p> <p>Program Planning- History of five years plans in health, Role of NITI Aayog in health planning.</p>

		National and International historical development such as Alma Ata Declaration, ICPD at Cairo, UN Conventions related to health, MDGs and SDGs etc
HE5.	Health Care Services in India	<p>Historical evolution of health services in India, Recommendations of various expert committees, and their influence on health services set-ups in India, Evolution of concept of Primary Health Care and Health for all in India, Center States relationships, Framework of health care system in states, Organizational structure & administrative aspects regarding functions of the govt. health care system at the central, state, district, PHC, CHC, peripheral areas as well as in urban areas, health organizations under Local Health Agencies/Panchayati Raj Institutions, Universal Health Coverage</p> <p>Conceptual understanding of public health, health promotion, disease control and promotion.</p> <p>Health care for women and children, adolescents and youths, school health services, mental health services, Health Care systems for Factories / Mines / Plantations.etc</p> <p>Health care delivery system in under Railways, Defense, ESIC, Public Sector Undertaking etc</p> <p>Role of NGO. sector in health care system. corporate and private health care systems., public private partnership for health service delivery.</p> <p>Intersectoral coordination and cooperation in health, Interface between health, population and development</p> <p>Role and functions of various apex health institutes like ICMR, NCDC, NIMHANS, NIPCCD, NIN, IIPS etc.</p> <p>Evolution of Nursing Services and its Administration in India. Organisation and functions of nursing services and education at National, State, District and Institutions: Hospital and Community, Community health Nursing</p>

		<p>theories and models</p> <p>Medical Ethics: Definition and Concept of Medical ethics, ethical considerations in patient care and community health management</p>
HE6.	International Health	<p>Health care services in developed and developing countries, International health agencies like WHO, UNICEF, Health Diplomacy, International Health Regulations, Globalization, International trade in health, Global burden of diseases, Health tourism, International health control measures like quarantine, airport management, port management.</p>
HE7.	National Health Programmes	<p>Details regarding administration, objectives, strategies, organizational, functional arrangements and progress in implementation as well as achievements of various National Health Programmes including National Health Mission, RMNCH+A and Family Planning, AYUSH, National Mental Health Programme, National Programme on Health Care of elderly, School health programme, National Disease Control Programmes, NPCDCS, Review of factors associated with the success / failure / stagnation of the present status of these National Health Programs,</p> <p>Examples of successful implementation of PRIs in health in States, Role of VHNDs, Mahila Mandals, Self Help Groups etc</p> <p>Nutrition: Food hygiene, nutritive value, nutritional assessment, nutrition requirements, nutrition policy and programme in India, role of inter-sectoral programme in nutrition.</p> <p>Nutritional problems: malnutrition-under and over nutrition, assessment of nutritional status in community, PEM, mineral and vitamin deficiencies, Food Toxin Diseases: Epidemic dropsy, Endemic Ascities, lathyrismmicro-nutrient malnutrition,</p>

HE8.	Health Management Information Systems (HMIS)	Health Management Information System (HMIS) in India: Evolution of HMIS India, Concepts of management information system analysis and design, Components of HMIS, Characteristics of good health management information system, MIS a tool to managerial control, HMIS in NHPs and NHM. Examples of HMIS functioning in country.
HE9.	Care of Special Groups & Community Rehabilitation Medicine	Tribal, Hilly, Deseret, Migrants, Elderly, Orphan & vulnerable children, Geriatrics Care, Palliative Care, Vulnerability factors in health, for the physically and socio economically challenged people, history, scope and need of rehabilitation, disability process, epidemiology of disability, Organization and administration of Rehabilitation Medicine Services. Principles of management of psychological and social problems., Laws related with PMR
Module IV: Medical Care and Hospital Administration		
HA1.	Hospital Organisations and Recent Trends	History and development of hospitals, principles of hospital administration; Definition, types, control, role and functions, Hospitals in India today-their number, types, size, distribution, ownership, utilization, issues &trends, Recent trends in hospital administration, managerial issues in hospitals of different sizes, challenges to hospital administrators, human resource management in hospital, hospital financing and cost reduction measures, pricing and user charges, hospital marketing, patient satisfaction
HA2.	Hospital Planning & Designing	Changing system of health services concepts in planning, designing and space, site surveys for planning a hospital, hospital buildings an over view, external architectural aspects, internal arrangements, Hospital hygiene, Lighting &Ventilation, Role of administrator in building a hospital

HA3.	Clinical Management Services	<p>Outpatient Department, Operating Department, In patient Department, Emergency, Operation Theatre, Labour room, Intensive and special care areas,</p> <p>Ward designing-general & specialized, Intensive Care Unit-general & specialized, Specialized departments like Nuclear Medicine, Physical Medicine, Burns, Paraplegic and Malignant Diseases etc., Treatment Centres.</p>
HA4.	Support Management Services	<p>Nursing care/services, Radiological and other imaging services, Hospital Laboratory services, Blood Transfusion services, Ambulance services, Pharmacy services, Central Sterile Supply Department (CSSD), Oxygen Manifold/ Concentrator, Dietary services, Linen and Laundry services.</p>
HA5.	Utility Services	<p>Housekeeping services, Hospital Engineering Services, Hospital Stores hospitals. Medical Records including medical transcription, admission, public relation, enquiry and registration, hospital establishment and offices, cafeteria services, welfare services, mortuary.</p>
HA6.	Medical Records and Hospital Management Information System (HMIS)	<p>Concepts of management information system, analysis and design, Need, importance and organisation of a medical record department, Historical Development of Medical Record, Uses and values of medical record, Flow of medical record, Format types – source & problem oriented, Legal importance: Consent, release of information, legal cases, medical record as legal document.</p> <p>Electronic Medical Record (EMR)</p>
HA7.	Quality Assurance including Medical Audit	<p>Quality concept, Verifiable standards and parameters in evaluation of quality, Quality Assurance, Total Quality Management, Quality Circle, Performance Review, Hospital statistics & quality control, Methods of medical audit and its benefits to the physicians, patients, hospitals and community</p>
HA8.	Legal Aspects of Hospitals.	<p>Broad introduction to medical jurisprudence and its application in hospitals, Consumer Protection Act and its application in hospitals, Law of tort, Different laws & Acts applicable to hospitals e.g. Drug & Cosmetic Act,</p>

		Organ Transplantation Act etc. ,
HA9.	Equipment and Material management	Demand estimation, Strategies of Hospital Equipment Planning and Selection, Purchase procedure, Installation and commissioning, Hospital Equipment Utilization & Audit, Hospital Equipment Repair and Maintenance
HA10.	Safe Hospital Initiative and Disaster Management	General safety, Fire safety, Hospital Hygiene, Hospital acquired infection, Definition, types, Components of Disaster plan- Pre-hospital & hospital Disaster preparedness, Disaster plan formulation & implementation
HA11.	Biomedical Waste Management	Hospital infection control, BMW management & handling rule, Segregation, Collection, Transportation, Disposal, Modern technology for handling BMW, Radioactive waste handling

E. TEACHING & LEARNING METHODS

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

- Orientation should be done within three months of joining of MD students. During orientation course, they should be exposed to the concepts of human behavior, research methodology including ethics, Statistics, Health Management including Economics, Health policies etc.
- Self-directed: atleast twice a week in which the student will present articles, abstracts from journals, seminars, group work, epidemiological and statistical exercises, case studies, family presentation by rotation
- Participation in scientific activities, participation in panel discussions, Symposia, workshops, conferences of the subject concerned.
- Journal Club : Critical appreciation and discussion of research articles in indexed journals
- Seminar: Discussion should be held on regular basis on current and vital topics of public health importance.
- Lecture/Discussion: Lectures on various topics by recognized teachers on regular basis. These should be interactive. The institution should also invite eminent speakers for lecture on new topics of public health importance.
- 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) or hospital utility, HMIS, MRD, support services or organizational structure and management. PG students will present the cases in presence of 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 health centers of identified institutions along with orientation in health administrative system.
- The PG student shall be required to participate in the teaching and training programme of post graduate diploma students and paramedical students.
- The PG student must attend MCI suggested training in Research Methodology during his tenure with record in log book.
- A postgraduate student would be required to present poster, to read paper at a national/state conference and to present 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. These activities should be done for atleast three times in three years to acquire skills.
- 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.
- Thesis: The protocol must be submitted within 6 months and completed thesis should be submitted one year before the University examination
- 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 with 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 with field visits will of one year duration. In this the student will be posted in various health centers, state headquarters, ministry of health, hospitals, institutes of national importance etc. Short duration posting in various camps, melas, public health emergencies, investigation of epidemics, implementation of National Health Programmes.

F. ASSESSMENT

I. **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 during each posting.

The assessment during the MD training should be based on:

- i) Journal based / recent advances learning
- ii) Patient based /Laboratory or Skill based learning
- iii) Self-directed learning and teaching
- iv) Departmental and interdepartmental learning activity
- v) External and Outreach Activities / CMEs
- vi) Epidemiology & biostatistics through solutions worked out for various simulation exercises, and epidemiological studies completed as research for short term studies, extra mural projects.
- vii) Education technology & behavioral change communication through health communication to a special group and documented lesson plans for diploma classes
- viii) Public health policy, planning, leadership and management through their analytical report and recommendations of the different components of management at the public health care units they are posted.

II. **SUMMATIVE ASSESSMENT**, i.e., 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

- a. Thesis shall be submitted at least one year 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:

- a. 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:

I Basic Sciences related to health administration (Module 1)	3 hrs. 100
II. Epidemiology and Research in Community Health (Module 2)	3 hrs. 100
III. Public Health Administration (Module 3)	3 hrs. 100
IV. Medical Care & Hospital Administration (Module 4)	3 hrs. 100

A candidate is required to obtain a qualifying minimum of 40% in each paper and in written papers on aggregate 50%.

3. **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:
 - a) **One long Family case from the community/ Hospital (100 marks) (60 min):** 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. **and /or** Brief case study of a live situation and drafting notes for parliamentary questions etc. and simulates material like tape recording of an administration situation requiring a decision; a written description of a hypothetical situation and analysis of in-basket material which the administrator received for decision making etc. will be used. This shall be conducted preferably in the community setting or hospital setting.
 - b) **Clinico-social case studies-Short cases –two (30 minutes) (100 marks) –** 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.
 - c) **Public Health Laboratory (Two) (30 marks) (30 min)**
 - Staining of smears, interpretation of common serological diagnostic tests, water, & milk analysis or interpretation of given results of any above tests.
 - d) **Problem on Epidemiology and Biostatistics (Five) (25 marks) (60 min)**
 - Based on situation analysis from communicable or non-communicable diseases, MCH & FP including demography. Environmental health including Entomology

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

e) Management Simulation Exercise (Time 30 min) (25 marks)

Simulation exercise to evaluate attainment of following competencies

- Manages programs within resource constraints and monitors program performance
- Develops strategies for determining priorities and prepares proposals.
- Applies basic human relations skills to the management of organizations, motivation of personnel, and resolution of conflicts
- Manages information systems for collection, retrieval, and use of data for decision-making
- Understands cost-effectiveness, cost-benefit and cost utility analysis.

f) Public Health Spots (5) (20 marks) (30 min): Identification and description of relevant public health aspects of the spotters/specimen by the student. Spotters shall be from Nutrition, Environmental health including Entomology & Occupational health, MCH & FP; Microbiology including parasites; vaccines, sera and other immunobiologicals.

g) VIVA-VOCE: 100 marks

- **Viva-Voce Examination: (60 Marks) (30 min)**
 - Students will be examined by all the examiners together about student's comprehension, analytical approach, expression and interpretation of data.
 - Student shall also be given case reports, charts for interpretation. It includes discussion on dissertation.
- **Pedagogy Exercise: (20 Marks) (30 min)**
 - A topic be given to each candidate along with the Practical Examination question paper on the first day. Student is asked to make a presentation on the topic on the second day for 20 minutes.
- **OSPE: 4 Stations (20 marks) (10 min each)**
 - Stations should evaluate competency relating to Public Health Microbiology/ Communication Skills/ Epidemiology and Research/ Environment Assessment (Public Health Chemistry)/ Clinical Diagnosis of Diseases of Public Health Importance

G. POINTS OF CONTACT

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