In the Name of God

School of Public Health

Tehran University of Medical Sciences

International
Master of Public Health (MPH)
Program

In collaboration with

School of International Relations
Ministry of Foreign Affairs (MFA)

2012 - 2013

Introduction

In the First ECO Study Tour (Tehran, 9-12 December 2007), Tehran University of Medical Sciences (TUMS) proposed to hold a Master Program of Public Health (MPH) for ECO Member States.

The 20th Regional Planning Council (RPC) meeting (16-18 February, 2010, Antalya, Republic of Turkey) requested relevant Iranian authorities to provide necessary information for conducting the course on MPH Program.

The 21st RPC meeting (Tehran, 17-19 May, 2011) appreciated the kind offer of I.R. of Iran to extend two scholarships to each Member States in the field of Master of Public Health (MPH) commencing on October 1, 2011.

Master of Public Health

The Master of Public Health (MPH) is the standard professional Public Health Program recognized throughout the world. The MPH program is designed to provide fundamental skills in core areas of Public Health and Serves to those seeking a broader sense of knowledge to improve health services for the community. The MPH program at Tehran University of Medical Sciences is a 32-credit program. This program lasts normally one academic year with a possible extension to one and half year. It will be conducted on a full-time basis starting in October, 2012.

School of Public Health, Tehran University of Medical Sciences (TUMS)

Established in 1966, the School of Public Health is the oldest and largest center of health studies in I.R. of Iran, being the first in the country to train specialists a wide range of disciplines.

Since then, the School of Public Health (SPH) has been carrying out educational and research programs, with the aim of developing specialized manpower in the field of public health and addressing health related issues, environmental health problems, resulted from increasing environmental pollution which is seriously threatening human health.

Course Concentration Areas

Core courses (14 credits)

Core courses are compulsory for all MPH majors. They should be taken in the first term of the academic year. These courses include Principles of Epidemiology, Biostatistics, Principles of Nutrition, Health Systems, Environmental Health, Health Economics and Health Promotion.

Major courses (14 credits)

After completion of the core courses, the students will attend the courses that fit their areas of interest. This allows for personal tailor-made academic program to fit the student's individual needs and career goals. In academic year (2012-13), students have the opportunity to specialize in Epidemiology and Health Services as one of the major areas of public health. The following major courses are offered in 2012-13: Communicable Diseases Prevention and Control, Non-Communicable Diseases Prevention and Control, Economic Evaluation, Reproductive Health, Statistical Methods in Epidemiology, Health Management and Planning and Evidence Based Public Health.

Complementary courses (4 credits)
Complementary courses are usually held in summer. These courses include Preparation of Research Grant Applications, Applied Data Analysis and Report Writing, and Master's Report.

Sources of Funding
All costs of the program will be provided by the Government of the I.R. of Iran. The scholarship awards will cover the following:
- One round-trip airfare to/from Tehran I.R. of Iran (shortest possible route and economy class)
- Board and Lodging
- Full Tuition
- Living stipend (Monthly Subsistence Allowance)
- Visa fee
- Insurance
- Cultural events

Admission Requirements
Preference for admission to the MPH program is given to applicants with clearly identified career goals that are consistent with the anticipated training, a strong academic record and background, some actual field and health services management experience and impressive references ensuring of success as a public health professional. The following groups of applicants will be considered for the program:

- Graduates of professional doctoral programs such as medicine, dentistry, veterinary medicine, or pharmacy.
- Graduates of master or equivalent degrees of health related programs.

Language
This program will be conducted entirely in English. Participants will be expected to be fluent in spoken and written English. Applicants must provide documentary evidence of their proof of English. This is defined as an Official Certification by their Ministry or minimum IELTS equivalent scores required for admission into the program is 5.0.
Note: If a participant is found unable to achieve the program objectives due to language incapability, he or she may be sent back to home country.

Attendance and accreditation
The participants will be expected to attend at least 14/18 sessions and all field visits throughout the course. Those participants fulfilling the attendance requirements and reaching a satisfactory standard will be awarded the MPH Certificate from Tehran University of Medical Sciences.

Invited Countries
The eligible nationals of ECO Member States (other than I.R. of Iran) namely: Islamic Republic of Afghanistan, Republic of Azerbaijan, Republic of Kazakhstan, Kyrgyz Republic, Islamic Republic of Pakistan, Republic of Tajikistan, Republic of Turkey, Turkmenistan and Republic of Uzbekistan are entitled to apply for the Program.

Admission Criteria

- ✓ All applicants for the program MPH must:
- ✓ Be nominated by the Ministry of Foreign Affairs of their respective Governments,
- ✓ Meet Admission Requirements,
- ✓ Meet English language requirements (TOFEL/IELTS),
- ✓ Be preferably below 45 years of age,
- ✓ Having good (physical and mental) health to undergo the program activities (Declaration is needed),
- ✓ Be selected by the Selection Committee,
- ✓ Submit Reference Letters from academic members or senior public health officials.

Member Country's Nomination

Each member country is requested to nominate two principal candidates as well as two alternate candidates through their Ministry of Foreign Affairs. The nominees should complete the Application Form that also accompanies a Personal Statement and Resume. Please send the above-mentioned documents to the International Relations Office in Tehran University of Medical Sciences at the following address by August 22, 2012.

No. 21, Dameshgh St. Vali-e- Asr Ave., Tehran, I.R. of Iran,
Postal code: 1416753955, P.O. Box: 14155-5799,
Tel: (+98) 21 8889 6692 – 8889 6696,
Fax: (+98) 21 8889 8532,
E-mail: mph_iro@tums.ac.ir

If the application forms are neither fully completed nor duly submitted, it may bring disadvantages to the applicant.

For any query and coordination, please contact the following:

Course Director
Prof. Reza Majdzadeh
Epidemiology and Biostatistics Dept.,
School of Public Health,
Tel (Fax) :(+98) 21 6649 5859
E-mail: rezamajd@tums.ac.ir

Coordinators
1) International Relations Office
Tehran University of Medical Sciences
Address: No. 21, Dameshgh St. Vali-e Asr Ave., Tehran, I.R. of Iran,
Postal code: 1416753955, P.O. Box: 14155-5799,
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2) Mr. Ahmad Saffari,
Acting Director, Human Resource & Sustainable Development
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Tel: (+98) 21 2283 1733-4,
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- **Resume**
  Applications should include a standard resume (curriculum vitae).

- **Personal Statement**
  Along with the application form, applicants should submit a one-page personal statement explaining reasons led to his/her decision to apply for the MPH program. Statement should also include applicant's personal and career projections with regard to his/her participation in the Program as well as clear determination and commitment to attend the year long intensive MPH program.

Admission procedures

This program has a maximum capacity of 21 places. Selections for the MPH program will be made jointly by MFA and TUMS. They will review applications and select the most competent applicants. The acceptance letters will be sent to the successful applicants by TUMS.
TUMS will also send detailed information on visa, travel and accommodation arrangements in I.R. of Iran.

Acceptance

The candidates selected for the program should obtain visa from the nearest Embassy of Islamic Republic of Iran for the entire period of the Program.

Admission to the course

Participants must arrive in Tehran no later than September 21, 2012. Any participant whose acceptance letter is not issued by September 5, 2012 will not be admitted to this program. Any accepted applicant with no valid passport and visa by September 21, 2012 for the I.R. of Iran, will not be admitted to the course.

Others

The participants
- are responsible for veracity of the information provided in the application forms;
- are committed to complete the Program with success;
- are obliged to observe rules, regulations, code of conduct and conditions of the host country and the host university (including the dress code of the I.R. of Iran);
- are not entitled to any right to work while in the Program

Curriculum of MPH program in
School of Public Health and Institute of Public Health Research
Tehran University of Medical Sciences

Core courses (14 credits)
- *Principles of Epidemiology(2)*
- *Biostatistics (2)*
- *Nutrition and Public Health (2)*
- *Health Systems (2)*
- *Environmental Health (2)*
- *Health Economics (2)*
- *Health Promotion (2)*

Major courses (14 credits)
- *Communicable Disease Epidemiology and Control (2)*
- *Non-communicable Disease Epidemiology and Control (2)*
- *Economic Evaluation (2)*
- *Reproductive Health (2)*
- *Statistical Methods in Epidemiology (2)*
- *Health Services Planning and Management (2)*
- *Evidence Based Public Health (2)*

Complementary courses (4 credits)
- *Preparation of Research Grant Applications(1)*
- *Applied Data Analysis and Report Writing (1)*
- *Master's Report (2)*

Course Descriptions

- **C1. Principles of Epidemiology**

This course introduces principles and methods of epidemiologic investigations. In addition, application of epidemiologic methods to screening of diseases and delivery of health services are briefly described. The major topics are investigation of outbreaks, natural history of diseases, study designs, and validity and reliability.

- **C2. Biostatistics**

This introductory course intends to provide the students with a broad overview of biostatistics and statistical concepts used in the medical and public health sciences. The emphasis is on the application of the statistical methods rather than on mathematical details. Basic concepts of statistical inference including hypothesis testing and confidence intervals are introduced.

- **C3. Nutrition and Public Health**

It covers issues of nutritional status assessment and the utilization of nutritional measures as outcome (protein-caloric malnutrition, nutrient deficiencies, obesity, poor dietary intake, etc.) and predictor variables (diet and health, weight and mortality, etc.) in studies. Nutrition screening and surveillance also are addressed. Selected topics in nutrition and health will be covered in depth through critical analysis of the literature.

- **C4. Health Systems**

The course covers need, demand and use for health care; lay and formal care; different levels of health services; health professionals; financing health systems; processes of health services; professional-patient relationship; organizing health systems; primary care systems; health systems at national levels; quality assessment and improvement.

- **C5. Environmental Health**

The course offers a broad background introduction to the analysis of the health consequences of exposure to air, contaminated water, wastewater, municipal and industrial solid wastes, and other special environments contaminated by biologic, chemical, and physical agents.

- **C6. Health Economics**

It covers topics such as determinants of demand, supply and costs of production; concepts of elasticity, basic market model, market failure, arranged and internal markets in health care; models of financing health systems through insurance, social insurance, taxing, out-of-pocket etc; theories of equity in health; role of incentives in health systems, and its relationship with efficiency and equity.

- **C7. Health Promotion**

This course covers health promotion theories; definitions of health; individual, social and structural determinants of health. Lectures will cover topics such as motivational interviewing, peer education, mass media campaigns, social marketing, media advocacy, community development, and settings-based health promotion. It will discuss different models of facilitating individual behavior change including health psychology theories.

- **M1. Communicable Disease Epidemiology and Control**

This course is an introduction to epidemiologic methods used in communicable disease investigations. The importance of surveillance systems in detecting epidemics

and development of effective disease prevention and control strategies are also presented. This course focuses on understanding the relationships between the host, environment and agents that relate to disease causation. The course emphases on old diseases, e.g. Tuberculosis, Leprosy, and newly emerging diseases, e.g. SARS, Avian Influenza, HIV/AIDS, as well as nosocomial infections.

- **M2. Non-Communicable Diseases Epidemiology and Control**

This course covers the major non-communicable diseases (e.g. Heart disease, Cancer, Diabetes, etc); and their impact, methods of prevention, and special problems that are associated with them.

- **M3. Economic Evaluation**

This course helps students to understand issues in identification, measurement and valuing of costs and outcomes; discounting, marginal and opportunity cost; methods of measuring health utility; understand the principles of economic evaluation methods as applied to heath care; application of different economic evaluation methods and how they should be used and interpreted

- **M4. Reproductive Health**

This course provides an overview of the health problems of mothers and children and examines programmatic interventions, in the context of primary health care, that respond to those problems. The student will acquire skills in assessing status of maternal and child health in a community, setting measurable objectives, planning and evaluating appropriate and culturally-relevant interventions, and involving communities in these processes.

- **M5. Statistical Methods in Epidemiology**

This course composes four parts including, measures of effect in epidemiology, adjustment with and without multivariate models, survival analysis and evaluation of diagnostic tests. One of the important points in the course is using appropriate statistical software.

- **M6. Health Services Planning and Management**

It will cover theories of management; power and political players in health care; organizational management; management of hospital services; management of primary care services; organizational culture; learning organizations; leadership; performance management; motivation; management of change; risk management; case management; monitoring health services; accreditation; financial management and self-financing.

- **M7. Evidence Based Public Health**

It introduces the principles of evidenced based health-care, systematic approaches and their use for policy recommendations including: searching for appropriate literature, critical appraisal of the quality of different study designs, data synthesis and translation of knowledge produced by evidences to policy makers.

- **C8. Preparation of Research Grant Applications**

This course introduces practical steps for development of a research proposal including priority setting, selecting study theme, statement of the problem and other issues regarding grant applications. In addition, students will be acquainted with different agencies that are supporting research in public health areas especially international agencies.

- **C9. Applied Data Analysis and Report Writing**

This is an applied course on computerized data analysis covering frequencies, cross-tabs, comparing means, stratified analysis, measurement of association and logistic regression.

➢ **C1. Principles of Epidemiology**

2 credits

Aim

To provide basic concepts of epidemiologic methods and their application in public health practice.

Description

This course introduces principles and methods of epidemiologic investigations. In addition, application of epidemiologic methods to screening of diseases and health services are briefly described. The major topics are epidemiological measures, study design, investigation of outbreaks, natural history of diseases, study designs, and validity and reliability.

Course content
- Definition and history of epidemiology
- Epidemiologic approach to public approach
- Diseases occurrence measurements
- Epidemiologic methods, including:
- Descriptive
- Cross sectional
- Case control
- Cohort
- Interventional
- Interpretation of epidemiologic findings
- Screening tests performance assessment
- Surveillance system
- Early response and preparedness

References

Gordis, L. (2205), *Epidemiology (3rd edition)* Saunders

Methods of assessment

Final exam; assignments; in-class activities

➢ **C2. Biostatistics**

Aim
To learn the application of basic statistics techniques in public health practice and give practical skills for data analysis with simple statistical computer packages.

Description
This introductory course intends to provide the students with a broad overview of biostatistics and statistical concepts used in the medical and public health sciences. The emphasis is on the application of the statistical methods rather than on mathematical details. Basic concepts of statistical inference including hypothesis testing and confidence intervals are introduced.

Course content
- Definition of statistical testing, confidence interval, types one and two of errors and statistical power.
- Point and interval estimates for quantitative and qualitative variables.
- Sample size calculation for common study designs.
- Statistical tests for comparison of two means (dependent and independent).
- Statistical tests for comparison of two proportions (dependent and independent).
- Concepts for analysis of the variance and linear regression.
- Introducing to rate, proportion, relative risk and odds ratio.
- Odds ratio estimation and testing.
- Estimation of common odds ratio and its confidence interval.

References
Jewell, P.N. (2004), *Statistics for Epidemiology*, CRC press, Philadelphia

Methods of assessment
Final exam; assignments; in-class activities

➤ C3. Nutrition and Public Health

2 credits

Aim

To familiarize the students with the importance of nutrition in public health and the etiology and distribution of diseases in the community.

Description

It covers issues of nutritional status assessment and the utilization of nutritional measures as outcome (protein-caloric malnutrition, nutrient deficiencies, obesity, poor dietary intake, etc.) and predictor variables (diet and health, weight and mortality, etc.) in studies. Nutrition screening and surveillance also are addressed. Selected topics in nutrition and health will be covered in depth through critical analysis of the literature.

Course content

- Importance of nutrition in public health, nutritional concepts
- Assessment of nutritional status, relations between nutritional status and diet, nutritional screening
- Epidemiology of diseases of nutrient deficiency
    Protein-energy Malnutrition
    Iron-deficiency and other nutritional anemais
    Xerophthalmia
    Iodine-deficiency disorders

- Nutrition in the etiology and distribution of disease
- Hypertension, atherosclerosis and cardiovascular disease
    Obesity
    Diabetes mellitus
    Cancers

- Food and nutrition in the health of vulnerable groups
    Hospital nutrition
    Nutritional needs of patients with chronic diseases
    Artificial feeding
    Expectant and breast-feeding mother nutrition
    Nutrition for the elderly
    Food security and safety

- Effectiveness of nutritional interventions

Methods of assessment

Final   exam;   assignments;   in-class   activities

➢ C4. Health Systems

2 credits

Aim

This course will cover the basic functions of health systems and examine the main challenges to health systems in different countries.

Description

The course covers discuss need, demand and use for health care; lay and formal care; different levels of health services; health professionals; financing health systems; processes of health services; professional-patient relationship; organizing health systems; primary care systems; health systems at national levels; assessing quality and quality improvement.

Course content
- Introduction to health care systems
- Disease, illness and knowledge
- Need, demand and use of health care
- Health care professionals
- Patients and carers
- Financing health systems
- Provider incentives in health care
- Health sector reform
- Primary care systems
- Decentralization, autonomy and accountability
- Public and private sectors in health systems
- Health systems at national levels
- Improving quality of health services

References

Cochrane AL (1989). *Effectiveness and efficiency: random reflections on health services*. 1971 London: BMJ.

Cook TD and Campbell DT (1979). *Quasi-experimentation: design and analysis issues for field settings*. Boston: Houghton Mifflin.

World Health Organization (2000). *The world health report 2000. Health systems: improving performance*. World Health Organisation.

Black N and Gruen R (2005). *Understanding health services*. Open University, Maidenhead.

Methods of assessment

Final exam; a critique of a health system of choice (assignment); in-class activities

- ➤ **C5. Environmental Health**

2   Credits

Objectives

1- Introduction to a broad range of environmental science and public health factors that affect the health of a community.

2-Understand the impact of exposures from air, water and land by biological, chemical and physical agents on environmental and public health.

3-Acquaint students with the scope and magnitude of the interaction between human health and the environment.

4- Emphasize interrelationships between various environmental elements, and how those interrelationships must be recognized in designing environmental controls.

5- Familiarize the student with the concepts utilized in environmental intervention strategies to protect human health.

Description

The course offers a broad background introduction to the analysis of the health consequences of exposure to air, contaminated water, wastewater, municipal and industrial solid wastes, and other special environments contaminated by biologic, chemical, and physical agents.

Course Content

Introduction, Overview & Structure of Environment Health

Water Pollution: Water quality and quantity, Water and health, Water born diseases, Sources, pollutants

- Field Trip: Water Intake

Water quality guidelines and standards

Introduction to water treatment processes

- Field Trip: Water Treatment Plant

Wastewater Treatment: Definitions, pollutants, general aspects of treatment

Introduction to biological wastewater treatment

- Field Trip: Wastewater Treatment Plant

Air pollution: general definitions, pollutants, health effects

Air pollution control strategies and technologies

- Field Trip: Air pollution monitoring system

Global aspects of air pollution (Ozone layer depletion, acid rain, global warming)

Solid Waste: general definitions, heath implications, sources and classifications

Solid Waste collection and disposal systems

- Field Trip: Composting factory, Landfill site

References

Koren H. (1991), "*Handbook of Environmental Health and Safety*",Lewis Publisher.

Salvato J. A. (1992), *"Environmental Engineering and Sanitation*",John Wiley & Sons,Inc.

WHO, WMO, UNEP, (2000) "*Global UV Index*", WHO
USEPA, (1995)*,"Air Quality Index"*, EPA
Web Based Documents Published by EPA
 Web Based Documents Published by WHO

Methods of assessment
10% Reports of field trips; 10% Individual Paper (6-8 pages) based on group project; 20% assignments using web-based resources and case-studies; 40% comprehensive final exam.

➢ C6. Health Economics

2 credits

Aim

This course introduces basic concepts of health economics and their contribution to our understanding of health systems at different levels.

Description

It covers topics such as determinants of demand, supply and costs of production; concepts of elasticity, basic market model, market failure, arranged and internal markets in health care; models of financing health systems through insurance, social insurance, taxing, out-of-pocket etc; theories of equity in health; role of incentives in health systems, and its relationship with efficiency and equity.

Course content

- Introduction to health economics
- Supply and demand for health
- Agency relationship, provider induced demand, moral hazard
- Efficiency in health care
- Markets and quasi-markets in health
- Market failure
- Equity
- Remuneration methods and incentives
- Financing health systems
- Insurance, DRGs and HRGs
- National health accounts
- Resource allocation
- Priority setting
- Challenges to health economics

References:

Folland,S; Goodman,AC; Stano,M. (2004). *The economics of health and health care*. Pearson Prentice Hall: New Jersey.

McPake,B; Kumaranayake,L; Normand,C (2002). *Health economics: an international perspective*. Routledge: London.

Fuchs VR (2000). The future of health economics. *Journal of Health Economics,* 19, 141-157.

Methods of assessment

Final exam; assignments; in-class activities

> ### C7. Health Promotion

2 credits

Aim

To understand basic theories of health, health behavior and health promotion and how they can be utilized for improving public health

Description

This course covers health promotion theories; definitions of health; individual, social and structural determinants of health. Lectures will cover topics such motivational interviewing, peer education, mass media campaigns, social marketing, media advocacy, community development, and settings-based health promotion. It will discuss different models of facilitating individual behavior change including health psychology theories.

Course content

- What is health
- Determinants of health
- Measuring health
- Quality of life and its measurements
- Health inequalities
- Introduction to health promotion
- Health promotion theories
- Theories of behavior change
- Theory of Planned Behavior
- Health Belief Model
- Stages of Change Model
- Designing health promotion interventions
- Role of health promotion targets
- Sexual health
- Smoking and other addictive behaviors
- Healthy lifestyles
- Ethics of health promotion
- Putting health promotion evidence into practice

References

Naidoo J and Wills J (2005). *Public health and health promotion, developing practice.* Bailliere Tindall, Edinburgh.

Glanz K, Rimer BK and Lewis FM (2002). *Health behaviour and health education, theory, research and practice*. Jossey-Bass, San Francisco

Michie S and Newman S (2000). Preface to models and methods in health psychology. *Psychology and Health,* 15, i-iii.

Methods of assessment

Final exam; planning a health promotion intervention (group activity); in-class activities

➢ M1. Communicable Disease Epidemiology and Control
2 credits

Aim
To give a basic understanding of the epidemiologic methods and their application in infectious diseases control programs.

Description
This course is an introduction to epidemiologic methods used in communicable disease investigations. The importance of surveillance systems in detecting epidemics and development of effective disease prevention and control strategies are also presented. This course focuses on understanding the relationships between the host, environment and agents that relate to disease causation. The course emphases on old diseases, e.g. Tuberculosis, Leprosy, and newly emerging diseases, e.g. SARS, Avian Influenza, HIV/AIDS, as well as nosocomial infections.

Course content
- Introduction to principles of non-communicable disease epidemiology
- Natural history of communicable diseases
- Transmission models and dynamics of communicable diseases
- Mathematical modeling in communicable diseases epidemiology
- Surveillance of communicable diseases
- Vaccination epidemiology
- International regulations for control of communicable diseases
- Disease control following disasters
- Epidemiology and control of selected communicable diseases:
  Nosocomial infections
  Malaria
  Crimean-Congo Hemorragic Fever
  Lieshmaniosis
  SARS
  Tuberculosis
  HIV/AIDS and sexually transmitted diseases
  Nosocomial infections
  Avian influenza

References:
Giesecke, J, (2002), *Modern Infectious Disease Epidemiology* (2nd edition) Arnold publication, London

Methods of assessment
Final exam; assignments; in-class activities

➢ M2. Non-communicable Disease Epidemiology and Control
2 credits

Aim
To familiarize students with the epidemiology of non-communicable diseases.

Description
This course covers the major non-communicable diseases (e.g. Heart disease, Cancer, Diabetes, etc); and their impact, methods of prevention, and special problems that are associated with them.

Course content
- Introduction to principles of non-communicable disease epidemiology
- Importance of non-communicable diseases along health system
- The impact of non-communicable diseases on global burden of diseases
- Causation in non-communicable diseases
- Epidemiology and control of:
    - Accidents and injuries
    - Cardio vascular diseases
    - Cancer
    - Diabetes
    - Mental health
    - Iodine deficiency disorders
    - Addiction
- Occupational epidemiology
- Environmental epidemiology
- Nutrients as risk factor for non-communicable diseases
- World Health Organization approach to non-communicable diseases control

Methods of assessment
Final exam; assignments; in-class activities

➢ M3. Economic Evaluation

2 credits

Aim

To understand the principles of economic evaluation and different methods of economic evaluation.

Description

To understand issues in identification, measurement and valuing of costs and outcomes; discounting, marginal and opportunity cost; methods of measuring health utility; understand the principles of economic evaluation methods as applied to heath care; application of different economic evaluation methods and how they should be used and interpreted

Course content

- Micro-economics and economic evaluation of health technologies
- Identifying, measuring and valuing costs
- Identifying, measuring and valuing outcomes
- Marginal and opportunity cost
- Discounting and inflation,
- Quality and quantity of life
- Measuring utility in health care
- Economic evaluation methods
- Cost-of-illness, cost-minimization and cost-benefit approaches
- Burden-of-disease studies
- Cost-effectiveness studies
- Cost-utility studies
- Using economic evaluation data (e.g. cost per QALY) to inform decision making
- Modeling and trials in economic evaluation
- Uncertainty and sensitivity analysis

References

Drummond,M.F.; O'Brien,B.J.; Stoddert,G.L.; Torrance,G.W. (2004). *Methods for the economic evaluation of health care programmes*. Oxford University Press: Oxford.

Coast J (2004). Is economic evaluation in touch with society's health values? *BMJ,* 329, 1233-1236.

Greenhalgh T (1997). How to read a paper: papers that tell you what things cost (economic analyses). *BMJ,* 315, 596-599.

Jefferson T, Demicheti V, and Mugford M (2000). *Elementary economic evaluation in health care*. 2nd ed. London: BMJ Publishing Group.

Methods of assessment

Final exam; critical appraisal of literature; a proposal for economic evaluation; in-class activities

➢ **M4. Reproductive Health**
2 credits

Aim
To improve knowledge and skill of students in critically assessment of the major public health strategies used to address health of women and children especially in developing countries.

Description
This course provides an overview of the health problems of mothers and children and examines programmatic interventions, in the context of primary health care, that respond to those problems. The student will acquire skills in assessing status of maternal and child health in a community, setting measurable objectives, planning and evaluating appropriate and culturally-relevant interventions, and involving communities in these processes.

Course content
- Maternal and child health, millennium developments goals, social and political perspectives
- Maternal and child health indices
- Preconception cares including pre-marriage counseling, screening test and other prevention strategies and their impact on child and mothers' health
- Antenatal and post delivery cares
- Maternal mortality; estimation methods, leading causes and control
- Family planning; impact of different methods and the role of counseling
- Growth monitoring and malnutrition
- Integrated Management of Childhood Illness
- Evaluation of maternal and child services

Methods of assessment
Final exam; assignments; in-class activities

> ### M5. Statistical Methods in Epidemiology

2 credits

Aim
To improve students' skills in analysis of epidemiologic data.

Description
This course composes four parts including, measures of effect in epidemiology, adjustment with and without multivariate models, survival analysis and evaluation of diagnostic tests. One of the important points in the course is using appropriate statistical software.

Course contents
- Categorical data analysis
- Stratified analysis
- Direct and indirect adjustment
- Interaction
- Survival analysis
- Spatial data analysis
- Survey data analysis

References
Jewell, N. P. (2004). *Statistics for Epidemiology*, CRC press, Philadelphia

Methods of assessment
Final exam; assignments; in-class activities

➤ M6. Health Services Planning and Management

2 credits

Aim

The course introduces important issues in the management of health services. It describes basic principles relevant to effective management of health care organizations.

Description

It will cover theories of management; power and political players in health care; organizational management; management of hospital services; management of primary care services; organizational culture; learning organizations; planning process; leadership; performance management; motivation; management of change; risk management; case management; monitoring health services; accreditation; financial management and self-financing.

Course content

- Theories of management
- Power and political players in health care
- Organizational management and culture
- Learning organizations
- Leadership and clinical leadership
- Quality management models
- Management of change
- Management of hospital services
- Management of primary care services
- Case management and disease management
- Risk management
- Clinical practice guidelines
- Monitoring health services and accreditation
- Planning process: situation analysis and stratification
- Planning process: target setting and program budgeting
- Financial management and self-financing
- Evaluating management interventions and evidence-based management

References

Iles V and Sutherland K (2001). *Managing change in the NHS. Organisational change: a review for health care managers, professionals and researchers*. London: National Co-ordinating Centre for Service Delivery and Organisation.

Shaw RP (1999). *New trends in public sector management in health: applications in developed and developing countries*. Washington: World Bank Institute.

Griffin RW (2005). Management. 7th ed. Texas A&M University.

Ferlie E (1997). Large scale organisational and managerial change in health care: a review of the literature. *Journal of Health Services Research and Policy,* 2, 180-188.

Methods of assessment

Final exam; critical appraisal of literature; in-class activities

➢ **M7. Evidence Based Public Health**

2 credits

Aim

To improve students skills to critically assess and using evidences for decision making and translation of scientific evidence for formulation of policies.

Description

It introduces the principles of evidenced based health-care, systematic approaches and their use for policy recommendations including: searching for appropriate literature, critical appraisal of the quality of different study designs, data synthesis and translation of knowledge produced by evidences to policy makers.

Course contents

- Evidence based medicine and evidence based public health, similarities and differences
- Critical appraisal of primary researches
- Development of a systematic review protocol
- Meta analysis
- Knowledge generation organizations
- Health technology assessment agencies
- Knowledge utilization models
- Knowledge translation and exchange

References

Brownson RC, Baker EA, Leet TL, Gillespie KN. *Evidence-Based Public Health*. New York: Oxford University Press; 2003

Methods of assessment

Final exam; assignments; in-class activities