

CURRICULUM FOR MASTER IN PUBLIC HEALTH

Department of Community Medicine and Family Health

Tribhuvan University, Institute of Medicine

Maharajgunj, Kathmandu, Nepal

1998

CURRICULUM FOR MASTER IN PUBLIC HEALTH (MPH) COURSE

Background

Nepal is one of the least developed countries with enormous health problems most of which are preventable. The situation is further complicated by slow or negative economic growth coupled with mal-distribution of resources including health manpower, difficult terrain, poor development of communication systems and inadequate physical and organization infrastructure for health care, social welfare and development.

Major public health problems including very high mortality and morbidity are related to hunger and want, poor sanitation and personal hygiene, lack of safe water supply and proper shelter, inadequate health care and education system etc. In addition, Nepal is becoming increasingly vulnerable to certain heretofore uncommon health problems like accidents, including road traffic accidents, environmentally related carcinomas, drug addiction etc.

With strong commitment by HMG to provide primary health care (PHC) along with basic minimum needs for all by 2000 AD, the Institute of Medicine (IOM) has a very important role to play by developing human resources for health who are community-oriented and have problem solving skills. In addition, the goal is to provide public health specialists with an ability to comprehend existing and emerging public health problems in the country, to plan and manage the health care service efficiently and effectively, to provide leadership and expert counseling on health and to conduct social, demographic, clinical, and biomedical research.

Since 2048 BS (1991 AD) IOM has been running the M. Sc. in Public Health course. As per Tribhuvan University regulation, the duration of the course is two years. This program has been planned for modification and institute is going to launch a one year Master in Public Health, two year M. Phil (M.Sc. Public Health) and three year M.D. (Community Medicine). Presently, the Master in Public Health program (MPH) program is going to be launched from this year 2055BS (1998 AD). The M.P.H. curriculum is designed in such a way that the teaching/learning activities are properly balanced with adequate classroom, laboratory and field activities. Integrated and coordinated teaching/learning is stressed. Active learning is to be stressed at all phases of curriculum implementation.

The course is designed to enable multidisciplinary health professionals to upgrade their competency, especially in achieving PHC goals. After completion of the course, graduates are

expected to take up the role of leaders, essentially as generalists with preventive, promotive, curative, rehabilitative and management abilities.

Overall Objectives of MPH Program

To prepare public health specialist with an ability to comprehend existing and emerging public health problems, to plan and manage the program alternatives to solve them optimally, to intensify PHC activities at all levels, and to provide leadership in health and health related education, service and research.

Specific Objectives

After the completion of the course the public health professionals will be able to cope with:

1. Promotion of public awareness and initiatives towards healthier living through organization of health promotion and disease prevention activities.
2. Management of medical health services particularly as public health managers in rural and urban areas.
3. Leadership in health and related fields.
4. Inter and intra-sectoral co-ordination in health.
5. Initiation of community participation in health and development.
6. Initiation of community health development programs.
7. Competency based health manpower development at district, zonal, regional and national levels and at different universities.
8. Identification and training of traditional practitioners and integration of them into PHC services.
9. Their own different roles as community health and PHC practitioners with balanced academic and vocational attributes.
10. Monitoring, supervision and evaluation of health promotion, disease prevention and health care and rehabilitation programs.
11. Conduction of epidemiological, clinical, biomedical, social, behavioral and education research and operations research and systems analysis.
12. Role as expert, advisor or counselor in health services, education and research.
13. Planning and management of health aspects of natural and man made disasters.
14. Pursuing further advanced studies.

Admission Criteria:

The following are the basic minimum requirements for the admission into the course:

1. MBBS or equivalent first medical degree or bachelor in Public Health or B.Sc. Nursing, Bachelor in Nursing (BN), or bachelor degree in Health Sciences including human biology, pharmacy and veterinary medical sciences recognized by Tribhuvan University or Bachelor degree in biology (B.Sc.) or social sciences (B.A., B.Ed.) with at least three years working experience in government or international non-government organizations (INGOs) in the capacity of Public Health Officer, Program Officer, Health Manager or Officer In-Charge in public health field or five years in academic institutions working as instructor or Research Assistant.
2. Success in the entrance examination designed for the course, (Defaulted student after entrance examination will have to take up subsequent entrance examination if he/she would decide to join again.)
3. All those requirements or criteria set by the Tribhuvan University and/or Institute of Medicine for a degree of Post Graduate Course.
4. Fifty percent of the seats will be reserved for candidates of Department of Health Services, Ministry of Health. However, they have to pass the entrance examination and meet the admission criteria to be included in the merit list.

Duration:

The duration of the course will be of one academic year. The first six months (two semesters) will be an intensive study period at the campus. The third semester will be devoted for field research including the preparation and presentation of dissertation and an elective study. A three months of residential field study be compulsory for the dissertation and practical. The fourth semester will be devoted for the writing final dissertation and intensive classes and seminar on health management.

Teaching /learning activities will take place in campus. This will be supported by laboratory and concurrent field study. Research will take place in rural and urban communities. A strong emphasis will be given to rural requirements. The study will be strongly practice or field oriented. Students will be assigned to the designated situations where facilities and opportunities are available for undertaking the field research activities in approved subjects. Placement will be

made in places where students will be able to conduct their research. Students will clearly understand their actual role as a competent professional as well as a learner student. In the field the student will not only participate in field research but will also work as a staff member of the health services in the district to which he/she will be attached.

Commencement of the Course:

Course will; commence from second of Baisakh month (mid April) of each year. The entrance examination will be held in the month of Chaitra (mid March).

Student Evaluation:

Students' evaluation would be done at the beginning of the course, and throughout the course with continuous modular assessment. This will consist of internal assessment having a weightage of 20%. The students will sit for comprehensive examination at the end of their one-year course. There will be final examination of nine compulsory theory paper (Paper I to IX) each carrying 100 marks. The qualifying marks for the theory courses will be 50% in each subject including electives, and for dissertation it will be 60%. To appear in the examination 90% attendance required, in each semester.

The markings on the thesis will be 20% on preparation, methodology and development, implementation and data analysis. Thirty percent would be on expert evaluation on the thesis presented and fifty percent on orals.

Theoretical examination will be essay type, short essay and multiple choice questions type; practical and oral questions would be valued according to performance, interpretation and presentation. Each examiner in the practical and oral papers will mark the papers separately and the marks will be averaged at the end.

Re-examination:

A student must pass all the paper examinations (Papers I to IX) and should fulfill the requirement of the dissertation (paper X). He/she should do research work under the guidance of designed supervisor(s) and write the dissertation as per format prescribed by Tribhuvan University and successfully defend his research work to be able to receive the MPH degree. All students have to appear for the qualifying examination after meeting the requirement of all subjects and successfully defending his research work. If a student is unable to do so, he/she will have to re-sit in the examination with the forth-coming batch.

Course Structure

Modules of the Course

Paper I Epidemiology

Paper II Biostatistics and Computer application

Paper III Environmental Health and Disease Control

Paper IV Medical Sociology, Anthropology and population Studies

Paper V Family Health

Paper VI Health Education

Paper VII International Health and Primary Health Care

Paper VIII Research Methods in Health Sciences

Paper IX Health Systems management

Paper X Dissertation

Course Outline:

Public health curriculum will consist of 10 papers, each carrying 100 marks-Public Health Paper I to IV will be taught in first semester (3 months duration), Public Health Paper V to VIII will be taught during second semester (3 months duration). Public Health Paper IX is Health System Management and Public health paper X is dissertation. Research proposal development will start during second semester. The data collection, analysis and report writing will be carried out during third and fourth semesters. Teaching learning activities will include lecture, seminar presentation, proposal development for writing dissertation, data collection (field research), data analysis and writing a report.

Table 1: Course Description

| Paper | Course Description | Marks | | Teaching Hours |
|-------|--|-------|------|----------------|
| | | Total | Unit | |
| I | Epidemiology <ul style="list-style-type: none"> • Basic Epidemiology • Applied Epidemiology | 100 | 70 | 70 |
| | | | 30 | 30 |
| II | Biostatistics and Computer application <ul style="list-style-type: none"> • Biostatics • Computer Application | 100 | 70 | 70 |
| | | | 30 | 30 |
| III | Environmental Health and Disease Control <ul style="list-style-type: none"> • Environmental and Occupational Health • Medical Entomology • Parasitology • Microbiology | 100 | 40 | 40 |
| | | | 20 | 20 |
| | | | 20 | 20 |
| | | | 20 | 20 |
| IV | Medical Sociology, Anthropology and Population Studies <ul style="list-style-type: none"> • Medical Sociology and Anthropology | 100 | 70 | 70 |
| | | | | |

| | | | | |
|------|--|-----|------------------------|-----|
| | <ul style="list-style-type: none"> Population Studies | | 30 | 30 |
| V | Family Health | 100 | 100 | 100 |
| VI | Health Promotion and Health Education | 100 | 100 | 100 |
| VII | International Health and Primary Health Care | 100 | 100 | 100 |
| VIII | Research Methodology in Health Sciences <ul style="list-style-type: none"> Research methods in health sciences including operations and research and system analysis. | 100 | 100 | 100 |
| IX | Health Systems Management | 100 | 100 | 100 |
| X | Dissertation <ul style="list-style-type: none"> Proposal development and field work Presentation and expert evaluation Comprehensive oral examination | 100 | 20 30 50 | |

Paper I Epidemiology

General Objectives

To understand epidemiological concepts and use epidemiological tools for prevention, control and health promotion services.

Specific Objectives

1. Terminologies used in Epidemiology.
2. Know the different epidemiological strategies for disease prevention and control.
3. Understand different types of epidemiological studies.
4. Compute, analyze and interpret different epidemiological indices.

5. Critically review different scientific papers.
6. Manage data passed information system.
7. Conduct epidemiological investigation.
8. Carryout epidemiological surveys and outreach investigations
9. Implement disease prevention, control and health promotion services
10. Give expert advice in the field of epidemiology.

Contents

1. Introduction of Epidemiology: Definition, scope and uses.
2. Definition of different terminologies used in epidemiology.
3. Concept of cause and effect association.
4. Basic measurement in epidemiology.

- Counts, proportions

- Rates, ratio, prevalence

- Incidence- Risk cumulative incidence

- Incidence density

5. Health Indicators

- Birth rate, morbidity and mortality

- Fertility rate

- Infant mortality rate

- Peri-natal mortality rate

- Neonatal mortality rate

- Maternal mortality

6. Natural history and progress of the disease
7. Types, objects and design of epidemiological studies

- Cross-sectional studies and survey

- Case control studies

- Cohort study and longitudinal studies
- -Experimental study (randomized control trials)

8. Sources of data

- Primary and secondary

9. Risk, cause, bias and confounding

- Definitions

- Major forms of bias and their solution

- Confounding management

10. Outreach investigation

11. Diagnostic test and screening

- Validity

- Reliability

- Sensitivity

- Specificity

- Predictive value

- Likelihood ratio

12. Applied epidemiology

- a. Infectious Diseases of public health concern in Nepal
- b. Non infectious diseases common in Nepal
- c. Emerging and reemerging diseases
- d. Epidemiology of boarder communities health
- e. Epidemiology of at risk population

13. Evaluation of health services

- Methods of health care evaluation
- Quality assurance

14. Ethics

15. General genomic epidemiology

Paper II Biostatistics and Computer Application

Unit 1 Biostatistics

General Objectives

To understand the use of bio-statistics and public health statistics principles in health sciences and research.

Specific Objectives

1. Derive different statistical indicators and indices used in public health.
2. Apply different statistical tests of significance to determine the cause and effect relationships.
3. Plan and implement statistical enquiry and prepare a report.
4. Critical review of statistical findings in published articles from the health literatures.
5. Choose appropriate statistical tools.
6. Critique on research papers.

Course Contents

1. Introduction to statistics, sources of information, collection of data and methods
2. Classification, tabulation, graphical and diagrammatical presentation.
3. Measures of central tendencies
4. Measures of dispersion and location
5. Probability theory and probability distributions (binomial and normal distribution)
6. Tests of significance (t-test, z-test, chi-square test, f-test)
7. Correlation and regression
8. Sampling theory, determination of sample size, sample size, sampling and on-sampling errors, surveys, plan and conduct statistical inquiry.
9. P-values, discussions on health papers
10. Data safety and protection procedures
11. Measures of statistical indicators and indices used in public health
12. Report writing

Unit 2 Computer Application in Health Research

General Objectives

To determine skill in computerized data management, analysis and documentation related to research and health information.

Specific Objectives

1. Use word processing to prepare necessary documents for research work.
2. Prepare format for data base
3. Data management, exploration and analysis.
4. Introduction to literature search- MEDline, Pop-line, health service bibliography.
5. Search other necessary information by using health information net working

Course Contents:

1. Introduction to DOS and different command of windows in computer.
2. Word (a word processor of windows), Excel, Power point.
3. Coding method

4. Import and export data bases
5. Analysis (different commands)
6. Literature review with reference to literature search e.g. pop-line, MEDline, health science bibliography of Nepal, Internet, e-mail, newsgroup, conferences and discussion groups.

Paper III Environmental Health and Disease Control

General Objectives

To conceptualize and analyze public health and environment and sustainable development.

Describe the scope of entomology, Parasitology and microbiology in relation to transmission of diseases and disease control management.

Specific Objectives

1. Describe and classify bacteria, viruses, parasites, fungus and medically important insects.
2. Able to collect or arrange for collection of biological specimens such as blood, stool, urine, body fluids and medically important insects/vectors for identification and diagnosis of diseases.
3. Able to develop strategy and program, for the control of vector borne diseases including environmental control measures such as sanitation, prevention and destruction of breeding places.
4. Competent in laboratory identification, describe epidemiology and control of human parasites, insects vectors, bacteria, viruses and fungus of public health importance.
5. To initiate necessary steps for detection of biological, chemical contaminants in food, water, waste, soil, air and living in work place environment.
6. To assess and standardize the quality of food, water, air and environment
7. To describe immune response system and use of vaccines for protection against infection.

Course Contents

Unit 1 Terms and Concepts

A. Environment

- B. Sanitation
- C. Environment Health
- D. Environment and sanitation

Unit 2 Environmental Components

1. Water

B. Water Bodies

- i. Surface water
- ii. Ground water
- iii. Drinking water system

B. Water Quality Concepts

- i. Microbiological
- ii. Chemical/Physical

C. Water Quality Monitoring

- i. Spatial
- ii. Temporal

D. Relationship between Water and Health

- i. Waterborne/washed/based/related
- ii. Control measures through community participation

E. Water purification

- i. Natural purification
- ii. Household purification
- iii. Large scale purification

F. Water supply situation in Nepal

G. Water quality/Quantity situation in Nepal

H. Water and health in relation to disease prevalence

I. Epidemiological research in water and health

J. Water Quality act and its enforcement problems

2.2 Waste Management

A. Excreta disposal

B. Solid waste management

C. Sewage

- i. Pathogens and parasites
- ii. Wastewater treatment

-Community level

-Large scale

2.3 Air

A. Air pollution situation

B. Sources

C. Air quality assurance

D. Prevention and control

4. Food

A. Food safety situation

- B. Food act
- C. Food adulteration
- D. Quality assurance
- E. Establishment of Milk, Meat, Egg and Fish

5. Environmental Needs for Healthy Living

- A. Shelter
- B. Healthy cities/village
- C. Urbanization

6. Noise

- A. Sources and Control
- B. Pesticides and health hazard

7. Environmental Problems of Global and Regional Interest

- A. Radiation and health Control
- B. Acid rain/Ozone depletion/Deforestation

Unit 3 Environmental Policy, Planning and Regulatory System

3.1 Environment protection Council

3.2 Ministry of Population and Environment

3.3 Environmental protection Act 1996

3.4 Co-ordination with MOH and other related Ministries

3.5 Role of NGOs/INGOs and other Technical Institutions

Unit 4 Occupational Health

4.1 Definitions and Conceptualization of the Term

- A. Occupational health
- B. Industrial health
- C. Workable health
- D. Risk assessment
- E. Hazards

4.2 Classifications of Occupational Diseases

- A. Physical
- B. Chemical
- C. Bacteriological
- D. Environmental
- E. Psychosocial

4.3 Methods of Identifying Occupational Health Risk

4.4 Compensational Procedure

4.5 Risk Management

Integration of quality risk assessment with

- i. Social
- ii. Economic
- iii. Political

4.6 Control Measures

Unit 5 Parasitology and Microbiology

1. Introduction to parasitology, microbiology and laboratory science
2. Classification of human parasites, bacteria, fungus and viruses of public health importance
3. Identification of parasites (protozoa and helminths) and common bacteria using laboratory methods
4. Methods and arrangement of biological specimens such as blood/sera, stool, urine, body fluids for collection and transportation for laboratory investigations
5. Application of sero-epidemiological tools in field research works and use of sero-surveillance method
6. Important steps for detection of biological and chemical contaminants in food, water, waste, soil, air, work place (household, industries, hospital) environment
7. Assessment and standardization of quality of food, water, air and environment
8. Immune response system and use of vaccine for protection against infection

Unit 6 Medical Entomology

1. Medical entomology including its integral role in disease epidemiology
2. Mosquitoes-the creator of major public health problems
3. Identify insect-vectors and epidemiological significance
4. Insect-vector bionomics in formulation of disease control strategies
 5. Various control measures used in the contention of vector borne diseases (VBD)
 6. Importance of insecticides in vector control and their problems including environmental issue, resistance etc.
7. Concept of integrated vector control, studies and strategies needed for its use

8. Various entomological field techniques of insect collection and their importance
9. Various laboratory-processing methods inclusive of vector incrimination, identification and the techniques used for host preferences studies
10. Management of various entomological data and their interpretation
11. Demonstration of various medically important insect-vector specimen including laboratory process for identification, vector incrimination and preservation of larvae and adult specimen for study and future references

Paper IV Medical Sociology and Anthropology and Population Studies

Medical Sociology and Anthropology

General Objectives

To provide the concept of Medical Sociology and Medical Anthropology and opportunity for critical application of those concepts in public health related field focusing on:

Provider-consumer relationship, culture and health, social structure, social problems and applied research.

Specific Objectives

1. Overview of sociological/anthropological concepts, terminology, relation with other sciences, and its importance in Public Health
2. Develop cross-cultural approach in Public Health considering the significance of socio-cultural factors
3. Develop and apply appropriate provider-consumer relationship
4. Identify social structure, their health modalities and consequences
5. Define and critically appraise the social problems and develop the strategies to reduce those problems for better health.
6. Describe different social, ethnographic research and modalities in Public Health.

Course Content

Unit I Introduction

1. Introduction to sociology/Anthropology
2. Sociological terminology: Social status, role, social stratification, cultural relativism, social process, ethnocentrism, norms, values, customs, belief systems, cultural-lag, ethno-medicine, self-medication
3. Definition, nature and scope of Medical Sociology and Medical Anthropology
4. Historical development of Medical Sociology/Medical Anthropology
5. Relation of medical Sociology/Medical Anthropology with other sciences

Unit II Culture and Health

1. Meaning, definition and characteristics of culture
2. Definition of health, disease, illness and sickness
3. Personalistic medical system
4. Naturalistic medical system
5. Self medication/alternative medication and other prevailing health care practices and

its importance in Nepal.

6. Social importance of indigenous health care system and health care provider with special reference to Nepal.

7. Cross-cultural examples of the concept of illness and healing practices in Nepal

Unit III Provider-Consumer Relationship

1. Meaning and interpretation of provider-consumer relationship
2. Reciprocal roles of provider and consumer
3. Parson's sick role model
4. Szaz and Hollander's basic model of provider-consumer relationship

5. Barriers in effective provider-consumer relationship
6. Changes in provider-consumer relationship with special reference to Nepal
7. Health Services user's rights, patient's rights and international charter to consumer's rights.

Unit IV Social Structure and Health

- 1 Interpretation of relationship between social class and health
- 2 Health Politics and sociological interpretation of Alma Ata Declaration of PHC
- 3 Ethnicity, health and health care
- 4 Public and Private health care system and their consequences
- 5 Role of family in health care and health socialization

Unit V Social Problems

- 1 Meaning, nature, type and causes of social problems
- 2 The sociological diagnosis of social problems
 - 3 Contemporary social problems in Nepal: poverty, unemployment, sexual abuse, drug abuse, child labor, bonded labor, prostitution and culture born disease, domestic violence, human right, discrimination of women and girls trafficking etc.
- 4 manifest and latent social problems
- 5 fatalism and social problems
 - 6 impact of social problems in society and Individual's health with special reference to Nepal
 - 7 Philosophy of social science in relation to health-paradigm, dominant paradigm, paradigm paralysis and paradigm shift.

Unit VI Research Methods in Sociology/Anthropology

1. Meaning and nature of research
2. Types and trends of social research
3. Importance of sociological/anthropological research in public health
4. Tools and techniques of data collection in sociology/anthropology: participant observation, participatory rapid appraisal (PRA), interview, questionnaire, case study, and focus group discussion
5. Review of the existing medical sociological/medical anthropological research with special reference to Nepal and its application in public health

Population Studies

General Objectives

Use different demographic tools in community diagnosis and health survey.

Specific Objectives

1. Define and generate information on the population, structure, composition and distribution of the community
2. Describe different population theories and tolls
3. Explain the impact of the population growth in the society and the country
4. Compute and interpret different demographic rates
5. Describe the relationship between fertility, mortality and population growth
6. Project the population at national and sub-national level
7. Define the principles of population policy
8. Explain relationship between population, ecology and environment

Course Contents

1. Demographic transition theory, Malthusian population theory, population growth and society
2. Population pyramids, age sex composition, aging
3. Fertility and its measures, Child women ratio, Reproduction rates
4. Mortality and its measures, Standardized birth and death rates, life tables and its simple construction
5. Migration and simple measures
6. Marriage statistics
7. Inter relationship between fertility growth mortality and population growth
8. Population projection: Arithmetic growth, Geometric growth, Exponential growth, Logistic growth, Population doubling time.
9. Population census, demographic and health surveys and some important demographic surveys
10. Indirect methods by estimation
11. Principles of Population policy: population policy of Nepal, regional and world
12. Green House effect: Acid rain and Ozone layer

Paper V Family Health

General Objectives

Analyze problems, appraise and apply appropriate solutions in their work to improve the health of families and community.

Specific Objectives

1. To critically analyze the family health situation and to formulate appropriate solutions to the needs of the community for which they are responsible.
2. To critically analyze the current health system and all the other sectors and agencies affecting health in the district down to the family level and find ways to collaborate and coordinate activities together to improve the health of the families.

Course Contents

The course will focus on following aspects:

- Analysis of the current situation
 - Appropriate indicators
 - Immediate, intermediate and root causes of problems
 - Critical analysis of the current program
 - Formulation of appropriate strategies to their need at district, community and family level
1. Cycle of life and vulnerability at different stages of life and their management.
 2. Emerging Family Health issues- (their impact on and the role of families and community)
 - Environmental degradation
 - Gender issues
 - Population/urbanization and its impact on both rural and urban health
 - Aging
 - Street children/working children
 - Girl trafficking
 - HIV/AIDS
 - Community mental health
 - CBR
 - Substance abuse
 - Others
 3. Principles of disease control affecting communities and family-(communicable and non-communicable diseases)
 4. Reproductive health-maternal health, safe motherhood, child health including child survival, family health and control of STD.
 5. Special health care for vulnerable groups
 6. Nutritional needs at community level; current nutrition policies and programmes; formulation of appropriate community based nutrition strategies.

Paper VI Health Promotion and Health Education

General Objectives

Play leadership role in health education planning, implementation and valuation through an applied and integrated approach.

Specific Objectives

1. Explain important educational theories and principles
2. Develop systems approach to preventive health education with reference to PRECEDE model through practical experiences
3. Apply modern educational technology/methodology with emphasis on interactive and participatory approach.
4. Demonstrate supervisory, evaluation and training skills in health education.

Course Content

Unit 1 Overview of:

1. Health education **philosophy**
2. **Role and functions** of health education specialist
3. The meaning, prospects and priorities for **health promotion** in 21st century with reference to Jakarta Declaration 1997 and Vic health Experience

Unit 2 Review and Critical Assessment of:

1. The **meaning, aims, scope and principles** of health education.
2. **Definitions** of health education including those given by D.B. Nyswander, G.W. Stewart, WHO scientific group, SOPHE-AAPHER, Dazel ward and L. Green

3. **Learning theories** including Pavlov's stimulus response; Thorndike's conditioned response, Skinners operant conditioning, Kurt Lewin's, Kelman's and Gesalt theory of learning
4. **Health behavior models (HBM)** including Rosenstock's principles; Kurt Lewin's force field theory-unfreezing, moving and re-freezing; Festinger's theory of cognitive dissonance, Lazarsfeld's the diffusion theory and Roger's adoption process.
5. **Methods** of health educational and its application in individual, group and mass situations. These methods will include: Counseling, Group discussion and Group Dynamics, Role-play, Demonstration, exhibition, Sociodrama, workshop, Seminar and other nominal group methods.
6. **Media** health education and its application. This will include graphic media display boards, three dimensional, projected, modern and traditional media
7. **Program planning, implementation and evaluation**

Unit 3 Detail Study and Application of:

1. **PRECEDE Framework:** Diagnosis, Planning, application and evaluation with reference to school, community, medical care facility and occupational setting
2. **Training** and manpower development
3. **Evaluation** of health education program: Input, process and output/impact evaluation and feedback mechanism

Papers VII International Health and Primary Health Care

General Objectives

Introduce health care systems of the world and international co-operations in light of Primary Health Care.

Specific Objectives

1. Describe different models of health care systems and public health practices
2. Discuss international regulation
3. Explain international declarations and convention outcome
4. Discuss bilateral and multilateral international co-operation in health
5. Explain historical background and prevalence of primary Health Care

Contents

Unit 1 Health Systems and Health Practices

Health care delivery systems in countries with different socio-political systems (India, Sri Lanka, China, United Kingdom, USA)

Unit 2 International Regulations and Declarations, National Health Laws and Regulations

Helsinki Declaration (ethics in research), Jakarta Declaration, Children Summit, Cairo

Conference, Beijing Conference, ICPD, UN convention on Social and cultural right of citizen

Unit 3 International Co-operations

Multi-lateral cooperation (example, WHO, UNICEF, UNFPA, UNDP), bilateral, co-operation, (for example, US, UK, USAID, JICA, SDC, GTZ), World bank, INGOs (for example, UMN, SCF).

Unit 4 Primary Health Care

Historic background, Alma Ata Declaration, principles and Strategies, Riga declaration, Bamako Initiatives, Comprehensive and Selective primary Health Care.

Paper VIII Research Methods in Health Sciences

General Objectives

Develop research proposal, conduct and disseminate research outcome in health sciences with participatory approach and facilitate informal decision at various management and professional

levels.

Specific Objectives

1. Identify and prioritize health research areas
2. Develop research proposals with objectives, research questions, design and methodology
3. Discuss the ethical issues in health research
4. Develop partnership optimization and informal decision in health research using essential National Health Research (ENHR) concept and process
5. Prepare research reports
6. Critically scrutinize research papers

Course Contents

1. Introduction to Research

- Definition
- Research types (qualitative and quantitative) incorporating epidemiological methods
- Importance and implication of research
- System research
- ENHR concept and process

2. Research Proposal Development

- The significance of study, justification, limitation
- Development of problem statement, research questions, characteristics of good research, hypothesis generation
- Variables (concept, measurement and criteria for defining the conditions)
- Study population (concept, defining study population)
- Sampling (method/size determination)
- Test instrumentation
- Implementation procedure
- Validification and assurance of reliability/quality

3. Data Collection

- Instrument
- Technique

4. Data Handling

- Coding
- Entry
- Checking
- Editing
- Analysis and interpretation
- Discussion, conclusion and recommendation

5. Errors in Research

- Biases (concept, sources, correction)
- Random error (concept, sources, correction)

6. Dissemination of Research outcome

- Target audience
- Approaches (report, article, seminar presentation)

7. Reliability and Validity

8. Ethics in Research

- Concept
- Confidentiality
- Ethical approval
- Informing the participant/respondent (objectives, and its consequences)

9. Research Management

- Resource management
- Research plan

Final choice of study design, sample size and measurement methods;
designing a questionnaire

Appoint staff and approach population, train and test observers, perform
fieldwork, check quality control

10. Scrutinizing Articles

- Importance of scrutinizing the articles
- Methods of scrutinizing
- Critical review of articles

11. Research in Sensitive Issues

Paper IX Health Systems Management and Health Economics

General Objectives

Carryout management functions for an efficient and effective achievement of an organizational goal through systems approach.

Specific Objectives

1. Explain systems approach to health service planning and prepare management plan (short-term and long-term)
2. Identify, generate and use health related information in management decision making process
3. Plan and project the human resource requirement for health care delivery at different level of health facilities

4. Identify and optimize the utilization of resources available
5. Plan, project and ensure continuous supply of drugs, equipment at the health facilities
6. Plan, manage, supervise and prevent disaster in national as well as local level
7. Monitor and evaluate program efficiency in terms of program personnel and logistics
8. Ensure quality of health services provided

Course Content

Unit 1 Introduction

Overview of the definition and principles of management, health system overview, national health system and health policy of Nepal, Management role and functions of the public health graduate.

Unit 2 Planning, Monitoring/Evaluation and Quality Assurance

Planning approaches, the planning process, need assessment, priorities, goals, targets, decisions, decentralization, organizations and management, decentralized health management, monitoring and evaluation, strategies and operational planning, technique of planning and health planning exercises in Nepal, supportive supervision, integrated and comprehensive supervision, quality assurance.

Unit 3 Resource Management

- Material (equipment and supply)
 - A rational use of drugs (RUD), drug management (estimation and projection of drug supply, monitoring and control of drug use, ensure sound prescribing pattern and measures to address the inadequacy of drug supply)
 - Human resource management (recruitment, placement, supervision and quality control)
 - Financial planning and management (financial control, cost cutting, cost containment, cost sharing, budgeting auditing.

Unit 4 Information Management

Information needs, information quality (relevance, timelines, usability, reliability), information technology, financial information, logistics information, human resource and health information, communication, information demand and support system, recording and reporting.

Unit 5 Operational Management

Work flow, work measurement, scheduling, queuing, space layout and other factor affecting efficiency and productivity and basic principles for quality measurement and improvement in health care setting.

Unit 6 Disaster Management

- Man-made and natural disaster, its role, sensing system, investigation, relief operation, emergency and long-term measures
- Basic elements of disaster planning
- TRIAGE, management and evaluation of relief operation
 - Role of government and non-government, local, international and regional organizations in disaster management.

Unit 7 Health Economics

- Concept of macro and micro economic environment
 - Overview of health sector, its problems, five-year plans, budget allocation and health sector financing alternative health care financing scheme in Nepal.
 - Economic agent, principles, theory of demand and supply, cost calculation and cost effectiveness analysis

Unit 8 Integrating Exercise

This exercise will provide the basis for each student to integrate information, skill and analytical abilities presented and developed during the early sessions of the course. Oral and written presentation and critique from the teacher will be the integral part of the session. This will develop confidence and abilities to:

- Identify health service and management needs
- Develop programs to meet the identified needs
- Set priorities and strategies for action plan
- Monitor and evaluate the plan
- Present ideas to supervisors through effective oral and written presentation

Paper X Dissertation

The third and fourth semester period will be designated for the preparation of dissertation, which will include the preparation of research proposal, approval of the proposal, data collection, analysis and report writing. Essential National Health Research (ENHR) approach is to be followed. See Appendix (ENHR curriculum).

1. Preparation for the Dissertation

- Outline model of dissertation
- Selection of subject
- Selective reading and abstracting
- Counseling by librarian
- Writing introductory chapters on present world state of knowledge on the subjects
- Preparation of preliminary bibliography
- Submission of thesis tutor
- Determining and outlining the methodology of research including statistical approach
- Submission of dissertation tutor
- Pre-testing methodology and design
- Revision of design

2. Field Activities

- Data gathering and preliminary field analysis
- Checking of data (validity)

3. Data Processing, Analysis and Report Writing

- Compilation
- Analysis and critique
- Supplementation and complementation of data
- Discussion
- Summary
- Acknowledgement
- Writing, editing and presentation

Appendix I

Essential National Health research (ENHR) Curriculum for Master in Public Health of Institute of Medicine Integrated with the Curriculum of Research Methodology

The following curriculum was designed after the several consultations with different concerned authorities in Institute of Medicine by the Task Force on ENHR curriculum Development. The task force also recommended to continue to organize special classes for the students of undergraduates in health sciences-MBBS, BN, BPH- on the advocacy of ENHR as usually done in recent years.

Course Description

The course on Essential National Health Research (ENHR) has been offered to MPH students in order to familiarize them with and provide opportunity to equipped with "an integral strategy for organizing and managing research, whose goal is to promote health and development on the basis of equity and social justice (through) the use of scientific methods to analyze health situations, identify problems and solve them¹". As an integral part of research methodology curriculum, it will enable students to identify one's role in managing health research and development, prioritizing research agenda, making research development participatory and inclusive and using the research outcomes-for informed decision. The students are expected on one hand to link themselves, as researchers, with decision/policy makers and beneficiaries/users/people, and on the other hand make research relevant to policy/program needs, and community health and developments needs. The student will be able to develop a research proposal for their dissertation on prioritized research agenda meeting the technical and ethical standards of IOM's Research Unit or Nepal Health Research Council (NHRC) and implement them appropriately. The competency thus developed will make able to develop and implement research projects independently in future accordingly to ENHR concept.

Course Objectives:

The student will be able to:

1. Related historical development, process and components of ENHR including roles of COHRED, GFHR, The Asian ENHR Network and ENHR Nepal.
2. Communicate and advocate ENHR process with participatory approach (multi-institutional, multi-sector, and multi-disciplinary involvement) in research development.
3. Assess research needs following participatory situation analysis, SWOT analysis and identification of gaps in health and development.
4. List need-based research agenda and prioritize the agenda by participatory interaction (leading to the selection of an appropriate topic for dissertation by each student)
5. Review published and unpublished literature including electronic search on the selected research topic.
6. Write background/overview on the topic including justification and limitation of the research, frame problem statement, and define research question(s)/hypothesis (Students are to be encouraged to involve potential users of the research for this)
7. Define and explain quantitative and qualitative methods, case study, descriptive methods, analytical methods, intervention methods, field trial, experimental and quasi-experimental methods, and randomized control trials in epidemiological, clinical, social, anthropological and ecological studies/research.
8. Develop appropriate research methodology by participatory process including research type/design, description of operational procedures or methods, sampling techniques and process, test instrumentation validity and reliability or quality assurance techniques.
9. Develop data management plan including participatory data processing, analysis, interpretation, and implication to the program/policy for which research topic is developed (Students are to make appropriate computation, statistical treatment and illustration).

10. Assess ethical status of the proposal (including ability to relate informed and voluntary consent, data safety and protection procedure, confidentiality and ethical standards of Institute of Medicine and Nepal Health research Council (NHRC)
11. Develop logistic plan for implementation including appropriate supervision and cross checks
12. Plan for writing the research with scientific competence
13. Plan for interaction with resource persons, experts and key stakeholders about the research findings and for dissemination process
14. Implement the research appropriately fulfilling all the elements in above plan and
15. Follow up and evaluate the utilization of the research outcomes with active advocacy and promotion.

Teaching/Learning Activities and Methods:

Active student-centered or interactive teaching/learning methods will be implemented. Classroom setting will be seminar/workshop type with the participation of key stakeholders, representatives from different constituencies in health. It will also be problem-based and field or practice-based. Each student will be developing proposal for his/her dissertation/research. Later as embodied in the MPH curriculum each student will present his/her proposal in the seminar specifically organized for the maturation of the proposal. Similarly, a student has to present the findings and recommendations to the community and stakeholders where the research is implemented, and in the institute of Medicine where key policy/decision makers, health professionals, experts from representatives will be invited. The formal submission of the dissertation will be made after peer review.

Evaluation:

Self-modulation and internal assessment peer review, evaluation by the participant in the presentation seminar, Research Unit and Dissertation Committee assessment, University examination and defense of dissertation.

References:

1. Task Force on Health Research for development/UNDP, ENHR-A strategy for action in health and human development. Geneva; UNDP1991.
2. ENHR Bangladesh, Handbook for Research proposal development, 66 Mohakhali, Dhaka, ENHR B.
3. Corlien VM. Designing and conducting health research projects, HSR training Series, Vol. 2, Part 1 and 2, IDRC and WHO.
4. Crawl KT, Fundamentals of medical research, Boston
5. Kerlinger NF, Fundamentals of Behaviour Research, New Delhi, Sage Publication
6. Porter RRW, Prysor-Jones S. Making a difference to policies and programmes. A guide for researchers, Washington: Support for Analysis and research in Africa (SSARA) Projects and COHRED, 1997

7. *Sachetana* Journal of ENHR Nepal.
8. *Khoj-Bin* Journal of Nepal Health Research Council (NHRC).

All references recommend for teaching/learning activities of research methodology in Tribhuvan University, Institute of Medicine.

Appendix: II

Faculty Members

Department of Community Medicine and Family Health, Institute of Medicine (IOM), Tribhuvan University

Dr. Mathura P. Shrestha, Professor and Head, Community Medicine and Family Health, IOM

Dr. Bimala Shrestha, Professor, Community Medicine and Family Health, IOM

Mr. Hari B. Pradhan, Associate Professor, Community Medicine and Family Health, IOM

Mr. Ishwar B. Shrestha, Associate Professor, Community Medicine and Family Health, IOM

Mr. Chitra K. Gurung, Associate Professor, Community Medicine and Family Health, IOM

Mr. Kiran D. Bhattarai, Associate Professor, Community Medicine and Family Health, IOM

Dr. Rachel Pinniger, Associate Professor, Community Medicine and Family Health, IOM Dr. Dr. Anand B. Joshi, Program Coordinator, Master in Public Health Program, Community

Medicine and Family Health, IOM

Dr. Sarad Onta, Lecturer, Community Medicine and Family Health, IOM

Dr. Madhu Dixit Devkota, Lecturer, Community Medicine and Family Health, IOM

Mr. Amod Poudyal, Lecturer, Community Medicine and Family Health, IOM

Mr. Narbada Thapa, Representative from NUFU, IOM

Mr. Ajaya Thakur, Lecturer, Community Medicine and Family Health, IOM

Mr. Shatrughan Ojha, Lecturer, Community Medicine and Family Health, IOM

Dr. Jeevan Bdr. Sherchand, Lecturer, Community Medicine and Family Health, IOM

Dr. Bandana Pradhan, Lecturer, Community Medicine and Family Health, IOM

Dr. Rajendra Wagle, Lecturer, Community Medicine and Family Health, IOM

Mr. Navin Shrestha, Lecturer, Community Medicine and Family Health, IOM

Mr. Ramji P. Pathank, Lecturer, Community Medicine and Family Health, IOM

Mr. Hira Bdr. Maharjana, Lecturer, Community Medicine and Family Health, IOM

Dr. Ritu P. Gartoulla, Lecturer, Community Medicine and Family Health, IOM

Mr. Madhusudan Poudel, Assistant lecturer, Community Medicine and Family Health, IOM

Mr. Ramesh Sigdel, Assistaant Lecturer, Community Medicine and Family Health, IOM

Mrs. Rawati Mayya Shrestha, Lecturer, Community Medicine and Family Health, IOM

Mrs. Rajanai Joshi, Lecturer, Community Medicine and Family Health, IOM

Mr. Kumar Thapa, Lecturer, Community Medicine and Family Health, IOM

Mrs. Binjwalla Shrestha, Library In-charge, Community Medicine and Family Health, IOM