

PROPOSAL FOR :-

**MASTERS IN PUBLIC HEALTH
(MPH)**

SUBMITTED TO DELHI UNIVERSITY



आरोग्यम् सुखसम्पदा

THE NATIONAL INSTITUTE OF HEALTH AND FAMILY WELFARE

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1 PREAMBLE:

The National Institute of Health and Family Welfare (NIHFW), was established on 9th March, 1977 by the merger of two national level institutions, viz. the National Institute of Health Administration and Education (NIHAE) and the National Institute of Family Planning (NIFP). The NIHFW, 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 India call for capacity development at the levels of both the Central and State health systems. The need of the hour is therefore to place in position, qualified professionals who can skillfully plan, execute and monitor national health policies and programmes, supervise the public health workforce, fully assess the dimensions of public health issues, devise appropriate strategies to meet emerging managerial challenges in the health system, to work at community level for rural and urban population under national Health Mission (NHM) and to achieve Sustainable Development Goal (SDG) set by the United Nations General Assembly in 2015 for the year 2030.

2 RATIONALE:

Despite significant achievements over the years, Public Health challenges continue to stretch the existing resources, both in India and in the world. The countries, across the globe, strive towards achieving the Millennium Development Goals, yet the agenda remains unfinished. With the commencement of Sustainable Development Goals (SDG) era, a renewed thrust is required to maintain and improve upon the progress achieved so far.

The development of managerial competencies is presently not a part of the formal medical/para-medical educational system. The standard MD (Community Medicine) courses

offered at medical colleges impart the managerial skills and competencies expected from public health managers at sub-district, District or State level but the avenues for these MD professional are numerous including joining medical colleges. Most of the MD (Community Medicine) post graduates would not like to join the health systems at a junior level with lower salaries. Hence, there is an urgent need to devise programmes that would develop specific competencies related to Public Health Management and

impart knowledge, skills, and change attitudes to address & resolve key health management challenges.

There are also issues of Scale i.e the number of qualified public health personnel produced in various programmes is still quite small – typically, institutions like the Achuta Menon Centre for Health Sciences at Sri Chitra Tirunal, Trivandrum; the Tata Institute of Social Sciences, Mumbai; the Indian Institute of Health Management & Research, Jaipur etc, have a limited annual intake of participants in their 2 year public health/health administration programmes.

This course will be an attempt to prepare competent cadre of professionals who have a basic understanding of the various aspects of public health and are able to successfully apply this knowledge towards meeting public health challenges in Indian context.

3 LEARNING OBJECTIVES:

The course will help candidate to develop skills in the following areas:

- Analytical and assessment skills for collecting and interpreting information
- Policy planning and development skills to address public health challenges .
- Communication skills for advocacy, dissemination of public health data and information
- Financial planning and management skills for running public health programs in the country
- Leadership skills to lead teams of public health managers.

4 CORE AND ANCILLARY COMPETENCIES GAINED IN THE PROGRAM:

4.1 APPLY THE COURSE LEARNING TO THE PUBLIC HEALTH SYSTEM AND ITS CHALLENGES:

- a. Demonstrate adequate knowledge and skills to a wide range of public health topics
- b. Critically conduct the situational analysis and develop action plan for identified public health issues
- c. Develop workforce for taking public health related responsibilities in defined geographical areas
- d. Develop an understanding of the epidemiological transitions of programs specific to each State within the country in order to prioritize public health challenges for policy making

4.2 DEVELOP, IMPLEMENT AND EVALUATE KEY PUBLIC HEALTH POLICIES:

- e. Develop a capacity to apply conceptual framework to understand policy processes in health care
- f. Understand roles of supply and demand in policy making in health care
- g. Develop an understanding to facilitate inter-sectoral coordination and public- private partnership
- h. Critically analyse resource allocation for competing public health interests across programs
- i. Formulate context appropriate policies and design programs to address public health challenges, effectively

4.3 DEVELOP AND DEMONSTRATE COMPETENCY IN MANAGING HEALTH SYSTEMS AT DIFFERENT LEVELS:

- a. Identify immediate and long term health program goals at national, State and district levels
- b. Prioritize health issues in population
- c. Describe various managerial information systems and their application
- d. Describe program management plans in health
- e. Understand and apply core management principles for human resources in health
- f. Understand and apply program budgeting and economic evaluation
- g. Understand and apply quality assurance and improvement techniques in health care

4.4 DEVELOP COMPETENCY IN RESEARCH:

- a. Understand and apply ethical principles in research, evaluation and dissemination
- b. Develop competence to critically evaluate existing information and identify gaps

- c. Formulate and test research hypotheses in real world scenario
- d. Translate research knowledge for evidence based policy making

5. END OUTCOME IN TERMS OF ATTAINMENT OF THE LEARNER:

1. Apply contemporary ideas to influence program organization and management, problem solving and critical thinking in public health domain
2. Undertake operational research in institutional and field settings
3. Work in socially, culturally and economically diverse populations by being attentive to needs of vulnerable and disadvantaged groups and be well versed with existing health systems
4. Demonstrate qualities of leadership and mentorship
5. Be an effective member of a multidisciplinary health team
6. Demonstrate ethics and accountability at all levels (professional, personal and social)
7. Practice professional excellence, scientific attitude and scholarship
8. Demonstrate social accountability and responsibility
9. Be open to lifelong learning
10. The likely job opportunities for the MPH candidates would be:
 - a. Part of public health cadre
 - b. Epidemiologist
 - c. Research analyst/associate in Development partners, projects and NGOs
 - d. Programme managers under NHM
 - e. Reproductive health consultant
 - f. Data manager etc

6 ELIGIBILITY CRITERIA :

Since public health is interconnected and influenced by our surrounding, global institutions have wide eligibility criteria for undertaking the Masters in Public Health (MPH) programs. In the Indian context, we see a very important role for candidates from multiple professional backgrounds within MPH programs. Thereby, the eligibility

Criteria for MPH program at NIHFV will include both sciences as well as non-science graduates.

GRADUATES IN

- A) Medicine / AYUSH / Dentistry / Veterinary Sciences / B.Sc. Nursing (no experience is required)
- B) Statistics / Biostatistics / Demography / Population Studies / Nutrition / Sociology / Psychology / Anthropology / Social Work (At least 2 years of experience in health sector is mandatory).

6.1 DURATION OF THE COURSE:

This course is designed to be a 'two years' full time program including internship and dissertation.

6.2 NUMBER OF SEATS:

MPH course will be initially offered with an intake of 20 students at NIHFV.

7. COURSE STRUCTURE: DETAILED SEMESTER WISE BREAK UP AND TEACHING LEARNING METHODS AND ITEM WISE HOURS OF INSTRUCTION

The MPH course at NIHFV will comprise of 15 Core modules and four elective modules. **Four** elective streams comprising five modules each have been identified in addition to **15 Core** modules. A candidate will need to pass 15 Core (compulsory) modules, and five (5) elective modules of the chosen stream to successfully complete the program.

A. CORE MODULES (COMPULSORY FOR ALL STREAMS)

- a. Principles and practice of Public Health
- b. Introduction to health system and policy in Developing countries
- c. Health Management: Management Principles and practices
- d. Basic Epidemiology
- e. Basic Biostatistics
- f. Demography and population sciences

- g. Introduction to health economics
- h. Health promotions approaches and methods and evaluation
- i. Introduction to financial management and budgeting
- j. Social and behaviour change, effective communication in health care
- k. Reproductive, Maternal, Neonatal, Child Health and Adolescent Health (RMNCH+A) also to include Family Planning
- l. Introduction to health programme evaluation
- m. Principles of social research methods
- n. Environment and occupational health
- o. Law and ethics in public health

B. ELECTIVE STREAMS

EPIDEMIOLOGY

- i. Advanced Biostatistics
- ii. Advanced Epidemiology
- iii. Survey design and methods
- iv. Infectious disease epidemiology
- v. NCD epidemiology

Note: *Modules (i) to (v) compulsory for Epidemiology Stream*

HEALTH SYSTEM MANAGEMENT

- i. Strategic management in health care and Health Entrepreneurship
- ii. Advanced Operational research
- iii. Advanced Financial management and budgeting
- iv. Organizational management and services
- v. Effective advocacy and communication in Public Health

Note: *Modules (i) to (v) compulsory for Health Management Stream*

HEALTH PROGRAMME, POLICY AND PLANNING

- i. Health policy, process and planning
- ii. Programme planning and evaluation of public health programmes (including current NHPs)
- iii. Translating research into policy and health advocacy
- iv. Current issues in Health Policy: National and global perspective
- v. Role of non-governmental organizations in health care

Note: *Modules (i) to (v) compulsory for Health Programme, Policy and Planning Stream*

RMNCH+A

- i. Sexual and Reproductive health
- ii. Maternal and child health
- iii. Adolescent health
- iv. Gender and health
- v. Public health nutrition

Note: *Modules (i) to (v) compulsory for RMNCH+A Stream*

C. INTERNSHIP

D. DISSERTATION

Suggested calendar of activities

(1 month ~ 100 teaching hours @ 5 hours per day* 5 days a week) (1 credit = 35 teaching hours) Breaks to be calculated as applicable

Semesters	Months	In/out Campus	Approximate division of Teaching/practical hours	Teaching hours	Practical hours
Semester 1	6 months	In campus classes	~450	150	300
Semester 2	4 months	In campus classes	~300	100	200
	2 months	Internship	~75		75
Semester 3	6 months	In campus classes	~450	150	300
Semester 4	2 months	In campus classes	~150	50	100
	4 months	Research, submission and defence dissertation	350		

THE SUGGESTED ORGANIZATION OF MODULES IS AS FOLLOWS:

SEMESTER 1 MODULES
Principles and Practices of Public Health
Introduction to Health System and Policy in Developing Countries
Health Management : Management Principles and Practices (Strategic management)
Basic Epidemiology
Basic Biostatistics
Demography and Population Sciences
SEMESTER 2 MODULES
Introduction to Health Economics
Health Promotion Approaches and Methods
Introduction to Financial Management and Budgeting
Social and Behaviour Change, Effective Communication in Health Care
SEMESTER 3 MODULES
Reproductive, Maternal Health, Child Health and adolescent (RMNCH+A)
Introduction to Health Programs and evaluation
Principles of Social Research Methods
Environment and Occupational Health
Law and Ethics in Public Health
SEMESTER 4 MODULES
Elective Stream modules (5)

COURSE CREDIT AND TEACHING HOURS:-

S No.	COURSE	Credits	Teaching Hours
A	CORE MODULES		
(a)	Principles and Practices of Public Health	1.5	52.5
(b)	Introduction to Health System and Policy In Developing Countries	2	70
(c)	Health Management : Management Principles and Practices (Strategic management) and Introduction to Operational Research	2.0	70
(d)	Basic Epidemiology including Non-Communicable and Communicable diseases	2.5	87.5
(e)	Basic Biostatistics	2.5	87.5
(f)	Demography and Population Sciences	1.5	52.5
(g)	Introduction to Health Economics	1.5	52.5
(h)	Health Promotion Approaches and Methods	1.5	52.5
(i)	Introduction to Financial Management and Budgeting	2	70
(j)	Social and Behaviour Change, Effective Communication in Health Care	1.5	52.5
(k)	Reproductive, Maternal Health, Child Health and adolescent (RMNCH+A)	1.5	52.5

(l)	Introduction to Health Programme design and evaluation	2.5	87.5
(m)	Principles of Research Methods	2.5	87.5
(n)	Environment and Occupational Health	1.5	52.5
(o)	Law and Ethics in Public Health	1.5	52.5
TOTAL FOR CORE MODULES		28	980
B	ELECTIVE MODULES	10	350
B1	Epidemiology		
i.	Advanced Biostatistics	2	70
ii.	Advanced Epidemiology	2	70
iii.	Survey Design and Methods	2	70
iv.	Infectious Disease Epidemiology including live Outbreak Investigation	2	70
v.	NCD Epidemiology	2	70
TOTAL FOR ELECTIVE MODULE		10	350
B2	Program Policy and Planning		
i.	Health Policy, Process and Planning	2	70
ii.	Programme Planning and Evaluation of Public Health Programmes (including current NHPs) – (1 week) – All Programs	2	70
iii.	Translating Research into Policy and Health Advocacy	2	70

S No.	COURSE	Credits	Teaching Hours
iv.	Current Issues in Health Policy: National and Global Perspective	2	70
v.	Role of Non-Governmental Organization in Health Care	2	70
TOTAL FOR ELECTIVE MODULE		10	350
B3	Health Management		
i.	Strategic management and Entrepreneurship in health care	2	70
ii.	Operational Research (Advanced)	1.5	52.5
iii.	Advanced Financial Management and Budgeting	2	70
iv.	Organizational Management and Services	2.5	87.5
v.	Effective Communication in Public Health	2	70
TOTAL FOR ELECTIVE MODULE		10	350
B4	RMNCH+A		
i.	Reproductive and Sexual Health	2	70
ii.	Maternal and child Health-Advanced	2	70
iii.	Adolescent Health	2	70
iv.	Gender and Health	2	70
v.	Public Health Nutrition	2	70
TOTAL FOR ELECTIVE MODULE		10	350
	Internship and Dissertation		
C	Internship	2	70
D	Dissertation	10	350
Total (Core modules +one elective stream + Internship + Dissertation)		50	1750

The course would start with an orientation week. During the orientation week, the course is expected to provide the candidate an overview of professionalism, importance of professional values and communication including;

- Professional values- Integrity, objectivity, professional competence and confidentiality.
- Core values- Accountability, Altruism, Compassion/ caring, excellence, integrity, professional duties, social responsibility
- Personal values- ethical or moral values
- Attitude and behaviour- professional behaviour, treating people equally
- Code of conduct, professional accountability and responsibility, misconduct
- Cultural issues in the healthcare environment
- Differences between the various healthcare professions and importance of team efforts
- Entry level health care practitioner, direct access, autonomy in profession, practitioner of medical practice and evidence based practice.

C. INTERNSHIP:

Two months' internship will be undertaken by all the candidates with an aim to integrate learning and practice in an active public health organization. This can be undertaken at governmental or non-governmental public health organizations or program management units. The internship should include the candidate's role and support in assessing, monitoring, or conducting surveillance of health problems/services in a population; research on population-based health problems; developing and/or implementing policies and intervention strategies to meet public health needs. Overall it should contribute to the organization, and should help in understanding public health management and coordination and gaining personal confidence and leadership experience. Although finding a suitable internship opportunity lies with the candidate him/herself, mentors will facilitate the process. After the completion of 2 months of internship, candidates will be expected to submit a brief summary of public health program/challenge dealt with and solution proposed/implemented by the candidate at the end of second semester.

Candidates should submit their project plan and preliminary time scale with their chosen topic for dissertation at the end of the internship to their mentor/tutor to seek appropriate approvals before embarking on the full investigation and project. **The internship is worth two (2) credits.**

D. DISSERTATION

At the end of the fourth semester, candidates will submit their dissertation on previously chosen and approved topic for assessment. This will be a 10 credit course. The dissertation will be evaluated by an internal examiner (50% weightage) and an external examiner (50% weightage) including a viva-voce during the final examination.

Each participant, working under close guidance of a faculty advisor, will develop a major project as part of the course work. The project will be carried out over a period of 4 months constituting the final semester. The participant will be supervised by a faculty advisor. The experience has three primary components: a protocol, a written project paper, and an oral presentation. The participant will be evaluated concurrently on the study protocol, while the study is in progress and terminally on the dissertation.

The protocol will be framed between the student and the faculty advisor and will be preferably based in the setting of the participant's area of functioning in the health service setup. The protocol will be formally designed and the draft will be submitted for review. The review will be conducted by a formally designated committee for this process and will perform an ethical and a feasibility review of the work plan. Necessary changes if any will be conveyed to the participant who can be requested to resubmit to a repeat review till the approval is obtained.

The study plan after approval will be executed by the participant during the allotted four months (2 months for data collection & 2 month for analysis and documentation) for dissertation work. Any difficulties that arise during the dissertation work will be reported and suggestions sought from the faculty advisor.

The dissertation writing will include the following headings; Introduction, objectives, review of literature, management challenges, methodology, results and observations, discussion and conclusion/ recommendations.

8. EVALUATION PROCEDURE AND COMPONENTS OF EVALUATION:

Participant evaluation will comprise of internal evaluation during course work and performance in the final examinations.

- Internal evaluation will be conducted at the end of each of the four semesters. This will comprise of evaluation of the theoretical knowledge and daily participation/ application skills of the candidates.
- The daily participation/ application skills of the candidates worth 100 marks will be assessed by the course facilitators. This assessment would be based on class participation, assignments, class presentations or a course evaluation test.
- The theoretical skills will be assessed by a semester-ending examination of 100 marks that covers the modules taught during the semester.
- Thus, there will be internal evaluation worth 200 marks (100 theory + 100 daily participation/ application skills) at the end of each of the four semesters. This will total to 800 marks (400 theory and 400 practical) after 4 semesters during the entire course.
- The marks will then be expressed out of 400 (200 for theory and 200 for daily participation & application) for the final marks. Thus the internal Assessment would amount to 33.3% of the final marks. The candidate must obtain a minimum of 50% separately in theory and practical (internal Assessment (200 out of 400)) to be eligible to sit for the final examination.
- Dissertation work will be allotted 200 marks and a student will be permitted to appear for the final term examination only after he/ she has scored 50% in his/ her dissertation.
- The final examination will comprise of a theory exam and a practical assessment/ viva-voce.
- 4 theory papers of 100 marks each (constituting 400 marks) will be administered.
- Practical exercises of 30 marks each will be administered in Epidemiology, Biostatistics, Health Management and Health Promotion/Communication (constituting 120 marks) will be administered.

- A viva-voce of 80 marks (40 marks general viva and 40 marks from the dissertation) will also be conducted.
- Thus, the final examination will be worth 400 marks for theory and 200 marks for practical assessment/ viva-voce. The marks of internal assessment from theory and application skills will be added to the final examination marks at this stage.
- Thus, participants will be graded out of 1200 marks at the end of 1 year (600 marks for Theory, 400 marks for practical assessment and 200 marks for dissertation work).
- A participant will have to secure at least 50% separately in the theory and practical assessment for obtaining the degree. The participants securing more than 75% will be deemed to have obtained the degree with distinction.
- The final breakup of evaluation marks (1200 marks) would be as follows:
 - Theory: Total 600: 200 for internal assessment and 400 for final examinations (four papers)
 - Practical: Total 400: 200 for internal assessment and 200 for final examinations (120 for exercises and 80 for viva voce)
 - Dissertation: 200 marks
 - Four examiners will conduct the practical examination.
 - Two examiners out of four will be internal examiners from the institute and two would be external examiners.

DETAILS OF MODULES UNDER MASTERS IN PUBLIC HEALTH

A. CORE MODULES (COMPULSORY)

1. PRINCIPLES AND PRACTICES OF PUBLIC HEALTH:

- Public Health- what it is; causation, prevention, social determinants of health, health systems and health policy
- Health equity
- Environments and health
- Public Health action

2. HEALTH SYSTEM AND POLICY IN DEVELOPING COUNTRIES:

- Basic theoretical approaches and concepts used in policy analysis
- Understanding of global and national health policies, including current trends
- Analyze the political system within which policies are made
- Contextual factors that influence to policy change
- Changing global health policy environment

3. HEALTH MANAGEMENT: MANAGEMENT PRINCIPLES AND PRACTICES:

- Basic knowledge of health care systems and the environment in which health care managers and providers function
- Health Programmes: planning, implementation, Monitoring and Evaluation
- Components of strategic management
- Project management
- Behavioral aspects of governmental, faith based and other non - governmental organizations
- Introduction to logistics management
- Introduction to human resource management
- Quality: define quality, its importance in public health, measures to manage and improve equality
- Introduction to Operational Research
- Risk management
- Effective management of Health Management Information Systems (HMIS) and its application
- Public Health Leadership

4. BASIC EPIDEMIOLOGY INCLUDING COMMUNICABLE AND NON-COMMUNICABLE DISEASES:

- History of Epidemiology
- Measurements in Epidemiology
- Incidence and prevalence

- Causation and association
- Measures of association
- Outline of study designs (including cross sectional study design, case control study design, cohort study design and randomised control trials)
- Introduction to confounding and bias
- Screening tests- validity and reliability methods
- Disease surveillance
- Outbreak investigation
- Communicable and non-communicable diseases

5. BASIC BIOSTATISTICS:

- Types of variables
- Scales of measurement
- Measures of central tendency
- Measures of dispersion
- Types of distribution
- Bayes theorem
- Sample/sampling and population distribution
- Central limit theorem
- Type1 and type 2 error and power calculation
- p-value and 95% confidence Interval
- Parametric and non-parametric test
- How to choose the statistical test
- Correlation
- Basics of regression
- One statistical software (SPSS/Stata)

6. DEMOGRAPHY AND POPULATION SCIENCES:

- Factors affecting population
- Measures of fertility and mortality
- Standardization methods
- Population growth and projection
- Demographic transition
- Implication of rapid population growth
- Demographic dividend or disaster
- Life table
- Urbanization

7. INTRODUCTION TO HEALTH ECONOMICS:

- Key concepts of economics, micro and macro economics
- Strategizing and prioritizing within scarce resources (decision making)
- Determinants of demand, supply and costs of production
- Concepts of efficiency, effectiveness, equity, elasticity of demand, costing, production, marginal cost analysis, and opportunity cost
- Market model, market failure, and the roles and limitations of markets in health care
- Universal health coverage and role of health care financing
- Principles and application of economic evaluation in health care including Cost Benefit Analysis (CBA) and Cost Effective Analysis (CEA)

8. HEALTH PROMOTION APPROACHES AND METHODS:

- Introduction to health promotion
- Foundations for health promotion
- Social determinants and health promotion
- Communication strategies for health promotion
- Overview of current national health policies, national health programs their health promotion strategies
- Community need assessment for designing an effective health promotion activity
- Evaluation of health promotion plans
- Substance abuse epidemic in parts of India
- Smokeless (chewable) and smoked tobacco addictions in parts of India
- Drunken driving: social and personal responsibilities and control measures
- Stigmatization of health conditions
- Behavioral issues in children and teens: substance abuse, suicide patterns
- TV and other media as influencers of healthy/non healthy lifestyle

9. INTRODUCTION TO FINANCIAL MANAGEMENT AND BUDGETING

- Introduction to financial management
- Tools of financial analysis and planning in health care
- Cash flow, accounts and balancing budgets
- Cost and dividends for health outcomes
- Effectiveness and efficiency
- Sustainability of Health Programs

10. SOCIAL AND BEHAVIOUR CHANGE, EFFECTIVE COMMUNICATION IN HEALTHCARE:

- Introduction on sociological perspectives on health
- Key concepts in sociology as applied to the study of health
- Social and cultural processes impacting health status and access to health services
- Introduction to behaviour change theories and communication
- Health and human behaviour
- Medical anthropology
- Implementing and managing social and behaviour change communication in public health: Information Education and Communication (IEC), Inter Personal Communication (IPC), Behaviour Change Communication (BCC), Social Behaviour Change Communication (SBCC)
- Human behaviour and communication, its role in public health problems and solutions
- Public speaking
- Verbal vs. Non-verbal communication
- Various forms of written communication
- Evidence based advocacy
- Consensus building
- Using audio visual aid in communication
- Etiquettes and professionalism

11. INTRODUCTION TO RMNCH+A:

- Introduction to the RMNCH+A services – historical context, evolution, coverage and innovations
- Various components of service delivery under RMNCH+A (including GoI programs)
- Maternal, New-born and Child Health (MNCH) services in the country
- Adolescent health
- Role of gender in public health programs
- Evolution of RCH services in the country – Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)
- Innovations in service delivery
- Framework for evaluation of services

12. INTRODUCTION TO DESIGN AND EVALUATION OF PUBLIC HEALTH PROGRAMS

- Concepts underlying the design of health programs
- Basic approaches to the design, analysis and interpretation of health programs
- Communicate in public health research
- Framework to evaluate the effectiveness of health programme implementation
- Case Study: how to integrate a package of care for a specific problem into a platform of healthcare delivery
- Process, outcome and impact evaluation

13. PRINCIPLES OF RESEARCH METHODS:

- Objectives of research
- Research design
- Ethical issues in research
- Tools and Measurements in research
- Sample size and sampling
- Understanding and analysis of
 - Qualitative data and research
 - Quantitative data and research
 - Mixed methods
- Public health surveillance and research

14. ENVIRONMENT AND OCCUPATIONAL HEALTH:

- Theories and history of environmental health
- Environmental health policy and legal mechanisms in a national and international context
- Ecosystems in various settings (linking the built environment, transport, housing and green space to human health)
- Environmental pollution, waste disposal and treatment
- Lifestyle and dietary effects on health, food safety and sanitation
- Occupational Health: Hazards at workplace and work safety; Prevention of occupational hazards; Laws related to occupational health; Various government and other schemes for working population in India
- Climate Change & Health
- Biomedical Waste Management
- Management of environmental hazards, natural disasters
- Central Pollution Control Board (CPCB) guidelines
- Environmental health impact assessment

15. LAW AND ETHICS IN PUBLIC HEALTH

- Public Health laws and ethics
- Human rights in public health
- Role of governments in managing health of people
- Public health regulations in Indian context
- Public health information and privacy
- Research ethics in public health
- Regulations during emergencies and outbreaks
- Addressing newer challenges: Bioterrorism, conflicts and emerging infectious diseases
- Public Health laws in global economy
- Global health hazards and security
- Different forms of power, influential to policy making
- Concept of governance and institutions
- Different theories useful in policy analysis
- Political nature of evidence for policy making in health
- Written and verbal competence in communicating evidence to inform policy

B. ELECTIVE MODULES

STREAM B1: EPIDEMIOLOGY

I. ADVANCED BIOSTATISTICS:

- Principles of regression
- Methods of regression
- Linear regression
- Logistic regression
- Poisson regression
- Cox proportional hazards regression
- Regression diagnostics
- Introduction to multilevel modeling
- Introduction to data imputation
- Choosing the best models
- Longitudinal data analysis
- Survival analysis
- Time lag regression (ARIMA models)

II. ADVANCED EPIDEMIOLOGY:

- Directed acyclic graphs and conceptual framework
- Confounding bias and methods to reduce confounding

- Selection bias
- Information bias
- Measures of validity and reliability
- Nested study designs
- Advanced designs in clinical trials
- Systematic reviews and meta-analysis overview
- Epidemiology and management of Vector Borne Diseases
- Health measures following disasters
- Various public data sources: CRS, SRS, Census, NFHS, DLHS, HMIS, MCTS, etc.

III. SURVEY DESIGN AND METHODS:

- Pre survey formative research
- Sampling and sample size calculations
- Ethical issues in surveys
- Tool development
- Conduct of surveys
- Quality control and assurance in surveys
- Survey data analysis
- Identify appropriate research designs for a range of questions in health
- Describe the steps involved in planning and conducting a research project
- Evaluate the strengths and weaknesses of various data collection methods

IV. COMMUNICABLE DISEASE EPIDEMIOLOGY:

- Recognize the burden of communicable diseases (CD) affecting the population
- Examine factors contributing to the persistence of infectious diseases
- Understand reasons for emergence and re-emergence of infectious diseases
- Key concepts covered are:
 - Incubation periods
 - Epidemic patterns
 - Modes of transmission
 - Transmission dynamics
 - Measures of infectiousness
 - Secondary attack rates
- Analyze the transmission dynamics of diseases and design appropriate control measures
- Apply basic infectious diseases epidemiological skills to address major emerging and re-emerging communicable diseases
- Surveillance: Case in point: Integrated Disease Surveillance Program (IDSP)
- Epidemiology of common communicable diseases like TB, Malaria, Leprosy, Polio, STIs, AIDS, Meningococcal meningitis, Hepatitis B, and Measles (mathematical models of infection dynamics, outbreak

investigation and surveillance, schedules, adverse reactions, contraindications, vaccine efficacy, impact assessment)

- Live outbreak investigation
- Adverse Event Following Immunization (AEFI) investigation

V. NON-COMMUNICABLE DISEASES (NCD) EPIDEMIOLOGY:

- Describe and understand the epidemiology of NCDs
 - Cardiovascular diseases
 - Hypertension
 - Diabetes mellitus
 - Cancers
 - Mental health
 - Stroke
 - Burns/trauma/ accidents etc.
- Comprehend the upstream and downstream determinants of NCDs
- Understand the Individual approaches/or high-risk approaches and population based/ or public health approaches to prevent NCDs
- Recognize the risk factor approach to prevent non-communicable diseases
- Comprehend the Population based/public health approaches to prevention of common NCD risk factors (physical inactivity, tobacco and unhealthy diet)
- Familiarize with the current projects on targeting the prevention of NCDs, including, innovations in prevention
- How prevention of NCDs interlinks with Communicable diseases. How women and child health, health of the girl child links to prevention of NCDs
- Recognize Economic burden of NCDs and benefits of prevention
- Comprehend how sustainable development and prevention of NCDs go hand in hand
- Comprehend the power of policy and role of environment in the prevention of NCDs
- Population-based screening
- Surveillance of cancers including cancer registry

STREAM B2: HEALTH PROGRAMME, POLICY AND PLANNING

I. HEALTH POLICY, PROCESS AND PLANNING:

- Policy making: key components
- Policy framework

- Stake holders in policy making
- Effects of different interest and advocacy groups in influencing health policy
- Translating research in policy making
- Effects of national and international affairs on health policy
- Introduction to different national population, disease control, tobacco control, nutrition, maternal and child health policies
- Short term versus long term policies
- Resources allocation to optimize health
- Using research and data to drive good policy making

II. DESIGN AND EVALUATION OF PUBLIC HEALTH PROGRAMS (INCLUDING CURRENT NHPS):

- Concepts underlying the design of health programs;
- Basic approaches to the design in health programmes, with a focus on low resource settings
- analysis and interpretation of studies/programs;
- Communication in conducting public health research
- National health programmes in India (including goals, objectives, purposes, organization, man power, sources, activities, roles and responsibilities)

III. TRANSLATING RESEARCH FOR HEALTH POLICY AND ADVOCACY:

- Different forms of power influential to policy making
- Concepts of Governance and Institutions
- Different theories useful in policy analysis
- Political nature of evidence for policy making in health
- Written and verbal competence in communicating evidence to inform policy
- Critical appraisal of issues in health policy and financing

IV. CURRENT ISSUES IN HEALTH POLICY: NATIONAL AND GLOBAL PERSPECTIVE:

- Theory explaining public health action, its evolution and application in health policy
- Methods of assessing the health impact of different types of policy; national and global perspective
- Assessing health impacts of different policies across sectors
- Impact of health threats and interventions to counter health threats including crisis management

V. ROLE OF NON-GOVERNMENTAL ORGANIZATIONS (NGOS) IN HEALTH CARE:

- Health service delivery and program Implementation
- Research and evidence generation

- Training and education
- Inter-sectoral coordination in health including Public Private Partnership
- Advocacy and planning in health care

STREAM B3: HEALTH SYSTEM MANAGEMENT

I. STRATEGIC MANAGEMENT, INNOVATIONS AND ENTREPRENEURSHIP IN HEALTHCARE

- Strategy: various definitions
- Major concepts and frameworks in strategic management: SWOT, experience curve, portfolio theory, value chain
- Strategic thinking and decision making
- Strategic planning: Environmental, scenario, implementation and evaluation
- Sustainability
- Various sources for financing a new venture: finalize your target audience
- Preparing a business speech, elevator pitch
- Innovations in public health
- Health informatics, e-Health
- Telemedicine, m-Health
- Conflicts management and negotiations in business world
- Business modeling: preparing your own business model
- Peer review of individual business model

II. ADVANCED OPERATIONS RESEARCH

- History of operation research and seven stages of OR
- Safety, Acceptability, Feasibility and Effectiveness (SAFE) in designing Public Health Interventions
- Field interventions and field trials
- Stage 1: Formulate/define organizational problem
- Stage 2: Observe the system
- Stage 3: Create a mathematical model of the problem
- Stage 4: Model validation and application to the problem
- Stage 5: Identification of a suitable alternative
- Stage 6: Results discussion and conclusion
- Stage 7: Implementation and evaluation of the recommendation

III. ADVANCED FINANCIAL MANAGEMENT AND BUDGETING

- Introduction to financial management
- Tools of financial analysis and planning in healthcare
- Cash flow, accounts and balancing budget
- Cost and dividend for health outcomes
- Effectiveness and efficiency

- Sustainability of health programs

IV. ORGANIZATIONAL MANAGEMENT AND SERVICES

- Components of organization: Purpose, Coordination, Division of labour and Hierarchy
- Project management lifecycle
- Setting common goals and objectives
- Analytical thinking
- Risk identification and control
- Leadership
- Priority setting and resource allocation
- Why organizations fail? learning from case stories

V. EFFECTIVE COMMUNICATION IN PUBLIC HEALTH:

- Public speaking
- Effective Communication: Verbal versus Non – verbal communication
- Various forms of written communication
- Evidence based advocacy
- Consensus building
- Using audio-visual aid in communication
- Etiquettes and professionalism

STREAM B4: RMNCH+A

I. REPRODUCTIVE AND SEXUAL HEALTH

- Fundamentals of reproductive biology
- Adolescent Sexual and Reproductive Health
- Understanding Reproductive Health Policy
- Family Welfare and Reproductive Health measures
- Reproductive Health programs in India

II. MATERNAL, NEWBORN AND CHILD HEALTH (MNCH):

- Introduction to maternal, new-born and child health programs and their behavioral basis
- Historical developments in MCH in India
- Reproductive & Perinatal Epidemiology
- Prenatal and Infant Growth and Development
- Issues in the Reduction of Maternal and Neonatal Mortality
- Preventing peri-natal and infant mortality
- Infectious Disease and Child Survival
- Nutrition and Growth in Maternal and Child Health
- Legislations and programs in MCH

III. ADOLESCENT HEALTH:

- a. Overview of population health approaches for adolescents
- b. Adolescent Health and Development
- c. The Social Context of Adolescent Health and Development
- d. International Adolescent Health
- e. Adolescent Health status in India
- f. Adolescent Health Development - policy and systems
- g. Health issues specific to adolescents: anemia, teenage pregnancy, menstrual hygiene, obesity, mental health promotion and illness prevention, substance use prevention, violence, media etc.

IV. GENDER AND HEALTH:

- a. Define concepts - Gender, vulnerable populations, gender equality and equity and emerging issues
- b. Understand the difference between equity and equality
- c. Understand different forms of social exclusion
- d. Explain the difference between sex and gender and how these variables, combined with other forms of social exclusion impacts on health
- e. To increase understanding of the importance, benefits and urgency to identify and reduce barriers and address the needs of women and socially excluded groups, and promote their agency in the context of accessing health care and related information
- f. To increase understanding of the inter- sectionalism between gender and other types of social exclusion/inclusion and patients' experiences in accessing and utilizing health services and the impacts on uptake and utilization of services
- g. To increase understanding of the realities of discrimination from the grass root perspective
- h. To identify good practices in Gender and Social Inclusion (GSI) within India
- i. To become familiar with toolkits for including GSI in public health research, programs, policies and advocacy

V. PUBLIC HEALTH NUTRITION

- a. Appreciate the basic concepts and principles of foods and nutrition relevant to human health
- b. Summarize population based dietary and nutritional recommendations
- c. Define the concept, purpose and scope of Public Health Nutrition
- d. Understand the definition, utility and applications of epidemiology in nutritional sciences
- e. Recognize the role of community nutrition in improving human health
- f. Utilize suitable data and assessment methodologies to conduct community needs assessment
- g. Recognize the pillars of a healthy community

- h. Identify the most relevant nutrition concerns in the community at present and enlist strategies for their prevention and management (Adolescent, Women, Maternal and child under-nutrition, nutrition transition, over-nutrition and chronic diseases)
- i. Demonstrate an understanding of principles of nutrition education and enlist the steps of developing nutrition education programs
- j. Demonstrate an understanding of project planning and management in nutrition programmes
- k. Appreciate inter-sectoral nature of nutrition and food policy
- l. Enlist the features of various ongoing nutrition programs
- m. Under/over nutrition

9. ADMISSION PROCESS:

Applications for the course would be invited by advertising in leading newspapers and websites. There will be qualifying examination conducted for the said course followed by an interview conducted by a board constituted at NIHFWD/Delhi University.

The test will be multiple choice questions (MCQ) based exam with maximum marks of 100, to be completed in 60 minutes. The test will have 40% weightage in the final merit list. The passing marks for the MCQ exam will be 40 out of 100 (40%). Based on the passing marks, the students will be called for an interview, scheduled during next day/subsequent days. The interview will have 60% weightage in the final merit list.

Indicative Syllabus/themes for the MCQ test will include the following:

1. Basic human biology and common diseases (50%):

- a. Concept of health & disease
- b. Epidemiology
- c. Screening
- d. Communicable and non communicable disease
- e. Environment & health
- f. Medical entomology
- g. Occupational health
- h. Health information & biostatistics
- i. Demography
- j. Sociology
- k. Communication health education
- l. Health planning and management
- m. International health
- n. Organ systems
- o. Reproductive and child health
- p. Common diseases and symptoms
- q. Miscellaneous

2. Analytical and verbal ability (25%):

- a. Aptitude
- b. Logical reasoning
- c. Verbal ability
- d. Basic computer skills

3. General Awareness (25%):

- a. Political
- b. Economic
- c. Business
- d. Society
- e. Culture
- f. Health Programs

10. ADMISSION FEES AND COURSE FEES:

The proposed fee structure for mph candidates:

- Prospectus Fee Rs.500/-
- Annual tuition fee Rs. 1.25 lakhs (Total Rs. 2.5 lakhs for 2 years.)
- Boarding and lodging (optional) Rs. 1.25 lakhs/year

11. PREPAREDNESS OF NIHFV:

1. NIHFV is located in South Delhi (adjacent to JNU, IIT, R K Puram) in Munirka. It is a beautiful campus and its buildings are named as Administrative Block, Academic Block, Teaching Block etc. spread over approx. 32 acres of land.
2. The Institute has one Auditorium which can accommodate 350 persons at a time. Academic block has two computer labs (with the capacity of 52 desktop computers) and a video conferencing hall.
3. National Documentation Centre (NDC) has 10 rooms and 1 Conference Hall (with seating capacity 80) furnished with floor carpeting, furniture and all fixtures. NDC has display system of Journals and arrival of new publications -Books and Journals, Census of India, Publications and other special Publications (UN, WHO, etc.) Sitting arrangement of users has been classified according to the different types of literature - books, journals and newspapers respectively. Up-to-date collection of over 70,000 documents including books, periodicals, technical and research reports, conference proceedings, modules and other non-book materials is available.

4. With commissioning of newly constructed International Hostel more than 150 persons can be provided boarding and lodging in the Institute Hostel and Guest House facilities. The Institute is having a residential campus with 192 Quarters for different categories.
5. There are 49 sanctioned faculty positions from which 20 are presently in position, 5 are leading to join as soon as possible and rest in pipe line of selection process. In addition part time consultants are also present who are mainly involved in teaching and training program running in the institute consistently.
6. 50-70 different courses are running in this institute in which M.D in Community Health and Administration, M.D diploma in Hospital Administration, diploma in PGDPHM (Post Graduate Diploma in Public Health Management are in regular mode and Post Graduate Diploma In Hospital management, Health and family Welfare Management, Health Promotion, Health Communication, Public Health Nutrition, Applied Epidemiology, Professional Development Courses are in Distance Learning Mode.

12. TEACHING METHODS:

This programme will be interdisciplinary both in its content and teaching. It will utilize a basket of teaching/learning techniques such as simulation exercises, Lecture discussion, group discussion, tutorial, demonstration, case studies, role play, collaborative learning, hands-on training on computers, assignments, visits to organizations of public health interest, field work, practical and field projects. Apart from class room teaching students will be actively involved in seminars and Journal clubs. Faculty with diverse backgrounds, national and international experience combined with a breadth and depth of public health experience would be engaged to impart teaching learning experiences.

LIST OF ABBREVIATIONS

AEFI	Adverse Event Following Immunization
AIDS	Acquired Immuno-Deficiency Syndrome
BCC	Behavior Change Communication

CBA	Cost Benefit Analysis
CEA	Cost Effective Analysis
CD	Communicable diseases
CPCB	Central Pollution Control Board
CRS	Civil Registration System
DLHS	District Level Health Survey
GSI	Gender and Social Inclusion
HMIS	Health Management Information System
IDSP	Infectious Disease Surveillance Program
IEC	Information Education and Communication
IPC	Inter Personal Communication
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MCTS	Mother and Child Tracking System
MDG	Millennium Development Goals
MNCH	Maternal, New-born and Child Health
MPH	Master's in Public Health
NCD	Non Communicable Diseases
NFHS	National Family Health Survey
NHP	National Health Policy
OR	Operational Research
PHE	Public Health Education
PPP	Public Private Partnership
RMNCH+A	Reproductive, Maternal, Newborn, Child, and Adolescent health
SBCC	Social Behaviour Change Communication
SDG	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
SRS	Sample Registration Survey
STI	Sexually Transmitted Infections
SWOT	Strength, Weakness, Opportunities and Threats
TB	Tuberculosis
SAFE	Safety, Acceptability, Feasibility and Effectiveness (SAFE)