

**JAWAHARLAL INSTITUTE OF POSTGRADUATE  
MEDICAL EDUCATION & RESEARCH  
(JIPMER)  
PUDUCHERRY**



**MASTER OF PUBLIC HEALTH (MPH)  
CURRICULUM**

**2021**

## TABLE OF CONTENTS

<b>Sl. No.</b>	<b>TITLE</b>	<b>Page No.</b>
<b>1</b>	About JIPMER and Department of Preventive and Social Medicine	3
<b>2</b>	Course details	4
<b>3</b>	Syllabus	8
<b>4</b>	Course and examination regulations	28
<b>5</b>	Model question papers	30

## **JIPMER**

Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry (JIPMER) under Government of India since the year 1956, is one of the leading Medical Institutions of India. Spread over a sprawling 195-acre campus in an urban locale of Puducherry (formerly Pondicherry), JIPMER is 170 kms by road from Chennai.

JIPMER has been declared as an “Institution of National Importance” by an Act of Parliament, JIPMER, Puducherry, Act, 2008. A copy of the Act was Gazette notified on 14-7-2008 to enforce this Act. Prior to this, the Institute was functioning under the administrative control of Directorate General of Health Services, Ministry of Health and Family Welfare, New Delhi. The Institution is now empowered to award Medical Degrees under the clauses 23 & 24 of the said Act. Such Degrees shall be deemed to be included in the schedules to the respective Acts governing Medical Council of India/National Medical Commission, Indian Nursing Council, and Dental Council of India, entitling the holders to the same privileges as those attached to the equivalent awards from the recognized Universities of India.

JIPMER imparts Undergraduate (UG), Postgraduate (PG) and Super Specialty Medical Training through a large hospital complex (JIPMER Hospital) and a Nursing College. Some of the courses offered are MBBS., BSc., MSc., MD., MS, DM., and MCh. Courses. Full-time Ph.D. Programs are available in several disciplines.

### **DEPARTMENT OF PREVENTIVE AND SOCIAL MEDICINE**

Department of Preventive and Social Medicine has been training undergraduates from the inception of JIPMER and postgraduates from 1979. Undergraduate training includes medical and paramedical disciplines like laboratory sciences and medical records. Several hundreds of quality research publications and over 50 postgraduate dissertations have been completed. The department has also completed several internationally funded research projects on Maternal Health by Ford Foundation and ‘Model Geriatric Care’ by WHO.’

The department has well organized Urban and Rural Health Centres, visited by stalwarts like Professor John M Last. These centres have well established and documented family folder system of medical records which facilitates family centered teaching, training and follow up health care services. The department has an exclusive JIPMER International School of Public Health and is committed to prepare a competent workforce of public health specialists who have basic knowledge of public health principles and methods, familiarity with the aspects of the social and environmental sciences, and ability to apply this knowledge to effectively meet the public health needs of the country.

## **2. Course details:**

### **2.1 Nomenclature of the course: Master of Public Health (MPH)**

### **2.2 Introduction:**

Public Health is the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of the society. Scientific basis for public health practice is provided by study of epidemiology, biostatistics, environment, demography, nutrition, economics, social and biological sciences. While epidemiology plays a central role, social sciences make essential contributions in the study of determinants of health, and in the development and evaluation of effective public health interventions. Public health actions are directed at whole populations so as to provide safe environment, healthier food and accessible health care.

Despite the successes of the past, current challenges for public health are plentiful. There is a great need for development of public health policies and programs for prolonging healthy life expectancy. Emerging health transition shows that while old threats of communicable diseases continue, new infectious diseases may appear, and increasing incidence of non-communicable disease will overburden the health system in future. A cadre of Public Health Specialists who have sound scientific knowledge and skills to practice public health are required to tackle these emerging problems.

Government of India has highlighted in the National Health Policy 2002 and Report of the National Commission on Macroeconomics and Health that many specialists should be trained in Public Health. World Health Organization has also emphasized in Calcutta Declaration, the need for Public Health Training.

It is a well-known fact that underlying causes of various diseases very often lie in socio-economic, environmental, and behavioral domains rather than in the biomedical one. Thus, with training, both non-medical and medical persons can make contribution to develop Public Health. As physicians must attend to the pressing needs of the ailing persons, there is acute shortage of public health physicians throughout the world including India. Therefore, in several countries postgraduate courses in public health are being offered for both medical and non-medical graduates. The emphasis in such educational programs as recommended by WHO is on a thorough training in public health administration as well as in epidemiology along with the study of relevant aspects of environmental and social sciences, i.e., health economics, health psychology and sociology.

JIPMER is committed to prepare competent specialists with MPH degree with employment opportunities in India as public health specialists in various Government and private health care organizations at state, district and sub-district levels to oversee the programme implementation of various health programmes.

## **2.3 Objectives:**

**Preamble:** The course will provide competency in Public Health Management, Research and Public Health Leadership.

On completion of MPH course, a public health professional should be able to:

### **A. Identify key public health issues pertaining to**

- i. health problems of the community in the context of the socio-cultural milieu.
- ii. threats to the environment.
- iii. groups that require special attention (children, adolescents, women, elderly, the poor and the marginalized groups) including those facing occupational hazards.

### **B. Demonstrate competency in public health management at various levels of healthcare delivery**

- i. prioritize health problems
- ii. set objectives, preparing action plan, implement, monitor, supervise and evaluate health programmes.
- iii. develop and manage health information system and respond appropriately to the information gathered.
- iv. assess costs and carrying out programme budgeting.
- v. enable implementation of public health laws.
- vi. establish surveillance system and respond to public health threats effectively and efficiently.
- vii. anticipate, prepare for, and respond to disasters.
- viii. plan human resource development.
- ix. manage logistics and materials effectively.
- x. monitor and assure quality in programme implementation.

### **C. Demonstrate the following teaching learning skills in the field of Public Health to**

- i. develop competency in teaching and training.
- ii. assess the learning needs of any given group (students, staff, and community).
- iii. formulate learning objectives.
- iv. select and implement appropriate learning methods.
- v. evaluate learning experience.

#### **D. Develop competency in research to**

- i. critically evaluate data, identify knowledge gaps and formulate research questions.
- ii. design and implement epidemiological and health system research studies.
- iii. effectively communicate findings and public health information.
- iv. apply ethical principles to the collection, maintenance, use and dissemination of data and information.

#### **E. Encourage community participation in health-related activities and programmes to**

- i. develop competency in Leadership
- ii. interact, communicate, and effectively educate persons from diverse backgrounds, ages, and preferences to promote healthy behaviours through community participation.
- iii. explain scientific information to public, decision makers and opinion leaders.
- iv. nurture team spirit and harmonize activities of various members of the team.
- v. facilitate inter-sectoral coordination.
- vi. promote and establish partnerships.

### **3. Regulations:**

#### **3.1 Eligibility:**

Bachelor of Medicine and Bachelor of Surgery (MBBS), Bachelor of Dental Sciences (BDS), Nursing (BSc Nursing), AYUSH physicians and Veterinary Science (BVSc)/ Allied Health or Social Sciences of any recognized University/Statutory Body, in first attempt with at least 50% marks in aggregate who have passed in one attempt with at least 50% marks in aggregate will be eligible to apply for the course.

#### **3.2 Method of Selection:**

Candidates for the MPH course will be selected based on merit in the common All India Entrance Examination conducted by the Institute. The Entrance Examination will be a Computer Based Test (CBT) held online at centers across the country. The same criteria will be followed by for admitting sponsored (government and private organization) candidates.

#### **3.3 Candidates intake per year:**

34 will be admitted to the course every year, out of which 15 seats are reserved for sponsored candidates.

#### **3.4 Duration of the course:**

2 years (Two years). There are no stipendiary provisions during the study period.

### 3.5 Medium of instruction:

English

### 3.6 Vacation

As per institute guidelines, students will be eligible for 15 days' vacation in summer and 9 days in winter.

### 3.7 Subject details:

<b>Year</b>	<b>Paper</b>	<b>Title of the paper</b>
<b>I year</b>	I	Epidemiology and Biostatistics; Social Epidemiology and Environmental Health
	II	Public Health Management; National Health Programmes and Health Economics
<b>II year</b>	I	Advanced Epidemiology and Biostatistics; Health Management
	II	Public Health Practice; Health Promotion, Advocacy and Health Economics

## SYLLABUS

The course shall comprise of following teaching modules.

Modules	Weeks
<b>I year (Semester I &amp; II)</b>	
Pre-foundation	2
Epidemiology	4
Research Methods	4
Biostatistics	2
Social and Behavioral Sciences	4
Infectious disease Primer & Outbreak investigation	2
National Health Programme	8
Health Management	6
Environmental and Occupational Health	4
Population Sciences and Demography	2
Health Economics Part I	1
<b>II year (Semester III &amp; IV)</b>	
Advanced Epidemiology	4
Health Promotion & advocacy	4
Advanced Health management	4
Dissertation work	4
Public Health Nutrition	2
Health Economics Part II	2
Public health practice posting part I (JQC, Health Centers)	4
Public health practice posting part II	12
Revision	6



## **A. I year (I Semester)**

### **A.1. Pre-foundation module**

The trainees will be oriented to basic computer skills (MS office and other related software), communication skills, literature search and preparation of district health profile of the respective states.

### **A.2. Epidemiology module**

The content of this section is designed to impart the knowledge and principles of epidemiology towards understanding the distribution and determinants of diseases in the population. This course will help Public Health experts in developing skills for designing, conducting and evaluating research for evidence based advocacy towards Public Health policies. The contents will be as follows.

1. Epidemiology background
  - Historical Development of Epidemiology Methods
  - Measurement in Epidemiology
  - Binary Outcomes
  - Definition of Prevalence
  - Determinants of Prevalence
2. Incidence and prevalence
  - Incidence
  - Cumulative Incidence
  - Incidence Rate
  - Relationship between Cumulative Incidence and Incidence Rate
  - Relationship between Incidence and Prevalence
3. Measures of association
  - Measures of Association
  - Common Measures of Association
  - Odds Ratio
  - Attributable Proportions
  - Number Needed to Treat
  - Regression Coefficients

4. Study designs I
  - Case Reports
  - Ecologic Studies
  - Cross Sectional Studies
  - Bias
  - Confounding
  - Chance
  - Survey Data Sets
  - Critique of the Literature Session
5. Study designs II
  - Experimental Studies
  - Causal Inference
  - Randomization
  - Blinding
  - Analysis
  - Critique of the Literature Session
6. Study design III
  - Cohort Study Design
  - Open and Closed Cohort
  - Prospective and Retrospective Cohort Studies
  - Induction Period
  - Bias
  - Confounding
  - Critique of the Literature session
7. Study design IV
  - Case Control Studies
  - Control Selection
  - Cumulative Incidence Sampling of Controls
  - Case Cohort Studies
  - Density Type case Control Studies
  - Critique of the Literature Session
8. Regression
  - Regression Coefficients
  - Regression Models

## 9. Screening

- Screening
- Screening Test
- Screening Program
- Lead Time Bias
- Length Bias
- Clinical Prediction Rules
- Calibration
- Discrimination
- Assessment
- Re-Sampling

### **A.3 Research methods**

This is a field based teaching and learning method where trainees are assigned a topic to conduct survey on issues of public health importance. They learn questionnaire development, pretesting, data collection, data cleaning, data entry in the specialized data entry software (Epi Data and Epicollect 5). They are taught to identify errors in data entry and learn by carrying out this activity in field set up. The content of this module will impart necessary skills to identify the areas requiring research in public health, design and conduct research in different settings for improvement of the health of the community.

#### **Contents**

1. Literature search
2. Choosing research topics
3. Formulating research questions
4. Study designs
5. Measuring reliability and validity
6. Sampling
7. Instrument development
8. Data collection and management
9. Data analysis and report
10. Communicating research findings
11. Scientific writing
12. Development of research proposal

#### **A.4. Biostatistics module**

The knowledge of biostatistics is essential for deriving information from the large data on health and disease generated by the various national health programmes through monitoring and surveillance activities. The contents of this course will provide core competency to the public health professionals for management and planning health services in the community. Biostatistics is a supportive pillar in the functioning of the all the fields of public health especially for conducting research.

##### **Contents**

1. Basic Biostatistics
  - Types of numerical data
  - Tables
  - Graphs
  - Measures of Central Tendency
  - Measures of Dispersion
  - Rates and Standardization
2. Life tables
  - Introduction to Life Tables
  - Calculating Life Tables
  - Interpreting Life Tables
  - Life Tables Demonstration
3. Probability, Odds, Incidence, Prevalence, screening, detection limit, Bayes Theorem, ROC curves
  - Introduction to Probability
  - Operations on Events
  - Probability Definition
  - Conditional Probability
  - Multiplicative Law and Independence
4. Probability models and types of distribution
  - Probability Models
  - Binomial Distribution
  - Poisson Distribution
  - Normal Distribution
5. Sample size, Confidence interval and Hypothesis testing

- Sampling Distributions
  - Central Limit Theorem
  - Sample Size
  - Confidence Intervals
  - Width of Confidence Intervals
  - Unknown Sigma - the t-distribution
  - Hypothesis Testing
  - Examples and P-Values
6. Statistical tests
- Dependent Case
  - Independent Case
  - Type 1 and Type 2 errors
  - Sample Size and Power
  - T-Tests
  - One-way ANOVA
  - ANOVA and Bonferoni correction
7. Proportions
- Proportions and Chi-square test of association
8. Sampling techniques
- Sampling Theory
  - Random Sampling
  - Stratified Sampling
  - Cluster Sampling
  - Non-probability Sampling
9. Correlation and Nonparametric methods
- Correlation
  - Nonparametric Methods

### **A.5 Infectious disease Primer & Outbreak investigation**

In this module the trainees are sensitized to various basic principle of infectious disease epidemiology (infectivity, pathogenicity, Incubation period and basic reproduction number etc). A simulated exercise is carried out in field practice area of Rural and Urban centres to investigate an outbreak and prepare a report.

## **A.6. Social and Behavioural Science module**

The module will focus on human behaviour which has been recognised as an important contributor to public health problems. By the end of the module, the student will be able to identify community concerns by identifying the social, developmental, and behavioural theories of health, health behaviour, and illness; communicate effectively with communities and other stakeholders; gain proper communication skills for developing an efficient health communication strategy; formulate appropriate and need based social and behavioural change interventions acceptable to the community; develop program and policy implementation skills, including communication and advocacy; design and implement program evaluations and critically appraise validity of research in social and behavioural sciences.

### **Contents**

1. Social dimensions of health and ill health
2. Cultural determinants of health and health seeking behavior
3. Medical anthropology
4. Framework for individual and social change
5. Skills in Health communication
6. Social marketing
7. Health promotion
8. Qualitative study design
9. Principles of Social and Behavioral Research
10. Gender and health

## **B. I year (II Semester)**

### **B.1. National Health Programmes module**

This module is designed to build upon concepts of Public Health Management towards effective utilization of skills in the context of the National Health Programmes (NHP), and provide an understanding of the salient features of all the NHP. The course is also designed to improve the evaluation skills of the Public Health specialists to help them act as supervisors for the program activities.

#### **Contents**

1. Reproductive and Child Health (RCH) programme
2. National Rural Health Mission
3. Programmes related to nutrition
4. National AIDS Control programme
5. National Blindness control programme
6. National Vector Borne Disease Control Programme
7. Revised National Tuberculosis Control Programme (RNTCP)
8. Mental Health programme
9. Geriatric health
10. Community based rehabilitation programmes
11. Other programmes

### **B.2. Health Management module**

The module is planned to produce qualified professionals who can skillfully plan, execute and monitor national health policies and programmes, supervise the public health workforce. They will also be able to fully assess the dimensions of public health issues and devise appropriate strategies to meet emerging managerial challenges in the health system.

#### **Contents**

1. Health services
2. Monitoring and evaluation
3. Human resources for health
4. Human resource development
5. Conflict Management
6. Financial management
7. Budgeting and accounting

8. Governance and leadership
9. Strategic management
10. Organizational Behaviour
11. Logistic management & inventory control
12. Introduction to human resource management
13. Quality management, continuous quality improvement
14. Operations Research
15. Introduction to MIS
16. Supportive supervision
17. Health communication

### **B.3. Environmental and Occupational Health module**

The contents of this course module will enable the Public Health experts to identify the various sources of environmental threats to health and the ways to manage the environmental hazards to prevent related diseases from occurring in the community. The students will also be trained to practice preventive medicine in the various occupational areas to prevent diseases related to occupational exposures and to improve the health status of the working population in this country.

#### **Contents**

1. Principles of environment health and human ecology
2. Food sanitation and safety
3. Vector and rodent control
4. Waste disposal
5. Environmental pollution
6. Environment health policy
7. Current and emerging issues in environment including Global Environmental Change
8. Occupational health
  - Hazards at the workplace
  - Diagnostic criteria of various occupational diseases
  - Workplace safety
  - Prevention of occupational hazards (including accident prevention)
  - Legislations related to occupational health
  - Employees State Insurance Scheme



#### **B.4. Population Science and Demography module**

This module contains the study of human population and the demographic factors that are essential in progressing towards a sustainable population for the country.

##### **Contents**

1. Factors affecting the size of the population
2. Measures of fertility and mortality
3. Population projection and Demographic transition
4. Implication of rapid population growth
5. Life table
6. Urbanization

#### **B.5. Health Economics Part I**

The module on “fundamentals of health economics” is aimed at imparting orientation of application of economic principles in health policy and planning of healthcare programmes.

##### **Contents**

1. Introduction to Macro and Micro-economics
2. Demand and supply
3. Health financing
4. National and District Health Accounts Insurance (commercial, social security)
5. User fees
6. Resource mobilization and utilization
7. Costing and budgeting
8. Financial sustainability

## **C. II year (III Semester)**

### **C.1. Advanced Epidemiology module**

This module will focus on advanced epidemiological skills required for conducting interdisciplinary research as a tool to support planning and policy making in the country.

#### **Contents**

1. Confounding
2. Stratification
3. Mantel-Haenszel Estimation
4. Design Methods to Avoid Confounding
5. Matching
6. Efficiency Implications
7. Analysis
8. Effect Modification
9. Standardization
10. Effect Modification and Confounding
11. Bayes Theorem
12. Sensitivity and Specificity
13. Estimated Prevalence
14. Detection Limit
15. ROC
16. Probability & Odds
17. Linear Regression
18. Least Squares estimation
19. Indicator Variables
20. Interaction Terms
21. Variable Selection
22. Logistic Regression
23. Survival Analysis
24. Product-Limit Method
25. Log-rank Test

## **C.2 Advanced Health Management module**

The advanced module in health management will provide the knowledge and skills to understand the health system of the country in relation to international health and the formulation of policies and reforms towards the ethical practice of public health science.

1. Universal Health Coverage
  - a. Health Equity and Social Protection
  - b. Measurement of UHC
  - c. Assessing Health Sector Performance
2. Health care financing:
  - a. National Health Accounts
  - b. Principles of Risk pooling
  - c. Mechanisms of resource allocation
3. Public Health Decision making
4. Introduction to Ethics/ Public health ethics
5. Public Health Laws
6. Health policy formulation and assessment
7. Health sector reforms
8. Advocacy for public health priorities
9. International Health, Urban Health Needs, Ensuring Quality in Health Care and Accreditation, Modern Management Techniques

## **C.3. Health promotion module**

At the end of this course, the participants will be able to

1. describe the concepts and strategies of health promotion.
2. identify social determinants of health.
3. identify the other players in health promotion.
4. assess and prioritize health promotion needs.
5. analyse public health policies and programs in the context of health promotion.
6. develop an action plan for health promotion.
7. apply communication skills in various situations.

## Contents (Prescribed in curriculum)

1. Health promotion and social determinants of health and wellbeing
2. Community needs assessment for health promotion activities
3. Health promotion program planning
4. Health Promotion strategies and program management
5. Evaluation of program management
6. Health promotion policy and funding
7. Health technology

### Session I: Introduction to Health Promotion

- a) Holistic view of health
- b) Definition of health promotion
- c) Evolution of the concept of health promotion and its importance in the contemporary public health scenario
- d) Health Education vs. Health Promotion

Methodology: Interactive Lecture & Group work

### Session 2: Basics of Health Promotion

- a) Principles of health promotion
- b) Approaches for health promotion
- c) Health promotion strategies
- d) Health promotion action
- e) Role of participants for health promotion in their respective sectors.

Methodology: Interactive Lecture & Group work

### Session 3: Healthy Public Policy

- a) Concepts of healthy public policy
- b) Overview of current national health policies, population policy, nutrition policy, etc.
- c) NRHM and its health promotion strategy
- d) Current legislative measures in India for health promotion.
- e) Advocacy for investing

Methodology: Interactive Lecture & Group work

### Session 4: Development of an Action Plan for Health Promotion

- a) Techniques of needs assessment
- b) Prioritization of needs
- c) Principles processes and criteria for determining health promotion priorities
- d) Assessing and strengthening community resources.

- e) Building health promotion plan.
- f) Planning for sustainability.

Methodology: Observational field tour (OFT) • Group work & presentation

#### Session 5: Communication Strategies

- a) Communication methods (IPC, Group communication, Mass communication methods) IEC, BCC, SCC, social marketing, advocacy, networking for communication.
- b) Media Advocacy & Barrier Analysis

Methodology: This includes case study & discussion, brainstorming, practical exercise, and field visit.

### **C.4. Public Health Nutrition**

The following sessions will be conducted for this module.

1. Public Health Nutrition module (2 weeks):
2. Nutritional requirements and dietary profile
3. Principles of Nutritional Counselling
4. Diet plan for different ages and special groups
5. Maternal and child nutrition: Interventions in the first 1000 days
6. Adolescent nutrition - CNNS
7. Assessment of nutritional status
8. Nutritional surveillance
9. Nutritional problems in public health and in selected diseases
10. Anemia - prevalence and risk factors, National anemia control program, NIPI
11. Nutrition and NCDs
12. Undernutrition: prevalence of undernutrition, risk factors, consequences
13. Over nutrition: prevalence and risk factors
14. Surveys and tools
15. National Nutrition Strategy, Poshan Abhiyan
16. Community Nutrition Programmes
17. Organising community nutrition education programs
18. Basics of nutrition Epidemiology
19. Nutrition Transition: Demographic, economic transition, food consumption patterns
20. Global Panel on Agriculture and Nutrition (GloPAN)
21. Food Security, Surveys and tools for food security assessment

22. Food toxins, Food fortification
23. Legislations and organisations (PFA, FSSAI)
24. Monitoring and evaluation of nutrition programs

### **C.5. Health Economics Part II**

A two-week in-depth module will be undertaken for the trainees on Health technology assessment with the following topics to be covered.

1. Introduction to HTA
2. Defining the research question
3. Evidence synthesis part 1: Systematic review
4. Evidence synthesis part 2: Meta-analysis
5. Outcome measures
6. QALY estimation
7. Defining outcomes
8. Introduction to costing concepts and good practice for cost identification
9. Cost identification and data collection from primary and secondary sources
10. Adjusting and apportioning costs and reporting results
11. Cost identification practical
12. Model-based health economic evaluation
13. Modelling exercise 1
14. Modelling exercise 2
15. Budget impact analysis

## **D. II year (IV Semester)**

The last semester will be dedicated to public health practice posting and University examination. One month the trainees will be there in JIPMER to assist and learn the functioning of large public sector hospital. They will be posted in various units (JQC, Peripheral health centers etc) to practice what they have learnt in three semesters. After that they will carry out public health practice posting in an outside organization. They will be submitting a report of their activity to the MPH office on their return. One internal mentor will be allotted to each trainee who will guide them on day-to-day basis. The Public health practice posting will also be evaluated and will contribute to the internal assessment mark.

## **Recommended Reference Books and Journals**

### **Textbooks (latest edition):**

- Oxford Textbook of Public Health.
- Public Health & Preventive Medicine: John M Last
- Maxcy-Rosenau Textbook of Public Health & Preventive Medicine.
- Modern Epidemiology: Kenneth J Rothman
- Textbook of Epidemiology: Leon Gordis.
- Principles of Biostatistics: Marcello & Kimberlee
- Medical Sociology: W. Peters & H. M. Gilles
- Research Methods in Cultural Anthropology: Russell Bernard
- Survey Methods in Community Medicine J. H. Abramson
- Hunter's Disease of Occupation: P.A.B. Raffle Obe
- Practical Epidemiology: D. J. P. Barker and A. J. Barker
- Manson's Tropical Disease: Manson Bahr & Apted.
- Basic Clinical Nutrition.
- Park's Textbook of Preventive & Social Medicine.
- Textbook of Community Medicine by Sunderlal.

### **Journals**

- Indian Journal of Public Health
- Indian Journal of Community Medicine
- Indian Journal of Preventive & Social Medicine
- Journal of Communicable Diseases
- Journal of Family Welfare.
- Health and Population – Perspectives & Issues

- Indian Journal of Environment
- Indian Journal of Occupational Health
- Bulletin of World Health Organization
- International Journal of Epidemiology
- American Journal of Public Health
- Journal of Public Health Medicine
- Journal of Epidemiology and Community Health
- American Journal of Epidemiology
- Journal of Health Education
- Social Science and Medicine
- Health Services Management
- Public Health Reports

#### **National Reports Published by MoHFW, GoI**

- Annual Reports of MoHFW
- RNTCP Annual reports
- Rural Health Statistics
- National Action Plan and Monitoring Framework for Prevention and Control of NCDs
- National Vaccine Policy Book (April 2011)
- National Health Accounts
- Programme Guidelines

#### **Role of Other Departments**

The faculty from departments of Obstetrics and Gynecology, Psychiatry, Medicine, Anesthesiology, RCC, Pediatrics and other related disciplines will be involved for lecture discussion sessions and field work (if any) in their related areas. Visits to related departments within and outside the institute e.g. PMRC, WCH, RCC, DOTS centre, VCRC, Public Health Lab, STB office, etc. to understand the functioning and provision of Public Health services in the country.



## **Organization of Teaching and Learning methods**

Teaching methods shall comprise of

- A. Lecture discussions, seminars, journal clubs, group discussions.
- B. In the academic year, 50% of the time will be for classroom teaching, 25% assignment and 25% field visits will be undertaken.
- C. Case based discussion and guided learning by doing spread over four academic semesters.
- D. Visits to related departments within and outside the institute e.g., PMRC, WCH, RCC, DOTS centre, VCRC, Public Health Lab, STB office, etc. to understand the functioning and provision of Public Health services in the country.
- E. Focussed topics will be dealt in workshop mode where eminent experts from various fields will be organized for the benefit of the trainees. A workshop calendar will be prepared for the whole academic year.
- F. The public health practice posting will provide an opportunity for the trainees to gain first-hand experience of working in an NGO/ organization and that will also build partnership with them so that they can be absorbed in the organization later.

## **Assessment methods:**

Formative, Internal and Summative (annual exam) will be conducted for this course.

### **A. Formative Assessment**

At the end of each module, a module test will be conducted, and an organized feedback session will be arranged for the trainees. One-to-one and group feedback will be conducted to identify areas of improvement.

### **B. Internal Assessment (200 marks)**

A minimum of four notified internal assessments (including model examination) will be held for a subject paper in each year before the final annual examination and the candidate will be examined in theory, practical and evaluation of Public Health practice posting. Each notified test and the model examination will carry equal weightage for calculation of final internal assessment marks. The internal assessment marks will form 20% of the summative assessment. There is no minimum cut-off percentage of internal assessment mandatory to appear in the annual examination. Internal assessment will be done by the faculty of Department of Preventive and social medicine, JIPMER, Puducherry.

### C. Summative Assessment and distribution of marks (Annual Examination)

Scheme of examinations for the MPH I and II examinations conducted at the end of first year and second year of MPH course is as follows:

#### Scheme of Assessment for MPH I year:

	Maximum marks
Theory examination	200
Practical and Viva-voce examinations	200
Internal assessment (Theory - 50 + Practical - 50)	100
<b>Grand total</b>	<b>500</b>

#### Theory examination:

	Theory papers	Maximum marks
Paper I	Section A - Epidemiology and Biostatistics. Section B - Social Epidemiology and Environmental Health	100
Paper II	Section A - Public Health Management. Section B - National Health Programmes and Health Economics	100
	<b>Total marks</b>	<b>200</b>

Question pattern will be 10X10 marks for each theory paper with three hours duration.

#### Practical and Viva-voce examinations: (Two days)

		Maximum marks
Part I	Epidemiology and Biostatistics Exercise	50
Part II	Health Management and National Health Programs Exercise	50
Part III	Communication exercise	50
Part IV	Spotters	30
Part V	Grand Viva	20
	<b>Total marks</b>	<b>200</b>

### Scheme of Assessment for MPH II year:

	<b>Maximum marks</b>
Theory examination	200
Practical and Viva-voce examinations	200
Internal assessment (Theory - 50 + Practical - 50)	100
<b>Grand total</b>	<b>500</b>

### Theory examination:

	<b>Theory papers</b>	<b>Maximum marks</b>
Paper I	Section A - Advanced Epidemiology and Biostatistics. Section B - Health Management	100
Paper II	Section A - Public Health Practice. Section B - Health Promotion, Advocacy and Health Economics	100
	<b>Total marks</b>	<b>200</b>

### Practical and Viva-voce examinations: (Two days)

		<b>Maximum marks</b>
Part I	Epidemiology and Biostatistics Exercise	50
Part II	Health Management and National Health Programs Exercise	50
Part III	Communication exercise	50
Part IV	Spotters	30
Part V	Grand Viva	20
	<b>Total marks</b>	<b>200</b>

### Project:

1. Submission of project work is mandatory for the appearing in the final examination. The project work shall be carried out by the candidate under the guidance of a postgraduate teacher in the department. The topics for the project shall be selected within the first year of the course and the final project shall be submitted six months before the final examination. The project work is mainly to orient the candidate towards research methodology. Collaboration works with other departments are encouraged.
2. The project will be sent for review by an external faculty and will be evaluated by the External/Internal Examiners at the time of viva voce examination of the candidate during the final summative exam.
3. The final project duly approved by the external/ Internal Examiners will be submitted to the Dean's office along with the result. The Dean's office will send the project to the library for record.

## Regulations of MPH course:

### Attendance:

- Students are required to attend 75% or more of all theory classes held, and 75% or more of practical in each subject to be eligible to appear in the annual examination. Under no condition will a student with less than the prescribed attendance in any subject be allowed to appear in the annual examination of that subject.
- Students with less than 75% attendance in theory and/or practical at the end of any year must start afresh in those subjects by joining the junior batch of students. No extra classes will be arranged to make such students eligible for the annual examinations. The attendance accrued in the previous academic year in those subject(s) will not be transferred. Students will be required to secure 75% attendance afresh in theory and practical/clinical of subjects detained, after joining the junior batch to become eligible to appear in the annual examination.
- The 25% leverage in attendance includes all types of leaves (including leave on medical grounds). For absence because of illness or any medical condition, a duly approved medical leave from Dean (Academic) with medical and fitness certificate issued/verified by authorized JIPMER clinical faculty member is mandatory. Certificate must be submitted before or within 10 days after availing medical leave.
- Attendance cannot be improved upon by attending classes during the gap between the annual regular examination and supplementary examination held within 6 weeks of the former.
- Students who are detained in all the subjects of a year due to lack of attendance should join the classes with junior batch within 7 days of declaration of the eligibility/detention list or when classes commence, whichever is earlier.
- Students who are detained in one or more subject(s) because of lack of attendance but are eligible to appear for annual examination in at least one subject of the year should join classes with junior batch within 7 days of completion of the last final theory/practical examination or when classes start, whichever is earlier. Attendance accrued in the previous academic year will lapse and attendance will be calculated afresh from the date of joining the junior batch.
- A show-cause notice will be issued to students on continuous unauthorized absence without prior permission for two weeks or more. If such absence extends to a period more than one month for any reason, the student is liable for termination from the course. The decision of the competent authority is final.
- There is **no condonation permissible** for shortage of attendance.

## **Examination rules and regulations:**

1. A student needs to pass in all theory paper(s) and practical examination to progress to the next year.
2. A student who fails in any one or more theory subject(s) and/or practical examination in the first year will reappear in a supplementary examination (to be held within 6 weeks) in the theory and the practical examination (2nd attempt). If he/she passes these subjects at this supplementary examination, he/she will continue with the regular batch.
3. In the I year, in case of fail result in any theory subject and/or practical in the 2nd attempt, the student will study with the next junior year's batch and will have to reappear for I year examination (theory and practical) again the next year (3rd attempt). A student failing in any one or more theory subject(s) and/or practical examination in this attempt will reappear in a supplementary examination in the theory and the practical examination (to be held within 6 weeks) in the subjects (4th attempt).
4. If a student fails even in the 4th attempt, no further chances will be given, and his/her name will be struck off the rolls of JIPMER.
5. A student needs to complete the entire 2-year course within 4 years from the date of enrollment (twice the duration of the course), beyond which he/she will not be allowed to appear in any examination. Any exception for extenuating reasons (e.g. prolonged illness of the candidate, family problems, natural calamities, etc.) will be made only after approval of the Academic Advisory Committee and Head of the institution.
6. No grace marks will be awarded for either theory or practical examinations, under any circumstances.

## **Pass criteria:**

1. A minimum 40% in each of the theory paper and overall aggregate, in theory (all papers put together) should obtain a minimum of 50% marks.
2. A minimum of 50% in practical separately.
3. A minimum of 50% of the grand total (theory, practical and internal assessments).

**MODEL QUESTION PAPER**  
**I YEAR MASTER OF PUBLIC HEALTH (MPH) EXAMINATION**

**Paper I**  
**(Epidemiology and Biostatistics; Social Epidemiology and Environmental Health)**

**Duration: Three Hours**

**Maximum Marks: 100**

**Answer ALL questions.**

**Draw diagrams wherever necessary**

1. Describe how would you plan for the social marketing of male contraception in your district. (10)
2. What sampling will you use for the assessment of vaccination coverage? Explain the steps of the selected sampling method. (2+8)
3. Explain how would you use Health Belief model to plan the health education program for enhancing COVID appropriate behavior at workplace during the pandemic. (10)
4. Classify epidemiological study designs. What is population attributable risk (PAR) and write briefly the significance of PAR in planning a public health policy. (4+4+2)
5. Write short notes:
  - a) Basic reproduction number and its application in public health. (5+5)
  - b) Explain SIR model with an example.
6. Enumerate and briefly describe the various fertility indicators. What are the values of TFR and NRR that indicate replacement level fertility? (7+3)
7. Explain the various approaches in management of social deviance. (10)
8. Describe the types of mixed method research design with a suitable example for each. Briefly explain the advantages and limitations of mixed method research design. (6+4)
9. List the impacts of environment on health of a community? Develop a plan for efficient solid waste management for a rural community. (3+7)
10. Classify different kinds of transmission of disease by vectors with examples. Write a note on the principles of integrated vector management. (3+7)

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**MODEL QUESTION PAPER**  
**I YEAR MASTER OF PUBLIC HEALTH (MPH) EXAMINATION**

**Paper II**

(Public Health Management; National Health Programmes and Health Economics)

**Duration: Three Hours**

**Maximum Marks: 100**

**Answer ALL questions.**

**Draw diagrams wherever necessary**

1. Briefly describe equitable distribution. Enumerate the indicators to monitor equitable distribution of preventive care services related to maternal and child health. (4+6)
2. As a district program officer what are the key interventions that you will facilitate to decrease neonatal mortality in your district and enlist atleast one indicator for monitoring each of those interventions. (5+5)
3. Briefly describe the tools for growth monitoring of under-5 children. (10)
4. Briefly describe the steps in setting up of supportive supervision mechanism under the National Tuberculosis Elimination Programme. (10)
5. Briefly describe the objectives and strategies of Integrated Disease Surveillance Program. (10)
6. What are the objectives and components of Ayushman Bharat? Describe the package of services available under a health and wellness centre. (4+6)
7. Discuss various types of cost used in economic evaluation. Differentiate between marginal and opportunity cost. (5+5)
8. Plan for the population level screening of common non-communicable diseases at a PHC of 30,000 population. (10)
9. Explain situational leadership with examples. What are the good qualities of an efficient leader? (10)
10. Describe the principles of material management and its application at primary care level. (10)

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**MODEL QUESTION PAPER**  
**II YEAR MASTER OF PUBLIC HEALTH (MPH) EXAMINATION**

**Paper I**  
(Advanced Epidemiology and Biostatistics; Health Management)

**Duration: Three Hours**

**Maximum Marks: 100**

**Answer ALL questions.**

**Draw diagrams wherever necessary**

1. What is basic reproduction number? Discuss its role in control of an epidemic. (10)
2. Describe the steps in conducting a Metaanalysis. Add a note on Forest plot. (6+4)
3. Describe the various types, rationale and limitations of mixed method study designs. (10)
4. Write short notes on non-probability sampling techniques. (10)
5. Briefly discuss the Maslow's theory of motivation. (10)
6. What is bias? What are the various ways of reducing bias in an epidemiological study? (2+8)
7. A researcher wants to test a new drug for treatment of COVID-19 disease. Describe the various steps involved in conducting a study to assess the efficacy of the new drug. (10)
8. Explain predictive values and likelihood ratios in diagnostic test accuracy. (5+5)
9. Describe the expanded range of services in health and wellness centers. Describe the key functions of information and communication technology in efficient functioning of health systems. (5+5)
10. Write short notes on: (5+5)
  - a) Time management
  - b) Conflict management at workplace

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**MODEL QUESTION PAPER**  
**II YEAR MASTER OF PUBLIC HEALTH (MPH) EXAMINATION**

**Paper II**

(Public Health Practice; Health Promotion, Advocacy and Health Economics)

**Duration: Three Hours**

**Maximum Marks: 100**

**Answer ALL questions.**

**Draw diagrams wherever necessary**

1. List the different adopter categories in Diffusion of Innovation model. Explain the usefulness of this approach in addressing COVID-19 vaccine hesitancy in the population. (10)
2. Describe the principles of 'social marketing' with examples. (5+5)
3. Differentiate between Disability Adjusted Life Years and Quality Adjusted Life Years. Add a note on health outcome assessment methods used in economic evaluation. (5+5)
4. Describe the tools and strategies for public health advocacy with specific examples. (10)
5. Briefly discuss the proposals recommended under Urban Health Mission. (10)
6. In district X, the immunization coverage for measles vaccination in children is low (<50%). A survey adopting a mixed methods design is planned to assess the coverage and reasons for low coverage. Briefly state the objectives, study participants, sampling method and data collection methods to conduct this study. (10)
7. Define incremental cost-effectiveness ratio and discuss the role of cost-effectiveness plane in decision making. (10)
8. The state NPCDCS is launching a screening program for hypertension in a district with 5,00,000 population. Develop input, process and output indicators for monitoring this activity. (10)
9. Write short notes on: (5+5)
  - a) Building blocks of health system
  - b) Ottawa charter for health promotion
10. Briefly discuss the management information system operational under National Tuberculosis Elimination Program. (10)

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